Gouvernance d'échelle transversale utilisant les méthodes d'évaluation multi-critères, multi-acteurs pour arbitrer les conflits environnementaux : Le cas des centrales nucléaires en Turquie

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Cross-scale governance using multi-criteria, multi-stakeholder evaluation methods to mediate environmental conflicts: *The case of nuclear power plants in Turkey*

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Thèse de doctorat

. . . to my late grandmothers, Vesile, Sarete, and Jacqueline

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Titre : Gouvernance d'échelle transversale utilisant les méthodes d'évaluation multicritères, multi-acteurs pour arbitrer les conflits environnementaux : Le cas des centrales nucléaires en Turquie

Mots clés : Justice Environnementale ; Methodes Multi-critères ; Conflits Environnementaux ; Turquie ; Gouvernance Environmental

Résumé : Les conflits de distribution écologiques résultant du métabolisme social croissant du monde et l'expansion des frontières des marchandises qui en résulte, sont confrontés à des défis importants pour la gouvernance, en particulier lorsqu'il existe des interactions multiples, entre la nature et les individus qui possèdent de systèmes de valeurs différents, à travers différentes échelles (du local au global). L'interaction actuelle entre les échelles semble être définie par le pouvoir juridictionnel - une manière qui favorise les échelles internationales et / ou nationales, qui négligent les processus en cours qui se déroulent à d'autres échelles. Il existe une disparité entre les échelles où les décisions sont prises et les actions sont effectuées. Par conséquent, un mécanisme de gouvernance, avec non seulement des propriétés participatives prenant compte des différents systèmes de valeurs, mais avec des mécanismes de coordination entre plusieurs échelles, devient nécessaire

À cette arrière-plan, cette thèse maintient que les méthodes d'évaluation multicritères délibératives et multi-acteurs pourraient ouvrir de nouvelles voies pour les mécanismes de gouvernance environnementale pour les conflits avec des interactions transversales et vise à montrer l'importance d'une perspective multi-échelle dans un cadre multicritère. Dans une tentative d'opérationnaliser cet objectif, elle utilise le cas conflictuel de la production d'énergie nucléaire en Turquie et l'évalue aux échelles nationales et locales dans le contexte national et mondial des mouvements de justice environnementale. Elle démontre que l'élaboration d'un problème de décision conflictuel par une méthode multicritère / multi-échelle est utile pour i) identifier les défis résultant des interactions entre les parties prenantes et ii) les présenter de manière transparente et compréhensible.

Title : Cross-scale governance using multi-criteria, multi-stakeholder evaluation methods to mediate environmental conflicts: The case of nuclear power plants in Turkey

Keywords : Environmental Justice; Multicriteria Methods; Environmental Conflicts; Turkey, Environmental Governance

Abstract : The ecological distribution conflicts arising from the growing social metabolism of the world and the resulting expansion of the commodity frontiers pose important challenges for governance, especially when there are multiple interactions between the nature and people holding different value systems, across different scales (from local to global). The current interaction between scales seems to be defined by the jurisdictional power – a manner that is inclined to favour the international and/or national scales, which overlook the ongoing processes taking place in other scales. Such a discrepancy gives rise to a mismatch between the scales where the decisions are made and actions are undertaken, calling for a governance mechanism – one with participatory properties taking into account the different value systems and coordination mechanisms across multiple scales.

At this background, this thesis argues that deliberative and multi-stakeholder multi-criteria evaluation methods might open new avenues for environmental governance mechanisms for the conflicts with cross-scale interactions and aims to show the importance of a multi-scale perspective within multi-criteria framework. In an attempt to operationalize this aim, it uses the conflicted case of nuclear energy production in Turkey and assesses it at national and local scales within the context of national and global environmental justice movements. It is shown that framing a conflicted decision-making problem through multi-scale/multi-stakeholder method is helpful: i) in identifying the challenges resulting from the cross-scale interactions between stakeholders and ii) in presenting them in a transparent and comprehensible manner.

Preface

The study and training for this thesis were carried out mainly within the laboratory **REEDS** (International Centre for Research in Ecological Economics, Eco-innovation and Tool Development for Sustainability) in **Université de Versailles St-Quentin-en-Yvelines**, at Rambouillet, until its forced closure in December 2015. Afterwards, the studies were carried out in Turkey at large, with the administrative support kindly provided by **LAREQUOI** (Laboratoire de Recherche en Management de l'Université de Versailles Saint-Quentin-en-Yvelines).

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This has been quite a journey. Frankly, I, too am quite astonished with the result, and that it has finally come to an end. When I started primary school 27 years ago, I was unaware that it would be such a long journey, and quite a challenging one for that matter. Had I known it, I would probably have tried to stop my parents right there before they enrolled me in primary school. But what is done is done and there is no going back. This thesis has emerged as a sort of a shortened abstract of the collection of my thoughts, memories, and studies over the last two decades.

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This thesis would not exist if my supervisor, Martin, was not there to guide me. I consider myself very lucky and privileged to be a student of his, who, despite the troubled academic and administrative conditions he was put into by the university[1], never abandoned me and was there whenever I asked for it.

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I would like to dedicate this thesis to my three late grandmothers. Vesile and Sarete loved me unconditionally since I was born. And Jacqueline, my grandmother in France, took me to her home and treated me no different than a grandson of her own. They all shared their wisdom and love with me. And unfortunately, they all passed away during the writing process of this thesis. I wish they were here today to see the completion of this work.

Also as always, responsibility for any errors in this thesis remains my own.

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Introduction

The unprecedented growth in consumption and production has escalated the need for energy and raw materials, with resource use reaching exceptionally high levels worldwide. Today, contrary to belief that the economy will 'dematerialize' and economic growth 'decouple' from natural resources and environmental impacts, the resource extraction (e.g. oil, copper, gold, uranium and biomass) frontier continues to expand (J. W. Moore, 2000) and this often ignites environmental justice movements against projects such as dams, thermal and nuclear energy plants, mines, industrial fishing, and waste disposal (Martinez-Alier, 2002, 2012).

Overall, ecological distribution conflicts are encountered at different places in the world, for a variety of themes, and at multiple scales. While some are about the unequal distribution of the risks of dangerous waste (e.g. Love Canal case in USA[2]); others involve the extraction of metals and minerals at the expense of destroying the livelihoods of indigenous people (e.g. Wirikuta silver and gold mining conflict in Mexico[3]); and some others are about privatisation of commons such as pasturelands (e.g. the case of Sarıkeçili Nomads in Turkey[4]). In many instances, conflicts arise not only due to unequal distribution of economic and ecological costs and benefits, but also due to lack of participation in decision-making and recognition of rights and identities (Schlosberg, 2007). Moreover, while some conflicts, such as climate change, are observed at global scale, some others are seen just at local scale, as in the case of building wind turbines near a small village.

In the literature, deliberative multi-criteria/multi-stakeholder evaluation frameworks are put forward as useful conflict governance and decision aiding tools. These frameworks are important for supporting decisions over policy problems where there are conflicting objectives in different dimensions or domains (such as economic, social, environmental, institutional, or cultural) and between different stakeholders (Montis, Toro, Droste-franke, Omann, & Stagl, 2000). They allow the comparison of several policy options simultaneously, by taking into account a wide range of criteria (or governance issues), and hence, "help overcome the single criterion barrier which often imposes an unrealistic context on the field of decision support" (Banville, Landry, Martel, & Boulaire, 1998, p. 16). In principle, participatory multi-criteria frameworks are very able to integrate multiple perspectives and different valuation languages, thanks to their capacity to accommodate incommensurability and pluralism in a transparent manner, and hence, are employed in assessing trade-offs and consequences in complex decision-making problems. As Gamboa (2008, p. 138) puts forward, "the multi-criteria structure can be seen as a social expression, which highlights both the diversity of viewpoints and the effects of alternatives

[2] Love Canal dump site at Niagara Falls, USA http://ejatlas.org/conflict/love-canal-niagara-falls-usa
[3] Wirikuta silver and gold mining, Mexico http://ejatlas.org/conflict/wirikuta-mexico
[4] Preservation of Livelihood of Sarikecili Nomads, Turkey http://ejatlas.org/conflict/preservation-of-livelihood-of-sarikecili-nomads-turkey

on different dimensions *(…) (It)* is very useful in order to foster both discussion and the practice of deliberative democracy". In this context, the well-established and diverse participatory multi-criteria literature (e.g. Banville, Landry, Martel, & Boulaire, 1998; Chamaret, O'Connor, & Recóché, 2007; De Marchi, Funtowicz, Lo Cascio, & Munda, 2000; Munda, 2008; O'Connor & Spangenberg, 2008) offers viable multi-stakeholder assessment and governance mechanisms for socio-environmental conflicts.

Yet, several human activities induce environmental change at different scales and sometimes at multiple scales. In other words, the underlying causes of (local or global) environmental change can be found at different scales. For instance, changes at the global scale in climate, environment, economies, institutions, and/or cultures have significant impacts at the local scale; and vice versa, seemingly smaller changes at the local scale are aggregated into bigger factors influencing a global change (Wilbanks & Kates, 1999). Similarly, while the individuals act on a small, local scale, the consequences of their actions may be felt at global scale (McLennan & Moore, 2012). A classic example is burning fossil fuels at the household level, which contributes to the greenhouse effect at the global scale. On the other hand, some human activities such as producing energy from nuclear power may have potential impacts on several scales simultaneously. Indeed, in such complex cases with cross-scale linkages and interactions, researchers need to work harder to reveal the cause-effect relationships, since the scales of the actions and their consequences may be so distant that identifying the right connections may require specific attention (McLennan & Moore, 2012).

However, the current policy-making practices often fail to acknowledge and address the abovementioned cross-scale linkages. As put forward by Kates et al. (2001), in many instances there exists a mismatch between the scales where the decisions are made and actions are taken. As Cash et al (2006) argue, for the most part, the policies designed solely at the global scale from a top-down perspective may have little or no relevance to local decision makers and communities, since, in many instances, the local and indigenous knowledge is disregarded and deemed unreliable by the national and international actors. Moreover, as Adger et al (2003) point out, local and national actors and/or stakeholders may have contradicting objectives, and in the case of uneven power distribution (usually in favour of the national stakeholders), locals may think that their interests are disregarded. Hence, top-down decision mechanisms are likely to create conflicts between national and local actors.

Of course, this does not necessarily mean that decentralised and bottom-up decision-making mechanisms always deliver better or more effective solutions either. While conflicts arise when national scale decisions do not take into account local ecological and socio-economic dynamics, local scale solutions too may not adequately carry out the functions of national institutions and fail to achieve desirable outcomes at national and/or global scales (Berkes, 2002). On that vein, Reid, Berkes, Wilbanks, and Capistrano (2006, p.8) argue that the "choice of scale (…) is not politically neutral, because that selection may intentionally or unintentionally privilege certain groups" – national or local stakeholders, depending on the choice of assessment and hence, the decision scale. Therefore, an effective multi-scale/cross-scale governance mechanism should aim to establish balance between the goals and objectives expressed by stakeholders at different scales (Gamboa, 2008). Overall, conflicts between the actors operating at different scales need to be addressed through a

governance mechanism that helps us to discover where conflicts come from; filter the ones that are scale driven or related with scale and where possible tackle them simultaneously at several scales, especially in the current globalised world where the need for governance of cross-scale interactions is greater than ever (Berkes, 2002).

In this context, many studies argue for the need to use multi-scale/multi-stakeholder assessment and governance mechanisms in conflictual cases ranging from local to international (e.g. Cash et al., 2006; Giampietro & Mayumi, 2000; Giampietro & Ramos-Martin, 2005; Lemos & Agrawal, 2006; Paavola & Adger, 2006). Zermoglio et al. (2005), for instance, point out to at least two types of benefits to be gained through conducting assessments in multiple scales. The first type of benefit is related with potential *information gains*, such as better problem definition and understanding of causality and cross-scale effects, and the second type is related with potential *impacts gains*, such as improved scenarios, more balanced assessment results, and increased capacity building. However, as Reid et al. (2006) put forward, it is always a challenge to design and implement a multi-scale assessment procedure. There are important questions such as how the scales of analysis should be selected or whether a common conceptual assessment framework can be used at multiple scales. Furthermore, as claimed by Paavola and Adger (2006), there is no clearly distinguishable scale of decision making for undertaking actions. Hence, the issues of "how the governance should be operationalized" and "which actors should participate" do not have clear answers, either. Moreover, as Cash et al (2006) point out, when governing the human-nature relationship, further challenges such as plurality, ignorance, and mismatch arise due to the complexity of cross-scale interactions.

At this junction, this thesis argues that the current participatory and deliberative multi-criteria frameworks, being capable of accurately addressing challenges such as value plurality, uncertainty, participation, and incommensurability; can also help addressing the scale-related assessment and governance challenges put forth by Reid et al. (2006), Paavola and Adger (2006) and Cash et al. (2006). It also underlines that scale related perceptions/issues drive part of the conflicts. To this end, this thesis puts forward a cross-scale multi-stakeholder multi-criteria framework, which can offer a multi-scale assessment procedure capable of presenting the complex cross-scale linkages and of eliciting the sources of tension between stakeholders at different scales. It is hoped that such a framework may open avenues for an effective and transparent governance for ecological distribution conflicts with cross-scale interactions, by at least showing the origins of the conflicts, in particular, when/if they are scale driven. In order to illustrate its usefulness, this thesis utilizes a cross-scale multi-criteria framework to assess a particular conflict around the policy decision of introducing nuclear energy in Turkey.

Turkey does not have any nuclear power plants (NPP), but the state and civil society has a long conflict history around nuclear energy construction plans. Indeed, Turkey's nuclear program, albeit one of the oldest in the world, is arguably among the most unsuccessful ones (Jewell & Ates, 2015; Şahin, 2011). Nearly every government since 1960s has pursued the aspirations of building nuclear power plants, but failed to realise them for several reasons such as financial constraints, lack of administrative or technical capacity, or civil society opposition. Recently, Turkey seems to have overcome some these problems by adopting a *Build-Own-*

Operate strategy through intergovernmental agreements with Russia and Japan. Although this strategy addresses some challenges such as lack of financial and technical capacity, it creates new ones. That is, the policy decisions regarding the nuclear power plants are now made in a non-transparent and top-down manner, excluding many local and national stakeholders, and such lack of participation and transparency causes a strong reaction from a rather active civil society at both national and local scales.

In an attempt to frame and assess this decision-making problem at hand, the relevant local and national stakeholders, and the alternatives and governance issues they set forth are identified after a thorough institutional analysis. Accordingly, the views of each stakeholder group regarding each alternative with respect to each governance issue are mapped into a three dimensional deliberation cube, using a multi-criteria approach. This multi-criteria assessment exercise, conducted from a scale perspective, is then used to identify and explore the sources of tensions, divergences, and conflict of interests between stakeholders, given the transparent organisation of a variety of information categories. Overall, the analysis helps in understanding which conflicts arise due to the complex interactions between scales and which ones arise due to value plurality (O'Connor et al., 2006). Such a framing of the problem shows in an explicit manner why and how the choice of a particular scale for a policy decision would matter for an effective governance mechanism in mediating conflicts. It points to the identification of at least three types of scale-related conflict sources between national and local stakeholders:

i) Scales does matter when offering different sets of alternatives for comparison: local and national stakeholders put forward different sets of policy options.
ii) Scale does matter in defining priorities: Local and national stakeholders differ in the governance issues they prioritise.
iii) Scale does matter in the perception of a particular governance issue: Local and national stakeholders may perceive the magnitude or the size of a particular impact differently.

These three types of conflict sources, identified through this multi-criteria exercise, aptly present the great extent to which perceptions, values and priorities of people are affected by the scale they are located in, and explain why a single set of solution offered by stakeholders in a particular scale creates ineffective and/or undesired outcomes in other scales. No doubt, the identification of scale-related conflict sources and the inter-linkages and interactions between the local and national stakeholders is a necessary step for finding pathways to mediating a specific ecological distribution conflict. It is hoped that such a framing of the problem helps addressing, if not completely resolving, the three types of scale-related conflict sources identified above, as follows:

i) First, thanks to the multi-criteria exercise, a more complete set of policy options can be identified – these options may be put forward by actors at different scales.
ii) Next, the social choice problem can be handled using a larger set of governance issues, put forward by both national and local stakeholders.

iii) Lastly, if conducted in a participatory and deliberative manner, the multi-criteria exercise is able to bring together the members of the different stakeholder groups and the exercise itself may become a collaborative learning and conflict management process.

In that regard, using a multi-criteria approach from a scale perspective for framing the conflict over nuclear power plants in Turkey provides substantial information and impacts benefits, in terms of better problem definition and a fuller understanding of the issues at hand, improved analysis of scale-dependent processes and how perceptions and perspectives of the stakeholders are dependent on their scale. Overall, it enables a better understanding of the cross-scale relationships between environmental, social and economic processes, and there is a greater potential to incorporate different perspectives from different scales into the policy-making process. Although the better understanding of a problem may not necessarily mean that a better policy decision will be made, "it does provide a sound basis for making better decisions and for holding decision makers accountable" (Reid et al., 2006, p. 1).

The thesis is divided into two main parts. **Part I** provides a theoretical, empirical, and methodological review of environmental conflicts encountered around the world, as well as of multi-criteria framework in order to better position the importance of scale in these conflicts. **Part II** analyses a real-world conflict case– the introduction of nuclear power into the energy portfolio of Turkey – to show how a multi-criteria/multi-stakeholder approach with a large scope in spatial scales can serve as an assessment and a potential governance tool for an ecological distribution conflict.

To open a path for a grounded discussion on the ecological distribution conflicts, **Chapter 1** in **Part I** will first set out to answer the questions of *what is distributed* and *how it is distributed*, and to link this discussion to the environmental justice problematique. It will also provide an empirical review of the ecological conflicts around the world, by presenting the status of the recent environmental justice struggles reported in the EJAtlas[5]. The cross-scale linkages within environmental conflicts will also be discussed based on specific examples, again carefully selected from the EJAtlas.

Chapter 2 will try to position the multi-criteria evaluation tools as a cross-scale conflict assessment and governance procedure. To this end, it will begin with a short theoretical background of cross-scale governance for the human-environment interactions, by first trying to answer the questions of *what scale is*, and *why and how it matters*. Following this, it will briefly present the properties of the multi-stakeholder multi-criteria methods, by giving short descriptions of three deliberative and multi-stakeholder multi-criteria frameworks: The Social Multi-Criteria Evaluation (SMCE) (Munda, 2004), Multi-Criteria Mapping (MCM) (Coburn & Stirling, 2016) and the Deliberation Matrix in INTEGRAAL framework (O'Connor et al., 2006). Relying on the INTEGRAAL framework, this chapter will conclude with a presentation on how a multi-criteria/multi-stakeholder approach can serve as an assessment and a potential governance tool for ecological distribution conflicts having a large scope in spatial scales.

[5] Environmental Justice Atlas – www.ejatlas.org

Part II starts with **Chapter 3,** which lays out the current situation of the environmental distribution conflicts in Turkey, by making use of the Turkish Map of Environmental Justice. This will be followed by a short account of the status quo of environmental governance in Turkey. Next, a brief summary of the energy related conflicts will be provided, by focusing on four main types of conflicts on energy production: i) coal and fossil fuel ii) hydropower, iii) renewable energies such as wind, solar, and geothermal, and iv) nuclear. Finally, the chapter will conclude with an attempt to identify the cross-scale interactions in Turkey's energy-related conflicts.

Chapter 4 will first look at the historical development of nuclear power in the world and present the recent trends. Then, it will focus on the particular case of Turkey, by first recounting its history of nuclear power in an attempt to provide a background for the debate over nuclear energy. **Chapter 5** will use this debate to show that the multi-criteria/multi-scale framework presented in **Chapter 2** may offer a conflict governance mechanism that serves environmental justice. Towards this end, **Chapter 5** is divided into three parts: First, a qualitative and textual exploratory analysis of the nuclear debate in Turkey is presented to identify the relevant stakeholders, policy alternatives and governance issues at hand. Next, the judgements of each stakeholder, in each policy alternative, and across all governance issues are presented in the three dimensional deliberation matrix devised by O'Connor et al. (2006). Finally, the main types of scale-related conflict sources identified are presented, to show i) how and to what extent scale matters in governing ecological distribution conflicts and ii) how a multi-criteria framework offers pathways to properly address such conflicts.

By bringing together different stakeholders to discuss conflicting issues at different scales and taking different languages of valuation into account, this thesis aims to contribute to the deliberative multi-criteria/multi-stakeholder evaluation literature, particularly in framing and understanding cross-scale conflicts. The constructed deliberation framework tries to improve cross-scale linkages from local to global and to generate a process that recognises environmental as well as socio-economic needs. As such, the study aims to contribute to the desired focus shift in environmental policies from technocratic *environmental management* to participatory *environmental governance*.

Part I: Environmental conflicts: A theoretical, empirical, and methodological review

Environmental conflicts are encountered at different places in the world, for a variety of themes, and at multiple scales. They can be observed over a broad range of scales, from local to global. For instance, both the construction of a wind turbine near a small village (local scale) and climate change (global scale) constitute the subject matter of environmental conflicts. The theme of the conflicts has a wide variety too: some deal with the unequal distribution of the risks of dangerous waste; others involve the extraction of metals and minerals at the expense of destroying livelihoods of indigenous people; and some others are centred on the privatisation of commons such as pasturelands. Furthermore, they are not only concerned with (economic and ecological) distribution, but also with participation in decision-making and the recognition of rights and identities (Schlosberg, 2007).

In such conflict cases, deliberative multi-criteria/multi-stakeholder evaluation methods that integrate multiple perspectives and different valuation languages are put forward as governance and decision aiding tools for their ability to accommodate incommensurability and pluralism in a transparent manner. There is also a strong need to conduct an in-depth analysis of these conflicts in order to reveal the linkages across scales, as this will help in conceptualizing more thoroughly the unique characteristics of particular conflicts and hence will help in providing a more effective governance mechanism. In many instances, a decision-making mechanism seeming to provide an effective solution at one particular scale may end up generating more conflicts in another scale.

At this background, this part argues that multi-stakeholder and deliberative multi-criteria framework, which are already capable of providing effective governance frameworks horizontally, can also be used as effective governance frameworks for vertical governance, and hence, it aims to present a governance mechanism that is capable of tackling issues at multiple scales. In order to achieve this aim, **Chapter 1** will first provide a theoretical and empirical review of ecological distribution conflicts with concrete examples of cross-scale linkage problems based on the *Global Atlas of Environmental Justice* (EJAtlas). Drawing on the existing cross-scale governance and multi-criteria evaluation literatures, **Chapter 2** then offers a cross-scale deliberative multi-criteria framework that can be used as a governance support tool in mediating ecological distribution conflicts with cross-scale linkages.

Chapter 1: The Environmental justice problematic

Today, contrary to the belief that the economy will 'dematerialize' or "decouple", the need for energy and raw materials continues to increase and resource extraction frontiers continue to expand. This so-called increased social metabolism leads to ecological distribution conflicts around the world, igniting environmental justice movements (Martinez-Alier, 2002, 2012). In an attempt to map these conflicts around the world, the *Global Atlas of Environmental Justice* (EJAtlas) was launched in 2014, documenting environmental justice movements against particular economic activities on a global map. The central aim of this exercise is to bring the environmental mobilisations to the fore by making them more visible. Often these environmental mobilisations are observed at local scale and perceived as disparate cases; however, a closer look actually helps revealing horizontal (across spaces) and vertical (across scales) linkages between them.

In order to better understand the characteristics of such conflicts, this chapter will present a brief theoretical and empirical review of ecological distribution conflicts, followed by a short report of the potential cross-scale linkages within such conflicts.

a) Ecological distribution conflicts

The term *Ecological distribution conflicts* (also called socio-environmental conflicts or environmental conflicts), first coined by Martinez-Alier and O'Connor (1996), refers to the "social, spatial and temporal asymmetries or inequalities in the use by humans of environmental resources and services (whether traded or not), for example, in the depletion of natural resources (including loss of biodiversity), and in the burdens of pollution" (Martinez-Alier & O'Connor, 1999, p. 381). In fact, the emergence of this term was inspired by a similar concept from political economy, namely "economic distribution conflicts", which studies the conflicts between the capitalists and workers, over the distribution of the value added of the production processes. While the study of economic distribution conflicts is seen as part of political economy literature, the term "political ecology" is reserved for the branch focusing on ecological distribution conflicts (Martinez-Alier & O'Connor, 1999).

Ecological distribution conflicts are encountered at diverse places in the world and they afflict the developed as well as the developing countries. That is, no matter how developed the country, its society is not immune to the troubles caused by such conflicts. Regarding the themes of these conflicts, there is, again, a wide variety. While some concern the unequal distribution of the risks of dangerous waste; others involve the extraction of metals and minerals at the expense of destroying livelihoods of indigenous people; and yet some others are about privatisation of commons such as pasturelands. EDCs can be at the global scale such as climate change, or they can be observed at a local scale, such as building wind turbines in the vicinity of a small village. In short, we see such conflicts in different places, for a variety of themes, and at multiple scales.

To better understand the issue of distribution in both economic and ecological terms, it is useful to investigate first, *what* is distributed, and then *how* it is distributed. Hence, this section will first introduce the concepts of economic growth and wealth accumulation, and the growing material and energy throughput accompanying it, also widely known as societal metabolism. As the next step, the notion of (both economic and ecological) unequal exchange will be discussed shortly, to finally open a path for a grounded discussion on the ecological

distribution conflicts and identify the links to the main question of environmental justice.

What is distributed?

For gaining a thorough understanding of (economic or ecological) distribution conflicts, it is crucial to investigate first the entity (abstract or concrete) that is being distributed in a society. There are at least two possible answers to the question of what is distributed: One may first investigate it from an economic point-of-view and focus on the distribution of the total goods and services produced in society. Alternatively, one may adopt an ecological perspective, focusing on the distribution of the natural resources, ecosystem services, risks and hazards of the production processes instead.

Since the industrial revolution, the world has become richer and more populated, thanks to innovations enabling faster and more efficient production and hence faster accumulation of wealth (D. O'Neill, 2015b). By simple cause and effect reasoning, the growth of individual income or wealth is associated with increasing consumption and hence increasing prosperity (Jackson, 2011) since a higher income is considered to mean lesser budget constraints, hence increased choices and higher utility in neoclassical economics terms. Such reasoning, in turn, calls for continuing economic growth as the means to deliver even higher incomes. Even though it is clear that "prosperity is not just about income" (Jackson, 2011, p. 49) governments in general are obsessed with increasing the aggregate incomes of their citizens, measured as *Gross Domestic Product* (GDP).

The GDP is a measure of the economic activity of a country, and simply calculates the total value of all final goods and services produced within a country over the course of a specific period of time, usually a year (D. O'Neill, 2015a). It was initially developed to help governments understand whether the economy is doing well, and whether their policies were working (D. O'Neill, 2015a), by simply integrating all the production data into a single number, which would go up when economy did well, and down when it did not (Fioramonti, 2013) [6]. And when GDP increases, it is called economic growth.

However, economic growth and its measure as GDP have been heavily contested. To quote the prominent ecological economist Herman Daly (in Jackson, 2011, p. 267):

> The fundamental axiom of growth, rigorously stated by Kenneth Boulding, is that 'when something grows, it gets bigger!' When the economy grows, it too gets bigger. So, dear economist, when the economy grows, (a) exactly what is it that is getting bigger? (b) How big is it now? (c) How big could it possibly get? (d) How big should it be? Given that economic growth is the top priority for all the nations, one would expect that these questions would get a major attention in all economic textbooks. In fact, (b), (c) and (d) are not raised at all, and (a) is answered unsatisfactorily.

At best, GDP could be offered as an answer to the first question posed above by Daly: "exactly what is it that is getting bigger?" GDP has proven to be an imperfect measure since it does not really distinguish between good and bad activities. That means, for instance, increasing the investments in education and spending money on cleaning an oil spill both increase the GDP and hence create economic growth; however, the latter economic activity actually decreases the level of social welfare (D. O'Neill, 2015a). Daly calls this situation

[6] A recent and thourough overview of the concept of GDP and issues regarding the measurement of wealth is provided by Munda (2015)

uneconomic growth, which means economic growth "costs more than it is worth at the margin", where the bad economic activity, that Daly calls *the illth,* increases faster than wealth (Daly, 2013). Trying to maintain the economy growing this way actually inflicts more damage to the society than it yields benefits.

Another answer to Daly's first question is the *throughput*. With the growth in production and consumption, the flow of useful matter and energy extracted from the nature increases as well, together with the waste resulting from the process of production and consumption (Daly, 1996). Societies, like a living body, metabolise energy and material in order to remain operational (Şorman, 2015). So, throughput may be interpreted as the food of the society's metabolism (Martinez-Alier, 2009). The growth in consumption and production has escalated the need for energy and raw materials, with resource use reaching exceptionally high scales worldwide. Over the last century, the global GDP increased twenty-four fold (D. O'Neill, 2015b) and accompanying this, the global energy use increased eleven-fold, material use eight-fold, and ores and industrial minerals more than twenty-two fold (Krausmann et al., 2009).

With the increased size of societal metabolism, the human-induced pressure on natural systems mounts up as well. The fast growing need for the inflow of materials and energy triggers the need for extraction of materials, causing the so-called commodity frontiers to expand into new, previously untouched areas (J. W. Moore, 2000). Furthermore, a social metabolism perspective implies that inputs into the production cycle eventually become outputs in the form of wastes (Martinez-Alier & Walter, 2016). Consequently, the corresponding outflows of wastes and emissions increase as well. (M. Fischer-Kowalski & Haberl, 2007). In the last century, the increasing global social metabolism has resulted in significant human pressure on the ecological systems, directly or indirectly aggravating global environmental problems. We observe large-scale deforestation, reduction of wilderness areas and biodiversity loss due to the expansion of biomass extraction, groundwater depletion or contamination due to toxic outflows of the production systems (Krausmann et al., 2009). Similarly, climate change is one of the well-known results of the growing social metabolism of the world, caused primarily by the increasing consumption of fossil fuels to match the ever-growing energy demand of the increasing population.

The correlation between economic growth and social metabolism raises questions regarding the physical limits of growth. That is, an economy relying on finite and non-renewable resources and on limited capacity for absorbing waste cannot grow indefinitely without exceeding the ecological and planetary limits (Jackson, 2011; Meadows, Randers, & Meadows, 2005). In fact, the argument that the economy cannot grow indefinitely can be traced back to more than two hundred years ago, where Robert Malthus argued that the growth in population and economy is restrained by the physical limits of production factors, mainly land (Malthus, 1798). Indeed, following Daly's argument of uneconomic growth (Daly, 2013), one could argue that even if there really was infinite economic growth, it would not be a desirable goal, since it would be accumulating *illth* rather than wealth, thus failing to improve society's real well-being (D. O'Neill, 2015b)

More often than not, the conventional response to such concerns is the concept of decoupling, which describes the process where economic growth becomes less and less dependent on the material throughput (Jackson, 2011). The relationship between economic growth and material throughput, with respect to the decoupling

status of the economy fall into three categories (Haberl, Fischer-Kowalski, Krausmann, Weisz, & Winiwarter, 2004). First, there may be "no decoupling" at all – that is the amount of material or energy necessary to produce a unit of GDP (i.e. material or ecological intensity of GDP) either does not change, or increases. Second, there may be "relative decoupling", meaning that material intensity decreases but the total amount of material consumed in the economy increases, (i.e. the total throughput increases slower than the GDP). Lastly, there may be "absolute decoupling" (or "dematerialisation"), which means that while the economy continues to grow, the size of the societal throughput declines over time.

The driving factor behind decoupling is the advances in technology, which enable societies to produce more efficiently. The nature of the relationship between the environmental impact, population, the size of the economy, and technology can be explained through a simple mathematical identity, called the "Ehrlich Formula" **I=P×A×T** (Ehrlich & Holdren, 1971; Holdren & Ehrlich, 1974). According to this simple formula, also called the *IPAT* model, the impact (I) of the human activity on the environment can be factored in three: the size of population (P), level of affluence (A) measured in income per person, and technology (T) measuring the intensity of impact for each unit of income.

As long as the T factor is going down, we can talk about a relative decoupling. However, for an absolute decoupling to take place, the impact I needs to go down as well. In a society where population and income per person are increasing, absolute decoupling can happen only if the rate of decline in T is faster than the rates of increase of P and A combined (Jackson, 2011). This is also related to the *Environmental Kuznets Curve* (EKC) hypothesis, which simply states that the environmental impact of the economic growth is greater initially. However, when the economy becomes developed enough, the environment gets more valuable and it becomes possible to create more wealth with less impact and hence decrease the overall impact of the economic activity on the environment, mainly thanks to the technical progress. Accordingly, the trend of environmental impact over the years takes an inverted u-shape in affluent industrial countries (Fischer-Kowalski & Amann, 2001).

Another counter-response against the "limited resources" argument is the concept of "*circular economy*", where used materials and resources are not discarded into nature but reintroduced into the production cycle, with the aim of reducing both input of new resources and output of wastes by closing economic and ecological loops (Haas, Krausmann, Wiedenhofer, & Heinz, 2015). Accordingly, the limited amount of resources can be used several times to produce more value, and accumulate more wealth. However, due to the physical laws of the universe (i.e. the laws of thermodynamics), not everything can be recycled (e.g. energy) and some materials can be only recycled in part due to entropy (Georgescu-Roegen, 1971, 1986; Martinez-Alier, 2016). This implies that the economy can never be truly circular if the production relies on the non-renewable resources, such as fossil fuels or metal ores. On the other hand, with the current global metabolic rate, renewable resources such as aquifers and biomass are overexploited (Martinez-Alier, 2016) and as Haas et al. (2015) argue, the current scale of global social metabolism is not sustainable and must be reduced.

How is it distributed?

The size of global economic activity (measured as the global GDP) is getting unquestionably bigger since the

industrial revolution, and it is accompanied by the level of throughput. As a result, the human-induced negative impacts on the environment and nature are increasing, as well. However, neither the total accumulated wealth itself, nor the environmental problems created by the process of production of it are distributed evenly between and within societies. There is a distribution problem for the production resources and accumulated wealth, which always intrigued the early classical economists/philosophers such as Ricardo, Marx and Engels. For instance, according to Ricardo, "the discovery of the laws that regulate distributive shares is the '*principal problem in Political Economy"*(in Kaldor, 1956, p. 83).

Looking at the problem on the global scale, it is obvious that not every country benefits equally from the globally accumulated wealth and that there is a distribution problem among societies. For instance, Bourguignon and Morrisson (2002) show that the income equality between countries deteriorated dramatically since the industrial revolution. Similarly, the resources and accumulated wealth within a society is not distributed evenly among its members either, which creates economic distribution conflicts between and within societies – a topic investigated in the political economy discipline comprehensively.

The globally accumulated wealth was not the only thing that was distributed unevenly after the industrial revolution. Other than that, there is a difference between the metabolic patterns of the developed and non-developed countries. In fact, if all the countries in the world used the same amount of material and energy necessary to consume and produce with the current metabolic pattern of the industrial countries, neither the total amount of resources in the planet, nor the absorption capacities of global ecosystem would suffice (Haas et al., 2015).

Apart from the differences in the size of social metabolism, environmental problems are geographically and socially unevenly distributed as well, which in turn causes ecological distribution conflicts. As a result, there are local and global distribution conflicts happening between the global North and global South (e.g. a British oil company operating in Nigeria), or at the local scale (e.g. a local construction company extracting gravel and stones for the construction of a highway by destroying the livelihoods of a nearby village) (Martinez-Alier, 2002). Some other types of distribution conflicts could be listed as trans-boundary pollution such as acid rains, air pollution or climate change, environmental racism as seen in Warren County in USA in 1970s (Bullard, 1993), ecological unequal exchange (Hornborg, 1998), and intergenerational ecological debt (Azar & Holmberg, 1995).

The investigation of the life cycle of a commodity is the first step toward a better of understanding the relation between the social metabolism and ecological distribution conflicts. All goods pass through a similar series of procedures, called the "global commodity chains", from extraction to the eventual waste disposal (Raikes, Friis Jensen, & Ponte, 2000). According to Martinez-Alier and Walter (2016), there are four key stages in such commodity chains, where ecological distribution conflicts may emerge: *extraction* (e.g. conflicts over mining, oil drilling), *transportation* (conflicts over the construction of airports, ports, pipelines), *processing* (production plants affecting the quality of soil, air, water), and *final disposal* (conflicts over landfills, climate change)

According to Hornborg (1998), the economic and ecological distribution problems in human societies are the flip sides of the same coin and "it is only by looking at the ecological conditions of human economies that we

can adequately conceptualize the mechanisms which generate inequalities in distribution" (Hornborg, 1998, p. 128). Both problems are the eventual results of an "unequal exchange" where the price paid to a commodity does not reflect the value of labour, energy or material in it (Hornborg, 2003, 2009). For instance, commodities imported from poor regions or countries may not (and usually do not) fully account for the value of the negative environmental impacts, nor for the exhaustion of the natural resources (Martinez-Alier & O'Connor, 1999). Conversely, neo-classical economists are not convinced that a functioning free market trade may be undercompensated, unfair or unequal (Hornborg, 1998) (unless there is market power or in the case of environmental impacts, lack of markets, creating *externalities*). However, there is growing scientific literature claiming that countries in the global North (or *core* countries) are increasingly shifting production of resource- and emission-intensive goods, and accordingly the environmental burden of national growth, to the countries in the global South (or *periphery*) (Bringezu, Schütz, Steger, & Baudisch, 2004; Dorninger, 2014; Giljum & Eisenmenger, 2004; Martinez-Alier, 2002; Matthews et al., 2000; Muradian & Martinez-Alier, 2001).

As Kapp (1983) puts forward, such unequal or unfair ecological distribution as described above can be defined as *a system of cost-shifting*, which is inherent to capitalism. The names designated for this process in neoclassical environmental economics are "market failure" or "externalities" (Martinez-Alier & O'Connor, 1999), which means that the underlying cause of this problem is the non-inclusion of environmental goods and services into a market economy (the market failure being *the absence of prices*) so natural resources or environmental services are considered free gifts, or free disposals (O'Connor, 1993). Accordingly, the externalities can easily be *internalised* by putting a price tag on such impacts. This process of internalisation is actually seen as a *cost-shifting success* from the point of view of the parties benefiting from non-internalisation (Martinez-Alier & O'Connor, 1999).

Neoclassical environmental economics and ecological economics offer completely different solutions to the ecological distribution problem (Kallis, Demaria, & D'Alisa, 2015). While ecological economists hold that growth itself is the underlying cause of the problem, neoclassical environmental economists argue that the solution lies in even more growth, as mentioned earlier in both IPAT and EKC models (Marina Fischer-Kowalski & Amann, 2001; Jackson, 2011; Kallis et al., 2015). They maintain that economic growth will promote technologies, which are more efficient and allow decoupling and dematerialisation, and hence will put less pressure on the nature

However today, contrary to the beliefs that the economy will 'dematerialize' and economic growth will 'decouple' from natural resources and environmental impacts, resource extraction (e.g. oil, copper, gold, uranium and biomass) frontiers continue to expand (Marina Fischer-Kowalski & Swilling, 2011; Martinez-Alier, 2001). Social and ecological conflicts and environmental justice movements against such projects as dams, thermal and nuclear energy plants, mines, industrial fishing, and waste disposal are becoming more common throughout the world (Martinez-Alier, 2002, 2012). According to Fischer-Kowalski and Amann (2001), both IPAT and EKC models fail to address the complex interrelations and interdependencies among different socio-economic and ecological systems, as they create a "too optimistic" image of decoupling and dematerialisation in developed and industrial countries.

Clearly, while a particular project may increase total social welfare, the economic and ecological distribution of this additional welfare may be unequal. There may be winners and losers over the course of project implementation. According to neoclassical economists, the root cause of the externalities is the lack of proper markets for the environmental goods, since the ownership of such goods are poorly defined (Coase, 1960). According to Coase (1960), such externalities can be internalised through defining property rights over the natural resources and hence allow the market to put a right price on the negative environmental impacts through a process called *Coasian Bargaining*. For instance, in the case of lake pollution created by a production process, if the property rights of the lake belong to the polluter, then the victim of the pollution can pay the polluter and the amount of pollution will decline to socially efficient levels. Similarly, if the victim owns the property rights of the lake, the polluter can buy permits to pollute, from the victim. In both cases, an out-of-market good with no price will have a price, regardless of who owns the property rights of the lake.

This approach can be put in practice when deciding on policy alternatives or about the implementation of particular projects that will create growth, as well as environmental impacts. In such cases, one may make use of a *Cost-Benefit Analysis* (CBA), which is a simple and straightforward rule: implement the project if total benefits are greater than total costs, and then compensate for the environmental impacts. Accordingly, a policy change/project is "Pareto efficient" if gains are greater than losses, where winners are able to compensate the losers for their losses caused by project implementation: a principle that opens possible avenues for claiming liabilities. CBA helps to identify if there is room for a potential Pareto improvement criterion, the *Kaldor-Hicks compensation principle* (J. O'Neill, 1993). This is a test which checks whether "the gainers compensate the losers and still be better off" (Vatn, 2005, p. 109). In practice, this criterion implies a comparison between the sum of individual benefits across all who gain, and the sum of individual losses across all who lose (Hanley, 2000).

The critical assumption in this approach is that all benefits and costs can be expressed in terms of one measurement scale—money—and hence are comparable and compensable. Here, differing impacts are assigned monetary values, and multiplicity and incommensurability are generally omitted (Aldred, 2006; Munda, 2004; J. O'Neill, 1993). The reductionism inherent in the nature of monetisation is an important disadvantage, particularly when it concerns an environmental conflict. In general, it reduces complex and multifaceted problems to only their economic dimension, which often disregards or misrepresents environmental and social issues (Munda, 2004).

As (Getzner, Spash, & Stagl, 2005) suggest, these issues may be grouped under two headings, as summarised in **Table 1.1**: i) those concerned with the theoretical foundations of the valuation and evaluation, and ii) those concerned with the validity of the produced numbers and the employed tools.

Table 1.1 CBA-related Issues (Adapted from Getzner et al., (2005); Niemeyer & Spash, (2001)

Issues on theoretical foundations	**Issues on the validity of calculations**	
- Rationality assumptions	*Practical obstacles*	*Political Obstacles*

- Incommensurability - Incomparability	- Framing - Institutional setting - Societal aggregation - Uncertainty - Ignorance	- Manipulation - Representation - Participation - Corruption

Beyond distribution: Dimension of environmental justice

The concept of environmental justice (EJ) dates back to late 70s and early 80s, when the first visible mobilisations emerged in the United States against environmental contamination and its detrimental impacts on human health (Bullard, 1993). The plants that facilitated the burial of toxic chemicals in the country sparked off the first widely known protests in Warren County, North Carolina, where the residents were quite poor and the majority of the population was African-Americans. There were concerns about the unequal distribution of social and environmental costs of toxic pollution and it drew attention to a pressing need for investigating to what extent race, poverty and exposure to pollution were interlinked (Bullard, 1993) and there was a strong argument about *environmental racism*. That is, the distribution of environmental "bads" (toxic wastes and emissions) and "goods" (parks, green spaces) was dependent on income level and race. The existence of this relationship was later statistically proven and established (Bryant & Mohai, 1992).

In short, the early reflections on EJ originally focused on the unequal distribution of environmental problems. This is actually in line with a Rawls's notion of justice as fair distribution, which focuses on the distribution of goods (and bads) in a society and principles of distributing these goods (and bads) (Rawls, 2009; Schlosberg, 2007). Mohai, Pellow, and Roberts, (2009) outline three groups of arguments about the causal factors explaining the underlying sources of the first EJ movements:

i- From an *economic* perspective, there was no intentional discrimination against the racial minorities and poor people. The industries simply tried to maximize their profits and thus chose to construct their facilities on cheaper land, close to cheap labour.

ii- From a *socio-political* perspective, the government and industries were seeking "the path of least resistance" when deciding on the sites of hazardous waste, which means that there was a tendency of avoiding the rich and affluent communities which were more likely to be outspoken about their concerns, to generate controversy, and to create an effective opposition, ultimately delaying the project. Lacking the resources for effective resistance, the poor communities and minorities became the target.

iii- Finally, from a *racial* perspective*,* there was a cultural, juridical, and psychological phenomenon, a specific form of racism, which was linked the image of people of African and Latino descent to "barbarism, filth, dirt, and pollution".

A quick look at these three arguments also make it evident that the definition of environmental justice should extend beyond the (economic and ecological) distribution problem. While the arguments from the economic perspective discussed earlier in this section are significant (see the statement of "poor sells cheap" by Martinez-

Alier and O'Connor [1999, p. 380]), the concerns put forward by socio-political and racial perspectives, that is, the concerns over power, culture, right and functioning of democracy should also be addressed – stressing once again the need for a more comprehensive definition of Environmental Justice, taking into account issues other than distribution (Schlosberg, 2007).

First, since the problem of maldistribution cannot be resolved without addressing the causes that generate it, the investigation of the distributional justice would be incomplete without examining the underlying causes of unequal distribution (Schlosberg, 2007). According to Young (1990), Fraser (1997), and Honneth (1995, 2001) social *recognition* is the key to attaining justice, especially in environmental conflicts. Lack of recognition (of identities or rights) emerging as various forms of insults, degradation and discrimination at both individual and socio-cultural levels harm the oppressed individuals and communities (Schlosberg, 2007). In the case of *Environmental Racism* in the US, lack of recognition of the identities of the individuals and communities of colour inflicted damage on these communities and lead to distributional injustice.

The second important dimension of environmental justice is *procedural justice,* defined as "fair and equitable institutional processes of a state" (Schlosberg, 2007, p. 25). It is mainly concerned with the ability of individuals and communities to participate in and affect the decision-making processes. For instance, "the path of least resistance" argument described by Mohai et al. (2009) is directly linked to the ability of individuals and communities to affect a policy decision. It is important to note that, participation and recognition are closely related: "If you are not recognized, you do not participate; if you do not participate, you are not recognized" (Schlosberg, 2007, p. 26).

There is also the *capabilities* approach put forward by Sen (1985, 1999) and Nussbaum (2000, 2006), which also expands the concept of environmental justice beyond the distribution and investigates how distribution affects the societies' well-being and how people *function* and *flourish.* According to this approach, concepts such as leading a healthy life, bodily integrity, imagination and arts, freedom of expression and emotions, affiliation and being able to laugh and play (Nussbaum, 2000) become the indispensable pillars of justice.

All in all, inspired from the capability approach discussed above and also in an attempt to address the *needs* framework put forward by (Max Neef, 1992), Douguet, Raharinirina, O'Connor, & Roman, (2016) define six dimensions for EJ: r**ecognition**, **participation**, **economic distribution**, **ecological distribution**, **subsistence**, and **creation**. Accordingly, while economic and ecological distribution, recognition, and participation are the observable dimensions of EJ, they mean little without first satisfying the subsistence dimension. However, for the attainment of EJ, the creation dimension should also be satisfied, which is only possible if the other five aspects are satisfactorily complete. Douguet et al. (2016) have made a visual representation of their framework, in the form of an *octahedron* (**Figure 1.1**).

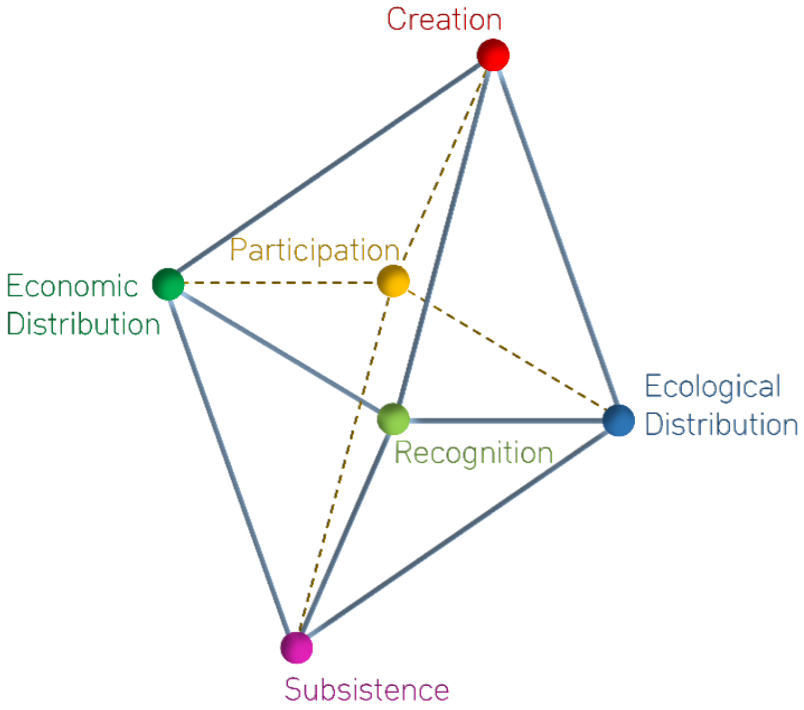


Figure 1-1 The octahedron of inequalities (Douguet et al., 2016)

The shape of octahedron aptly illustrates that EJ is a multi-dimensional and multi-faceted concept. Douguet et al. (2016) define each dimension, as follows:

- *Economic distribution*: The distribution of economic benefits, opportunities, risks and costs across individuals or communities in a society, or across generations over time (O'Connor, 2002)
- *Ecological distribution*: The distribution of hazards or pollution due to increased social metabolism (Martinez-Alier, 2009)
- *Participation*: The means to be part of a policy-making process and to be one the decision-makers (Arnstein, 1969)
- *Recognition*: The ability to consider and recognise the rights of other human beings and non-human beings (Honneth, 2001)
- *Subsistence*: Means to support oneself at a minimum level, but also protection, the ability to pay attention to others, adaptation and autonomy (Max Neef, 1992)
- *Creation*: The ability of an individual to express himself or herself freely, without constraints (Nussbaum, 2011)

Although the concept environmental justice has become an increasingly central concern in the academic sphere lately, as a living and dynamic concept, its roots originally go back to resistance movements and activists' knowledge. EJ can be best understood by referring to the incidents in the real world, since, being a living and dynamic concept, it draws as much upon theory as practice. To this end, it is useful to go into the practical applications, by studying the ecological conflicts worldwide, which is made possible by *Environmental Justice Atlas* (EJAtlas), a dynamic inventory for EJ movements worldwide (Leah Temper, del Bene, & Martinez-Alier,

2015; Martinez-Alier, Temper, del Bene, & Scheidel, 2016). The next section will present the *status-quo* of recent EJ struggles by making use of the EJAtlas.

b) A mapping exercise through EJAtlas and practical applications

As mentioned in the previous section, what we understand from the term "environmental conflicts" is now beyond the concept of unequal distribution of environmental risks and benefits, as it now encompasses a broad political and academic spectrum (Martinez-Alier et al., 2014). It is a multidimensional and multifaceted notion where the aspects of distribution, recognition, and participation are all interlinked and incorporated (Schlosberg, 2007, 2013), hence calling for an interdisciplinary or rather a transdisciplinary research methodology (Leah Temper et al., 2015)

The broadening of the concept is not only political or academic, but also spatial. A concept originating from a movement in United States has now expanded both *horizontally*, in the sense that it was followed by movements with similar EJ claims in different countries and locations in the world; and *vertically,* as there is now a globalising EJ movement acting together beyond borders, on issues such as climate change, trade agreements, and waste transfers (Martinez-Alier, 2016; Schlosberg, 2013). All around the world, people have been uniting to defend their lands, rivers, forests (in short, their livelihoods) against the activities and projects such as mining, dams, tree plantations, landfills, and land grabbing (Martinez-Alier et al., 2016). Having similar concerns and claims, they reach beyond their close neighbourhoods by connecting with each other and forming global networks by *jumping scale* (Urkidi & Walter, 2011). As Agyeman (2014, p. 238) puts forward "[t]he global brand of environmental justice is growing by the day" and it is now "serving as a meeting point, a dialogue and forum for action-research among a growing network of activists, scholars, and non-governmental organizations" (Temper & Del Bene, 2016, p. 41).

As Sarah Moore (2011) points out, as much as countries, people, and companies are connected by the global circulation of goods and services and flows of capital, they are also closely connected through flows of waste and processes of uneven development, marginalisation, and injustices. Hence, a mine, a dam, or any other project igniting an environmental conflict is not an isolated site "in an unfortunate state of momentary geographic association", but rather such projects "represent a set of connected sites through which value flows, which are mutually constituted by their relationships along far more vast chains of accumulation" (Robbins, 2014, p. 233). Therefore, creating a global map of such *micro-political ecologies of injustices* will result in "relinking of relationships broken by the powerful accumulative mediators of risk and vulnerability" by "carefully connecting the worldwide dots linking these apparently disparate cases" (Robbins, 2014, pp. 234, 235).

In an attempt to develop the abovementioned global map which will offer an "analysis that can transcend individual cases and identify patterns, relationships between cases and actors' perspectives on how such conflicts are shaped by the larger political economy" (Leah Temper et al., 2015, p. 261), the *Global Atlas of Environmental Justice* (EJAtlas) was launched in 2014. It is an online inventory of environmental conflicts all around the world, documenting environmental justice movements against particular economic activities on a map (**Figure 1.2**), aiming to make mobilisation more visible. It also highlights EJ claims and serves as a space

for activists to receive information and connect with other activists working on similar issues (Leah Temper et al., 2015). The map is the primary output of a large-scale research initiative called *EJOLT*[7] (Environmental Justice Organisations, Liabilities and Trade), aiming at improving the understanding of ecological distribution conflicts in the world, by conducting engaged research with the people struggling in those conflicts (Leah Temper et al., 2015; Martinez-Alier et al., 2016).

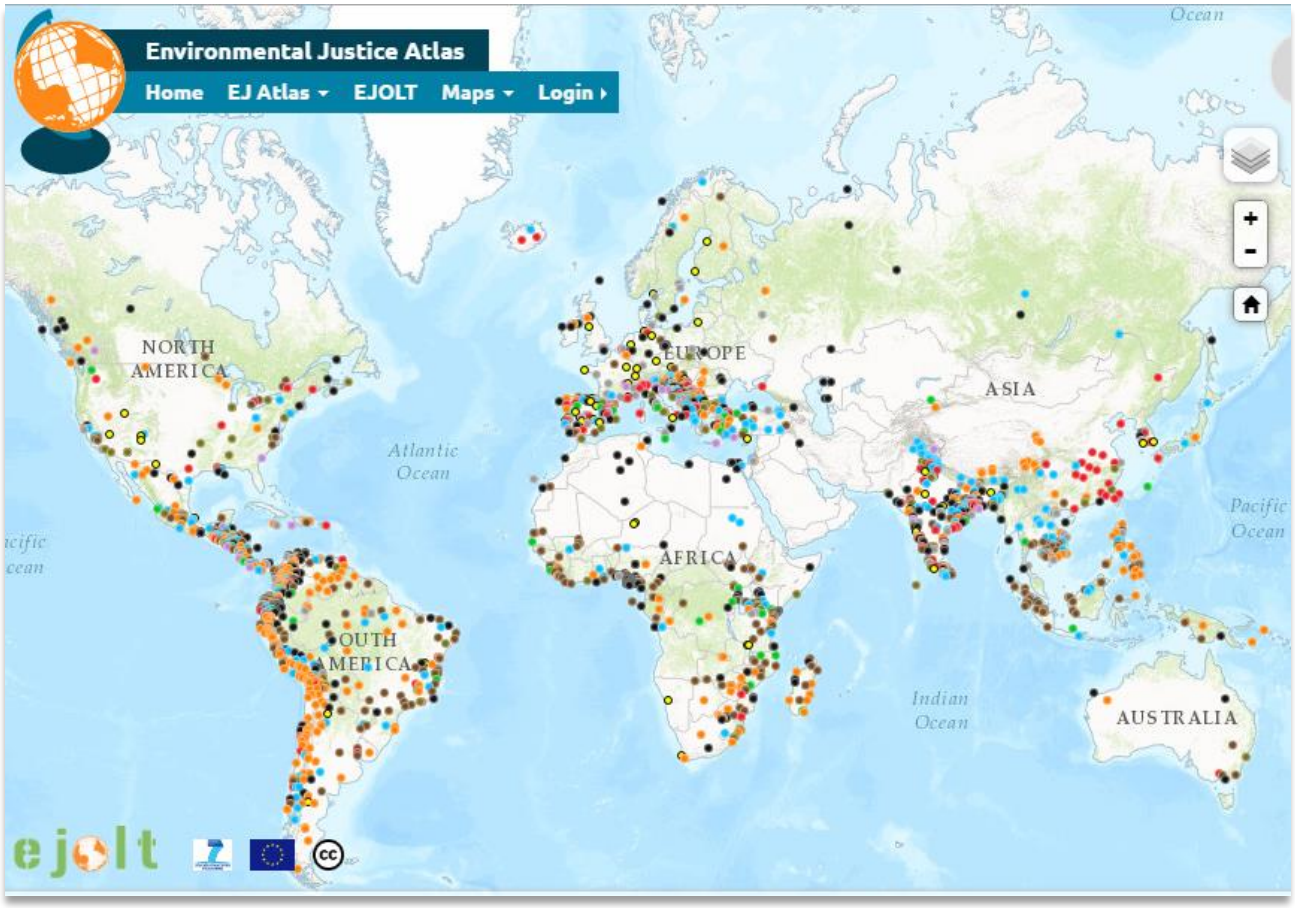


Figure 1-2: A screenshot of EJAtlas homepage. www.ejatlas.org , retrieved on 24.08.2016.

The EJAtlas maps the worldwide ecological distribution conflicts through a bottom-up methodology, using data and knowledge co-produced by activists and academics (Martinez-Alier, 2016; Temper & Del Bene, 2016). It utilises previous mapping and data collecting initiatives about ecological conflicts and environmental justice movements. For instance, *Fundaçao Oswaldo Cruz* (FIOCRUZ) and Brazilian network of Environmental Justice had already created a map of environmental and health conflicts in Brazil (Porto, Pacheco, & Leroy, 2013). Similarly, the Center of Documentation on Environmental Conflicts (CDCA) in Italy has been documenting symbolic ecological conflicts, both in Italy and in the world since 2007 and Latin American Observatory of Mining Conflicts (OCMAL) has collected and mapped data on mining conflicts in Latin America (Leah Temper et al., 2015).

[7] The EJOLT project (*Environmental Justice Organizations, Liabilities and Trade*, www.ejolt.org) is an EU FP7 Science in Society project that ran from 2011 to 2015, bringing together a consortium of 23 academic and civil society organizations across a range of fields to promote collaboration and mutual learning among stakeholders who research or use Sustainability Sciences, particularly on aspects of Ecological Distribution.

It is apparent that the activity of mapping is a critical tool for activists to present their collectively created knowledge and information in a systematic way. It helps them to inform the public and the media about the facts, and to force the policy makers to act in favour of EJ. The participatory nature of the mapping process is not only a methodological practice, but also a political necessity to create more legitimacy for the collected data, as the contributors are actual people and communities (Bryan, 2015). Furthermore, the participatory and bottom-up features of such maps make "visible many environmental injustices and instances of resistance that would remain hidden otherwise" (Martinez-Alier et al., 2016, p. 3).

The map is not complete yet and there is still need for further research and reporting on such regions as China, Central Asia, and Middle East. Despite this shortcoming, it still offers a valuable insight into the understanding of the dynamics of ecological distribution conflicts and EJ movements. Conflicts can be filtered according to category, commodity, EJ Success, project status, conflict intensity, companies, EJ Organisations, and around 100 other fields (Martinez-Alier et al., 2016) and hence provide valuable insights, especially for activists and academics. Below, some possible practical applications that can be conducted using the EJAtlas are presented.

Conflict categories and reported commodities

The database divides conflicts into 10 main categories (see **Table 1.2)**, around 50 sub-categories and classifies them by a 'commodity' approach (see **Table 1.3**)

Table 1.2: Conflict categories

	Category	**#**	**Sub categories**
	Infrastructure and Built Environment	123	Urban development conflicts; Ports and airport projects; Pollution related to transport (spills, dust, emissions); Transport infrastructure networks (roads, railways; hydroways; canals and pipelines)
	Waste Management	108	Ship-breaking yards; Incinerators; Landfills, toxic waste treatment, uncontrolled dump sites; Waste privatisation conflicts/waste-picker access to waste
	Biodiversity Conservation Conflicts	47	Invasive species; Bio-piracy and bio-prospection; Wetlands and coastal zone management
	Industrial and Utilities Conflicts	142	Military installations; Metal refineries; Chemical industries; Manufacturing activities; Other industries
	Fossil Fuels and Climate Justice/Energy	351	Coal extraction and processing; Oil and gas exploration and extraction; Oil and gas refining; REDD/CDM; Thermal power plants; Shale gas fracking; Climate change related conflicts (glaciers and small islands); Mega-project solar plants; geothermal energy installations; Windmills; Gas flaring
	Mineral Ores and Building Extractions	403	Building materials extraction (quarries, sand, gravel); Mineral ore exploration; Tailings from mines; Mineral Processing
	Nuclear	65	Nuclear waste storage; Nuclear power plants; Uranium Extraction
	Biomass and Land Conflicts	294	Land acquisition conflicts; Deforestation; Plantation conflicts; Aquaculture and fisheries; E-waste and other waste import zones; Agro-fuels and biomass energy plants; Agro-toxics; GMOs; Intensive food production (monoculture and livestock); Logging and non-timber extraction
	Tourism Recreation	41	Establishment of reserves/national parks; Tourism facilities (ski resorts, hotels, marinas)
	Water Management	268	Water access rights and entitlements; Dams and water distribution conflicts; Inter-basin water transfers/trans-boundary water conflicts; Desalination; Water treatment and access to sanitation (access to sewage)

Source: EJAtlas database *www.ejatlas.org* , accessed on 29 August 2016

Table 1.3: Commodities reported in EJAtlas, ranked by frequencies

Commodity	#	%	Commodity	#	%	Commodity	#	%
Land	525	28.5%	Cellulose	42	2.3%	Pine	18	1.0%
Water	360	19.5%	Fish	41	2.2%	Soybeans	17	0.9%
Electricity	335	18.2%	Sugar	40	2.2%	Shrimps	16	0.9%
Crude oil	211	11.4%	Sand, gravel	39	2.1%	E-waste	15	0.8%
Gold	184	10.0%	Lead	36	2.0%	Ecosystem Services	14	0.8%
Coal	146	7.9%	Eucalyptus	34	1.8%	Meat	12	0.7%
Copper	117	6.3%	Zinc	33	1.8%	Recycled Metals	12	0.7%
Industrial waste	101	5.5%	Cement	30	1.6%	Rubber	12	0.7%
Natural Gas	94	5.1%	Corn/Maize	28	1.5%	Wheat	12	0.7%
Silver	92	5.0%	Fruits and Vegetables	27	1.5%	Jatropha	11	0.6%
Domestic municipal waste	88	4.8%	Ethanol	23	1.2%	Diamonds	10	0.5%
Tourism services	85	4.6%	Steel	23	1.2%	Cotton	8	0.4%
Chemical products	71	3.9%	Manufactured Products	22	1.2%	Charcoal	7	0.4%
Timber	64	3.5%	Rare metals	22	1.2%	Titanium ores	7	0.4%
Palm oil	63	3.4%	Rice	22	1.2%	Asphalt	5	0.3%
Biological resources	60	3.3%	Aluminum/Bauxite	20	1.1%	Cut flowers	4	0.2%
Uranium	55	3.0%	Asbestos	18	1.0%	Lithium	4	0.2%
Carbon offsets	54	2.9%	Live Animals	18	1.0%	Coffee	1	0.1%
Iron ore	50	2.7%	Pesticides	18	1.0%			

Source: EJAtlas database *www.ejatlas.org* , accessed on 29 August 2016.
Multiple commodities can be reported in a conflict hence sum of percentages may be greater than 100%

The data presented in both **Table 1.2** and **Table 1.3** provides an overview of the metabolic profiles of the environmental conflicts around the world, covering categories ranging from the extraction of resources to waste production. The extraction of energy-related commodities such as crude oil, coal, and electricity are reported in many conflicts along with the mineral and ores such as gold, silver, and iron. Similarly, commodities related to the biomass extraction such as timber, palm oil, or fish, are reported widely as well.

Apart from providing statistical information about the commodities or categories, the data in the database is helpful in understanding the notion of EJ. The data collection form of EJAtlas asks respondents (who are mostly activists and representatives of resisting groups) the question *"Do you consider this an EJ success? Was EJ served?"* and collects the answers "Yes", "Not sure" and "No". **Figure 1.3** provides an overview of the distribution of EJ success for all conflicts and for specific categories. Results demonstrate that, in total, respondents report 49 percent of struggles to be unsuccessful as opposed to only 17 percent, which they consider to be a success.

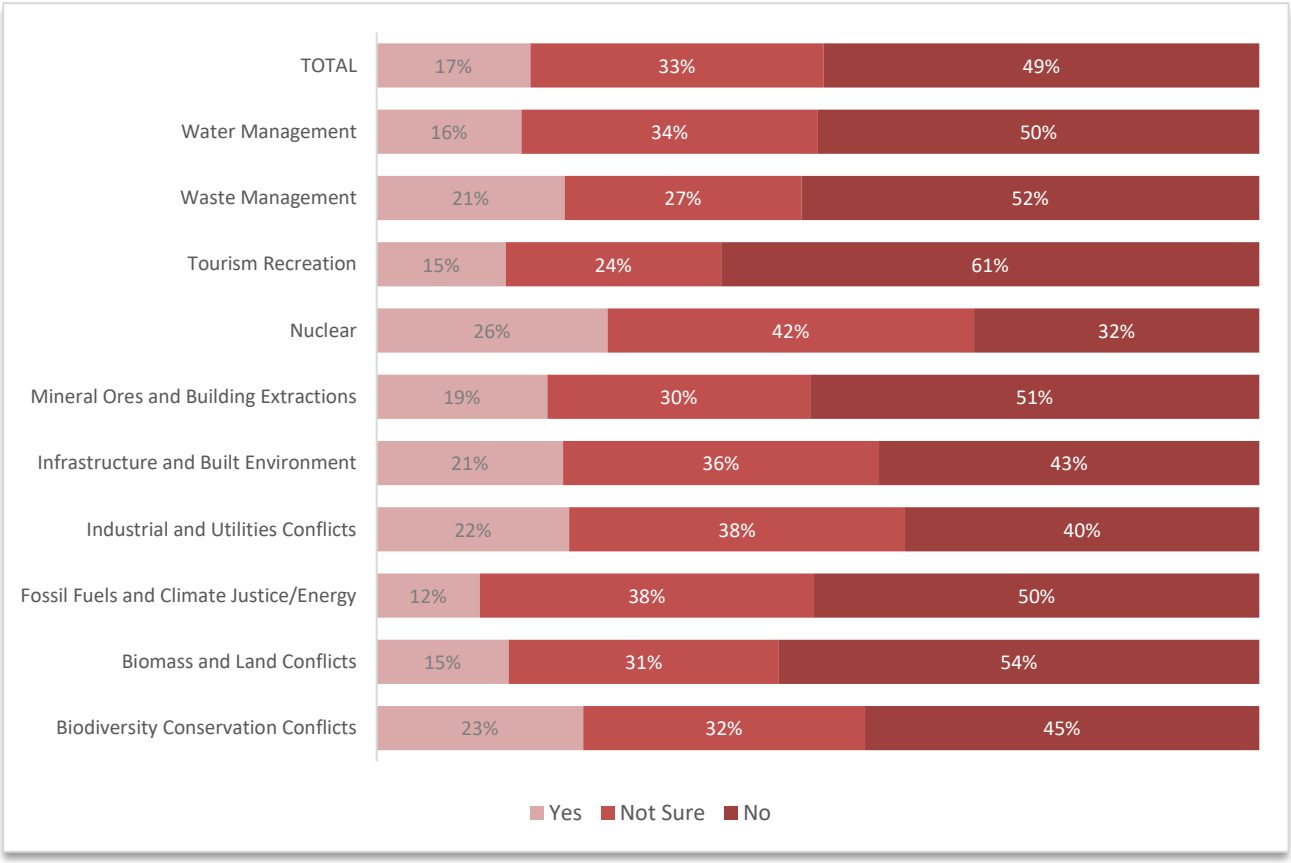


Figure 1-3 EJ succes in EJAtlas cases
Source: EJAtlas database www.ejatlas.org , accessed on 29 August 2016

The data compiled for the EJAtlas database can help to find answers to the questions of *what* affects the perception of EJ success, *when* a struggle is considered a success, and *why* the (permanent or interim) result of conflict is considered an EJ success or failure.

Companies

EJAtlas also contains valuable information on companies involved in specific conflicts. Most of these companies are multinationals involved in the fossil fuel sector, mining sector or energy sector. Due to the complex and non-transparent nature of the global commodity chains, it is usually difficult to pinpoint the exact position of a specific multinational company. However, thanks to the data reported in the EJAtlas, it is possible to reveal this complex network by conducting a social network analysis (Aydın, Özkaynak, Rodríguez-Labajos, & Yenilmez, 2017; Özkaynak, Rodríguez-Labajos, Aydın, Yanez, & Garibay, 2015).

To reveal and better comprehend the network structure of the coalitions and relations between global companies, Aydın, et al. (2017) conducted an analysis for the mining sector, using the data for 600 companies reported in 346 mining conflicts. Their analysis reveals that the network of mining corporations consists of many different-sized components (sub-networks) and that almost half of the conflicts are located in the so-called giant strongly connected component (GSCC)—the main sub-network where nodes are highly interconnected. In the GSCC, most of the companies central to the network (i.e. involved in many conflicts) were well-known international companies, with headquarters based in Brazil, the U.K., Australia, Canada,

Switzerland or South Africa. They were well-connected not only among themselves, but also to other national firms. Many multinationals in the network also had their own national subsidiaries. Another important point is that not all companies are specialised in mining; some are commodity traders, which underlines the important role international trade plays as a driving force in local conflicts (Özkaynak, Rodríguez-Labajos, et al., 2015).

The fact that these companies are collectively addressed in a network does not mean that they all follow the same policies in how they respond to anti-mining protests or are related to communities that oppose mining. However, demonstrating that a network of relationships exists among companies through their involvement in conflicts brings two aspects to the table. First, mining companies have a common, though differentiated, interest in responding to mining conflicts, which arguably creates difficulties for their business operations. Second, should a common framework to tackle conflicts be established, a network of corporate relationships would facilitate its development, dissemination and operation. The Global Mining Initiative, for instance, promoted by the International Council on Mining and Metals (ICMM), may be used as an example of a globally-shared discourse that uses 'sustainable mining' as a slogan and presents the industry as a generator of societal benefits, while legitimising access to resources and intervention in the social life of communities and regions (Garibay, 2015)

Environmental Justice Organisations (EJOs)

EJAtlas makes it possible to understand better the properties and constituents of the EJOs mobilising against environmental injustices. For instance, Aydın et al (2017) look at the organization type of groups that mobilize against mining projects and show that, of the 1,069 entities reported in these mining conflicts, environmental CSOs had the highest representation (42.4%), followed by non-environmental CSOs (27.8%) and community organizations (18.9%) (**Table 1.4**). Research organizations (4.1%), human rights organizations (2.0%), religious organizations (2.7%) and political parties (1.5%) also had some presence in the data set. They also show that that 189 of the total number of reported entities (17.3%) were already networks themselves (e.g., platforms, alliances, campaigns, coalitions, and movements). This suggests that anti-mining activists are well aware of the value of cooperation and collaboration.

Table 1.4 Types of organisations mobilised in mining conflicts (Aydın et al., 2017)

Organization type	**Frequency**	**Percentage**
Environmental NGOs	453	42.4
Non-environmental NGOs	297	27.8
Communities/Residents	202	18.9
Research organizations	44	4.1
Religious organizations/Charities	29	2.7
Human rights organizations	21	2.0
Political parties	16	1.5
Governmental organizations	7	0.7
Total # of organizations	1,069	

As shown in practical applications above, with the collectively gathered data in the EJAtlas, the horizontal linkages between the conflicts, companies and movements become more apparent. Yet, at this point, a further analysis is required in order to get a basic understanding of the vertical interplays in the EJ movements. The next section will provide a brief presentation of the cross-scale linkages within the environmental conflicts, by referring to specific examples picked out of the EJAtlas.

c) Cross scale linkages within environmental conflicts – empirical observations

> "When herders conflicted with farmers in Côte d'Ivoire in the 1980s, for example, pioneering political ecologist Tom Bassett (1988) examined the vertical pressures on the system to conclude that these violent local outcomes were actually a result of pressures to increase livestock production at the national scale, for state sponsored export to international markets" (Robbins, 2012, p. 88)

As the quote above illustrates, a decision made at national scale for the national interest may have unforeseen implications at other scales, since there exists multilevel connections between global, national, and local scales, in decision-making, hierarchies of power, and last but not least, environmental functions (Adger, Benjaminsen, Brown, & Svarstad, 2001). Global changes in the climate, environment, economy, demography, and cultures have significant impacts on the national and local scales, and in turn, changes in the local scale add up and contribute significantly to global change (Wilbanks & Kates, 1999). For instance, on the environmental functions front, there are critical interactions between cellular and planetary scales. The complex processes at cellular scale decompose an organic matter and release carbon dioxide or methane, which rapidly merge into the complex mix of gases that regulates the Earth's climate at global scale, where a disruption at the cellular scale may adversely affect the processes at global scale (Cash et al., 2006).

On the policy-making front, one particular example of a policy decision deemed effective at global (and/or national) scales for its potential of decarbonisation and for providing a solution to the problem of climate change, is the construction of renewable energy plants such as wind farms or large solar power projects. Effective as they might be on other scales, such policies are not always welcome at the local scale and in many rural places in the world, and protests against such projects are not uncommon. For instance, as depicted in **Figure 1.4**, there are 33 local conflict cases reported on EJAtlas as of August 2017 – 28 about wind projects and 5 about megaproject solar power plants – where local communities mobilize against adverse ecological and socio-environmental impacts such as loss of landscape, biodiversity loss, land dispossession, loss of livelihood, deforestation, and noise pollution.

Figure 1-4 The conflicts over wind farms and solar energy megaprojects on EJAtlas as of August 2017

While conflicts may arise when global or national scale decisions do not take into account the local ecological and socio-economic dynamics, bottom-up governance mechanisms may fail to provide effective solutions too, since lower level solutions may not adequately carry out the functions of higher level institutions. This problem is most clearly seen in the international climate regime, where sovereign states prioritising their own national interests fail to achieve an effective solution about the climate change at global scale – an example of collective action problem (Bulkeley, 2005). As a result, many developing countries continue to pursue their own interests for the sake of national economic growth and development, at the expense of changing the global climate.

Many countries in the world continue to explore and extract coal and oil reserves despite the scientific facts that these energy sources are the major causes of the global climate change (IPCC, 2014). As documented by EJAtlas and displayed on **Figure 1.5**, as of August 2017 there are 373 cases, reported as conflicts over coal extraction and processing and thermal power plants (157 cases), and oil and gas exploration and extraction (219 cases). While these projects have adverse environmental, socio-economic and health impacts on *local* communities, the emissions generated from these projects, when aggregated, affect the global climate severely. Yet, national governments still opt for implementing such projects since they are considered to serve economic interests at national scale.

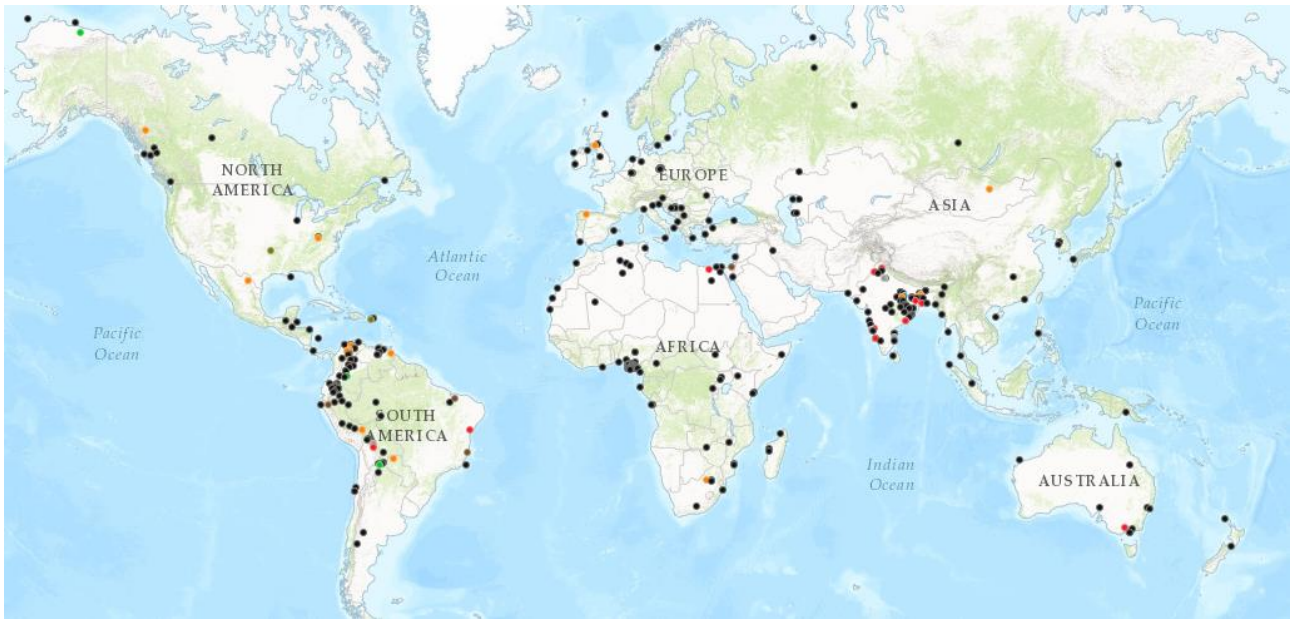


Figure 1-5 The conflicts over coal extraction and processing and thermal power plants, and oil and gas exploration on EJAtlas as of August 2017

The interaction between different scales is not limited to ecological dynamics or governmental relations. In fact, (Özkaynak, Rodríguez-Labajos, et al., 2015) show that there is a global mining resistance network, formed of different environmental justice organisations operating at different scales. This mining resistance network can be seen as an approximation of the global environmental justice movement against mining and it shows that almost half of the organisations reported are local organisations (49%), followed by national (44.8%) and international (6.2%) civil society organisations, as presented in **Table 1.5**. These figures indicate once more that in mining conflicts, alliances are not uncommon between local resistance movements, and between national and international extra-local actors.

Table 1.5 Mobilising organisation according to their operating scales (Özkaynak, Rodríguez-Labajos, et al., 2015)

Scale	Frequency	Percentage
Local	535	50
National	466	43.6
International	68	6.4
Total # of organisations	**1,069**	

The network presented by (Özkaynak, Rodríguez-Labajos, et al., 2015) shows well how different actors operating at or across different scales come together. As Keck and Sikkink (1999, p.1) put forward, it is an example of a transnational advocacy network (TAN), that brings together a broad range of actors, works

internationally on an issue, and "[is] bound together by shared values, a common discourse, and dense exchanges of information and services". Such networks may serve as a horizontal governance structure as a response to top-down or bottom-up governance mechanisms and help "persuade, pressurize, and gain leverage over much more powerful organisations and governments" (Keck & Sikkink, 1999, p. 1). Furthermore, such networks can be seen as a natural response from the actors and stakeholders to the governance challenges that affect multiple scales simultaneously (Bulkeley, 2005).

As shown above, there are different types of interactions within or across scales between different actors and stakeholders, which lead to complexity in dynamics, creating governance challenges where national policies limit local policies, or where local actions aggregate into large-scale problems (Cash et al., 2006). Such governance challenges occur mostly when the scope of a decision-making problem is defined as purely global, national, or local, in order to simplify a complex problem and increase the control over it (Cash et al., 2006; Wilbanks & Kates, 1999), or when the scale of institutional responses do not match completely the scale of the environmental problems (Adger et al., 2003). For example, governments structure policy-making problems usually at national scale so that these problems become manageable within their jurisdictions (Cash et al., 2006; Lebel, Garden, & Imamura, 2005). The result of that approach is to consider that the scales of decision-making are independent from each other (Adger et al., 2003) and that there is a top-down hierarchy between the decision scales going from global to national and then to local (Bulkeley, 2005).

The governance approaches that view the decision-making scales independent from each other fall short of providing effective solutions to global environmental problems with multiple interaction between scales, and also between nature and people who hold different value systems (e.g. climate change). On top of the ecological and social complexity, the governance mechanisms that do not properly take into account the complex interactions between the actors that operate at different scales create yet another source of controversy and further aggravate the ecological distribution conflicts in the world. In many instances, a policy or a specific technology seeming to provide effective solutions at one particular scale may actually create more conflicts in another scale.

Taking into account a scale perspective while constructing a governance mechanism proves useful since first, a great majority of environmental problems have diverse causes and impacts at different (and possibly multiple) scales, and second, institutional responses can be made at different (and often multiple) scales (Adger et al., 2003). For instance, while some environmental problems, such as local water pollution and municipal waste management, have mainly local causes and hence can be dealt with at local scale, other problems such as climate change or ozone depletion are due to both global and local dynamics and have different adverse impacts on global and local scales (Adger et al., 2003).

The following **Chapter 2** will elaborate on the cross-scale linkages in more detail by discussing the importance and relevance of the scale for an effective environmental governance, presenting the governance challenges occurring due to cross-scale interactions. It will then try to position deliberative multi-criteria methods as a cross-scale environmental governance support tool.

Chapter 2: Operating through scale: Positioning multi-criteria as a cross-scale governance tool

Policy decisions having impacts ranging from local to global are with important challenges due to the complexity of the human-nature interactions. While global changes in environment, economies, or culture have impacts at the local scale, seemingly smaller individual acts may be aggregated into bigger impacts at global scale. The complex cross-scale interactions between actors and stakeholders operating at different scales create another source of conflict, a challenge that is yet to be addressed. Hence, the governance of environmental problems that span over multiple scales turns into a challenge and calls for a set of particular mechanisms capable of both addressing the cross-scale interactions and conflicts stemming from them. In an attempt to devise such a governance mechanism, this chapter will try to position deliberative multi-criteria methods as a cross-scale governance tool. Accordingly, the chapter will first provide shortly the theoretical background of cross-scale interactions and then it will present different multi-stakeholder multi-criteria evaluation frameworks proven useful as tools for conflict management.

a) Cross-scale interactions and environmental governance: Theoretical underpinnings

There are several human activities that induce environmental change at different scales and sometimes, at multiple scales. While the individuals act on a small, local scale, the consequences of their actions may be felt at global scale (McLennan & Moore, 2012). A classic example is burning fossil fuels at the household scale, which contributes to the greenhouse effect at the global scale. Similarly, some other human activities such as producing energy from nuclear power may have large spatial and temporal scopes. For instance, the radioactive waste generated by the nuclear power plants at the local scale may afflict the natural habitat for centuries, and possibly for millennia. Or, the radioactive fallout occurring after a nuclear accident may affect vast areas at regional or even at global scale.

The underlying causes of such (local or global) environmental change can be found at different scales. Global changes in climate, environment, economies, institutions, and cultures have significant impacts at the local scale; and vice versa, seemingly smaller changes at local scale are aggregated into bigger factors that influence the global change (Wilbanks & Kates, 1999). For instance, although many of the visible driving forces of global change (such as greenhouse gas composition in the earth's atmosphere, or the global financial system) operate at global scale, the underlying phenomena that determine these global driving forces (such as micro-environmental processes, economic activities, or population dynamics) occur at local scale (Wilbanks & Kates, 1999). In such cases, researchers need to work harder to reveal the cause-effect relationships, since the scales of the actions and their consequences may be so distant that identifying the right connections may require specific attention (McLennan & Moore, 2012).

In order to better understand the complexity of human interaction with the environment, it is necessary to link the local and the global scales across a broad range of different disciplines (Wilbanks & Kates, 1999). Hence, the human dimension of the global change calls for a growing need for interdisciplinary research, first, in order to improve the common understanding of scaling issues (Gibson, Ostrom, & Ahn, 2000), and then, in

order to devise new forms of environmental governance to overcome the challenges which affect multiple scales (Bulkeley, 2005). However, doing so poses many challenges, since, as Wilbanks and Kates (1999, p. 601) argue, "improving the understanding of linkages between macro-scale and micro-scale phenomena and processes is one of the great overarching intellectual challenges of our age in a wide range of sciences". Even the concept of "scale" alone may be a challenge to study since "different disciplines have developed different concepts of scale that they use in a variety of ways" (McLennan & Moore, 2012, p. 370). For instance, Gibson et al. (2000) argue that while natural scientists have a more unambiguous understanding of the term "scale" that operates within relatively well-defined hierarchical systems, social scientists' understanding of scale is less clear cut and has come to be used as an umbrella term which hosts a great variety of meanings. In short, definitions abound in terms of what scale actually is. However, it is only after we can properly define and fully understand what scale is and why it matters that we can establish a governance mechanism that addresses cross-scale interactions between the society and environment.

What is scale?

Many disciplines in natural sciences as well as in social sciences become (critically or not) involved in theorising the concept of scale and nearly each has a different understanding, and hence a different definition of it (McLennan & Moore, 2012). However, being malleable and nebulous in nature, the term "scale" does not readily lend itself to a widely accepted, single definition (Norman, Cook, & Cohen, 2015a). The lack of clarity in the definition of "scale" largely results from the fact that many of the key concepts related to its study take on different meanings when used in different disciplines (Gibson et al., 2000). For instance, although terms such as "level" and "scale" are mostly used interchangeably in social sciences, they may be used to refer to different concepts in natural sciences. In an attempt to clarify the meaning of different concepts and key terms, Gibson et al. (2000, p.218) define scale as "the spatial, temporal, quantitative, or analytical dimensions used to measure and study any phenomenon", while level means "the units of analysis that are located at the same position on a scale". Following this definition, Cash et al., (2006) sketch out how levels can be represented in different scales, where they also provide examples of spatial, temporal, jurisdictional, or institutional scales (**Figure 2.1**).

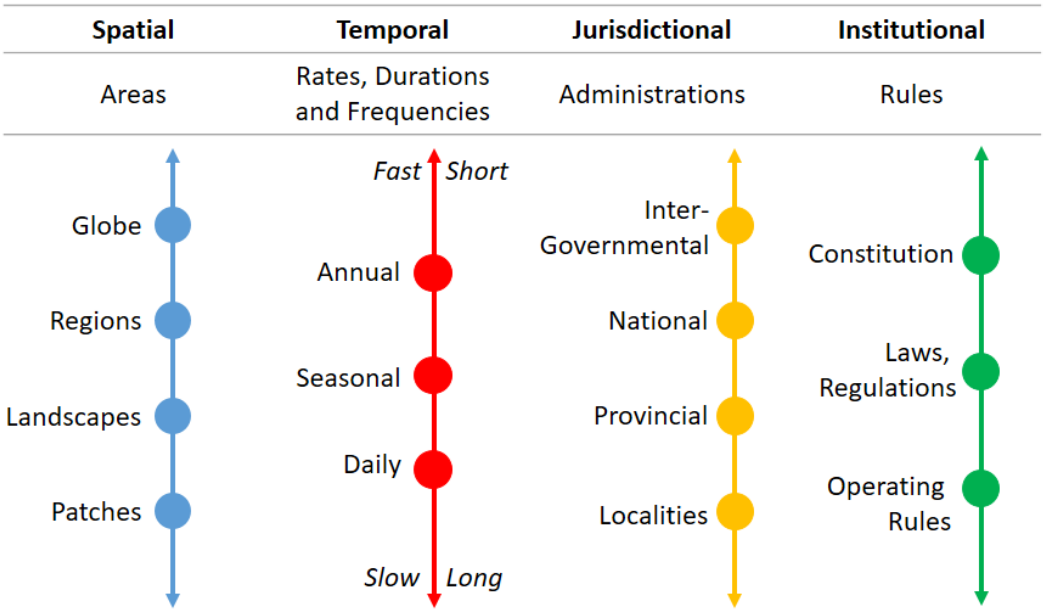


Figure 2-1 Schematic illustrations of different scales and levels according to (Cash et al., 2006),

As illustrated in **Figure 2.1,** Cash et al. (2006) divide all scales into different levels. For instance, in the spatial scale (which they also call *the geographical scale*) levels may be defined as *globe, region, landscape, and patches*. Closely related to the spatial scale, jurisdictional scale consists of levels indicating political units, such as towns, provinces, countries, and intergovernmental bodies (such as international or supra-national organisations). Finally, levels in the temporal scale can be defined as time frames indicating the rates, durations, or frequencies and levels in the institutional scale may be formed in a hierarchical manner, such as constitutions, law, and operating rules. Cash et al (2006 p.2) argue that spatial scale and jurisdictional scale are closely related, as they are both "clearly bounded and organized political units (e.g. towns, countries, states or provinces, and nations) with linkages between them created by constitutional and statutory means". In this context, they also argue that much of the theorising of the concept of scale has taken place within the disciplines of geography and ecology. The geographical (spatial) scale is arguably the best-studied scale in here (Cash et al., 2006), since it plays a key role in understanding ecological systems and processes (McLennan & Moore, 2012).

On the other hand, Cumming, Cumming, & Redman (2006) make a distinction between ecological and sociological scales. For instance, in ecology, the term mostly refers to the spatial and temporal dimensions, and hence according to Cumming, Cumming, & Redman (2006) ecological scale (which they also call "geographical scale") has two main attributes: extent (total area or time period to be observed) and grain (the resolution of observations) (Cumming et al., 2006). For instance, in temporal dimension, the extent may be a century and the grain, i.e. the resolution of observations, can be years (Gibson et al., 2000). Different from the ecological scale, Cumming et al. (2006, p.2) define sociological scale as the "representative nature of social structures from individuals to organisations as well as social institutions i.e., rules, laws, policies, and formal and informal cultural norms, that govern the spatial and temporal extent of resource access rights and management responsibilities". Accordingly, sociological scale too, includes space and time. However, different from the ecological scale, it also incorporates notions of representation and organisation, and thus has a

political dimension.

On a similar vein, Smith (1992) argues that scale is socially produced together with space, and hence is a socially constructed, historically contingent and politically contested concept. Regarding this contention about the debates revolving around the politics of scale, Norman et al. (2015) put forward three main points. The first one is about the ontological status of the scales (i.e. do they exist in any real way?), the second addresses the extent to which a particular scale is chosen as an analytical unit for a study, and the last one focuses on how specific scales are used in understanding particular notions of authority, effectiveness, and efficiency.

From a different perspective, Hein, van Koppen, de Groot, & van Ierland (2006) establish a link between the ecological scales and jurisdictional scales (which they call institutional scales) (**Figure 2.2**) claiming that ecological and institutional borders often overlap. They argue that scales of ecosystems are often correlated with stakeholders and "the supply of ecosystem services affects stakeholders at all institutional levels" (Hein et al., 2006, p. 215). It should be noted that Hein et al. (2006) describe two domains (ecological and institutional) and define scales within these two domains, whereas for the same notions, Cash et al. (2006) define different scales (instead of domains) and divide them into different levels.

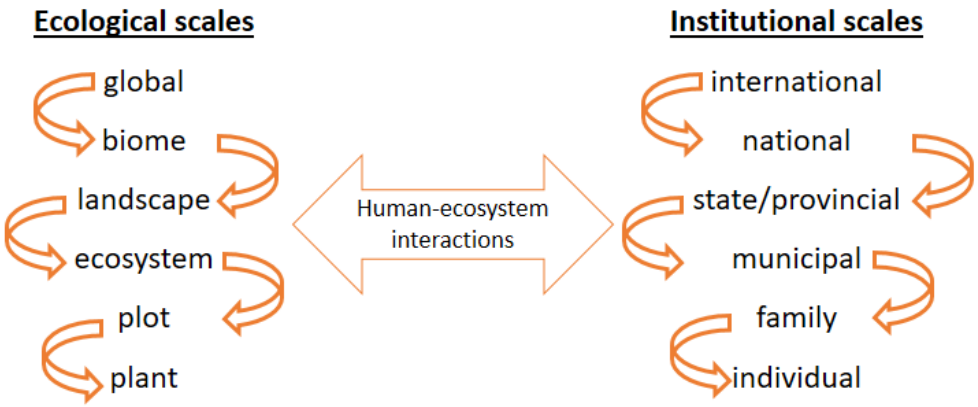


Figure 2-2 The relation between ecological and institutional scales according to (Hein et al., 2006)

Hein et al. (2006) discuss the correlation between the ecological scales and stakeholders in institutional scales over their relation through the ecosystem services. They claim that both households (i.e. family level in the institutional scale) and internationally operating firms (i.e. international scale) may depend on the ecosystem services at different scales in the ecological domain for generating income. For instance, while a family in a fishing community may depend on the ecosystem services at an ecosystem or landscape scale, an international tourism company may depend on the climate regulation services at the global scale. Similarly, government agencies at different institutional scales may be involved in managing the access to ecosystem services at different scales in ecological domain.

In sum, the interactions between different scales affect the way the world functions, both in socio-political and natural spheres. Hence, the concept of scale encapsulates not only global environmental change, but also the political and social processes that lead to it. Therefore, as Wilbanks and Kates (1999) argue, the scale *does* matter in assessing global change. How and why it matters is discussed below.

Why and how does scale matter?

Whether geographic or institutional, scale matters for a better understanding of the interactions between societies and environment. These interactions take place in complex ways, which interconnect, traverse, or overlap multiple spatial (or temporal) scales (McLennan & Moore, 2012). Accordingly, the choice of a specific scale for studying or assessing a certain phenomenon matters since only certain parts of these complex interactions can be observed through different scales. As McLennan and Moore (2012, p.370) put forward, one can "look at the same issue at different scales and see something quite different at each scale". Hence, in order to gain a holistic understanding of a problem, an inquiry spanning over multiple scales should be conducted. On that vein, Reid, Berkes, Wilbanks, and Capistrano (2006, p.8) argue that the "choice of scale for an assessment is not politically neutral, because that selection may intentionally or unintentionally privilege certain groups". Similarly, "adopting a particular scale of assessment limits the types of problems that can be addressed, the modes of explanation, and the generalizations that are likely to be used in analysis" (Reid et al., 2006, p. 8). There is a substantial body of scientific literature which underlines the importance of studying (spatial and temporal) scale in understanding the role of human-environment interactions in global change (e.g. Adger, Brown, & Tompkins, 2006; Berkes, 2002; Giampietro, 2003; Giampietro & Ramos-martin, 2005; Gunderson & Holling, 2002; Norman, Cook, & Cohen, 2015b; Wilbanks, 2003; Wilbanks & Kates, 1999; Zermoglio et al., 2005).

As suggested above, studying scale matters in developing an integrated understanding of global environmental change, and understanding the cross-scale linkages forms a significant part of the quest for knowledge (Wilbanks, 2006; Wilbanks & Kates, 1999). Wilbanks and Kates (1999) provide six arguments about "how and where scale matters"; three about the "nature of reality" (i.e. how the world works) and three about the "practice of science" (i.e. how we perceive and learn about the world), as summarised in **Table 2.1**.

Table 2.1 How and where scale matters

Scale matters due to the nature of Reality	**Scale matters due to the practice of science**
How the world works	*How we perceive and learn about our world*
The Domain Argument: The forces that drive global change arise from different domains of nature and society. There are two main categories: i) Global systemic changes: direct changes in the functioning of a global system ii) Cumulative global changes: accumulation of localized changes	**The Tractability Argument** The relationships underlying global change are too complex to trace at any scale beyond the local, too difficult to keep grounded in direct observations, too likely to become disembodied from actual experience

The Agency Argument	The Variance Argument
The domain argument becomes more salient in the context of agency - intentional human action - and structure – set of institutions and other regularized, often formal social relationships within which such action takes place.	The variance detected in a portfolio of observations of geographic areas is likely to be greater when the areas themselves are smaller, at least if the overall geographic expanse covered by the sample is the same.
The Interaction Argument	**The Perspective Argument**
Local agencies and global structures interact with each other in different domains. The interaction may be simple (e.g. simple accumulation) or quite complex (positive and negative feedback loops), especially when humans are involved.	Focusing on a single scale tends to emphasize processes operating at that scale, information collected at that scale, and parties influential at that scale – raising the possibility of missing the relevance of processes that operate at a different scale.

Source: Adapted from (Wilbanks & Kates, 1999)

The arguments presented in **Table 2.1** do not necessarily mean that the linkages between local and global scales are relevant or significant in studying every problem about the human-environment interactions. As Wilbanks (2006) puts forth, while studying nature-society relationships, researchers should devote some time and effort to investigating the linkages among different scales (spatial or temporal) in order to understand whether these linkages are of importance to the questions at hand. However, there are challenges in studying and recognising such cross-scale interactions, which will be discussed below.

Cross-scale interactions and challenges to recognise them

Reid et al. (2006, p.8) define the concept of "cross-scale interactions" as the "situation where events or phenomena at one scale influence phenomena in another scale". That is, local actions may affect national or global environmental change, and hence policy making at larger scales, and in turn, they may be affected by the institutional structures, market dynamics or technological change at larger scales (Wilbanks, 2006). In an attempt to better categorise these interactions, Wilbanks (2006) offers seven different dimensions. These are as follows:

i) **Strength**: The interactions between scales can be strong or weak. For instance, in top-down regulatory control, there is a stronger interaction from national to local scales, compared to the bottom-up policy-making processes taking place in countries governed with representative democracy.

ii) **Constancy**: The cross-scale interaction may be happening in a constant manner as opposed to an intermittent manner, or the interactions can be periodic or irregular. For instance, local actions affect the global climate change in a gradual (i.e. rather constant) way, whereas technological breakthroughs at global scale affect the local actions in an intermittent (i.e. one shot) way.

iii) **Directionality**: Interactions can take place in only one direction (i.e. top-down or bottom-up) or they can be mutual (both-directions). For instance, in hierarchical organisations, interactions are often top-down, whereas in more democratic organisations, interactions can take place in both directions in the form of feedbacks.

iv) **Resolution**: An action at a particular scale may have impacts on another scale in a focused way (i.e. affecting only a specific process) or in a rather broadcast way (i.e. having a rather general impact on many processes).

v) **Context**: The interactions between scales can be additive or contradictory. For instance, a policy decision at national scale may reinforce global market signals, or they may differ from these market signals and have a contradictory impact.

vi) **Effect**: An event happening in one scale may have a stabilising or destabilising effect on another scale. For instance, a national policy of subsidising coal-fired power plants has a destabilising effect on the global climate change.

vii) **Intent**: One can act intentionally at one scale to affect the processes at another scale. For instance, a family (i.e. household scale) may choose to consume electricity produced from renewable sources intentionally, in order to remediate the global climate change. Or, a farmer may overuse synthetic fertilisers, which may have unintentional impacts on the global climate change.

In many instances, due to the complexity of the cross-scale interactions, there are strong challenges to overcome while trying to maintain the resilience of societies or ecosystems. Cash et al (2006) identify three sources for such challenges:

i) **Ignorance**: This source refers to the failure to recognise the importance of scale and cross-scale interactions altogether, and according to Cash et al (2006), this is the most fundamental challenge to overcome. However, whether the omission is intentional or not is difficult to understand, since the dynamics of society-environment relationship can be too complex to figure out in many cases. For instance, due to the ignorance of the cross-scale interactions, local actions may aggregate into global problems at some point in time, or short-term solutions (such as overuse of pesticides) for particular problems may turn into long-term problems of different kind (such as irreversible loss of biodiversity).

ii) **Plurality**: This source refers to the failure to recognise the heterogeneity in how different actors perceive and value different scales. This challenge arises due to the incorrect assumption that there is a single and correct definition, which applies to the whole system and for all actors. This challenge is frequently observed in cases where a policy-making problem is defined as purely global or local. Such

actions favouring a single set of solutions usually result in ineffective decisions and inequity between actors and stakeholders.

iii) **Mismatch**: As also put forward by Cumming et al. (2006), Cash et al. (2006) argue that social and ecological scales (or domains) are not always well-aligned. That is, the scale of the environmental process and the scale of the institution or organisation responsible for the management of this environmental process may not be coterminous. Trans-boundary pollution (including problems such as greenhouse gas emissions or nuclear fallout) constitutes an example for a mismatch in spatial scale, where the policy decisions are made at national scale, and the impacts are felt at global scale. Or, when the long-term planning needs cannot be satisfied due to short electoral cycles, a temporal scale mismatch arises (Cash et al., 2006). Finally, a functional scale mismatch may occur when functional scales of management do not align with the functional scales of ecosystem processes (Cumming et al., 2006). For instance, a city may grow beyond the ability of the ecosystem to provide it with basic services such as fresh water.

Due to the abovementioned causes, the governance of environmental problems that span over multiple spatial, socio-political or temporal scales turns into a challenge in itself and calls for a set of particular mechanisms, namely cross-scale governance, to address such problems. Below, a short review is provided.

Cross-scale governance

As previously mentioned above, the scale of the environmental problems are not always in line with the scale of the institutional responses. Designing and implementing effective governance solutions for the trans-boundary environmental problems such as acid rain, ozone depletion, climate change, is exceptionally demanding (Lemos & Agrawal, 2006). Historically, "the levels of decision-making have been conventionally examined as if they were independent" (Adger et al., 2003, p. 1100) following the assumption that "decisions are cascaded from international, to national, and then local scales" (Bulkeley, 2005, p. 876). In the tradition of international relations, for instance, global environmental problems are framed as problems of collective action between sovereign states, and hence, the governance of such problems should take place through international regimes (Bulkeley, 2005), under the assumption that the solution to global environmental problems such climate change lies in the creation of international institutions (Paterson, 2000).

However, although international regimes may have some degree of control over states, they are created by the states and for the states, through an interest-based bargaining, (Bulkeley, 2005) where the power relations determine the final outcome of this bargaining (Wilbanks & Kates, 1999). This raises "the possibility of misunderstanding cause and effect by missing the relevance of processes that operate at a different scale" (Wilbanks & Kates, 1999, p. 608), and it "serves to disembody the causes and consequences of such problems (…) from practices and politics taking place at a multitude of sites and scales of governance" (Bulkeley, 2005, p. 879). Furthermore, as Lemos and Agrawal (2006) point out, states have signed more than 1700 (multilateral and bilateral) environmental agreements, in line with the belief that international regimes provide solutions; however, to what extent these agreements have been effective in resolving problems remains questionable in

many cases.

As Adger et al. (2003) point out, there is a growing awareness about the significance of linkages between scales of decision-making. For example, the role of local communities in conserving biodiversity, or the importance of local action in both adaptation to and mitigation of climate change is increasingly recognised, not only by non-governmental actors and initiatives, but also by governments themselves (Adger et al., 2003). Furthermore, new approaches to horizontal governance are also emerging as an alternative to the rather hierarchical view of environmental governance (Bulkeley, 2005). As Marston, Jones, and Woodward (2005) argue, the concept of scale in human geography has been transformed over the past 20 years and human-environment interactions are now better understood as horizontal network relations, instead of a vertical hierarchical ones. Furthermore, there is an increasing awareness to study the horizontal networks of actors and institutions that operate across multiple scales, such as transnational advocacy networks (Bulkeley, 2005). These networks bring together a diverse range of different actors, sharing similar values and common discourses, and working internationally on the same issue (Bulkeley, 2005; Keck & Sikkink, 1999).

As Lemos & Agrawal (2006) state, a solution which can address the multi-scale characters of the global environmental problems can be to design multi-level governance mechanisms enhancing the representation of the different interest groups, by engaging different networks. In fact, such cross-scale or multi-level governance mechanisms are being shaped increasingly by non-state actors such as NGOs, transnational advocacy networks, inter-governmental organisations, or by even market-oriented actors such as multinational companies (Lemos & Agrawal, 2006). These mechanisms are also claimed to be helpful in compromise seeking and enabling greater transparency and higher level of representativeness (Papadopoulos, 2003). Although the transformative potential of these new mechanisms is contested by some scholars (Toke, 1999), it is argued that the involvement of these new actors into the policy arena has positively shaped the power relations among the stakeholders (Ford, 2003; Lemos & Agrawal, 2006).

In fact, as Hein et al. (2006) argue, the identification of the scales and the stakeholders affecting (and affected by) the environmental problems allows in the first place the identification of the nature of the socio-environmental conflicts among the stakeholders, as described in **Chapter 1**. In that sense, the multi-stakeholder multi-criteria decision support tools, offered as an appropriate method for decision-making in ecological distribution conflicts, may also serve as a cross-scale governance tool, given their strong capability of bringing together different actors, perspectives and alternatives. The following section briefly presents the properties of the multi-stakeholder multi-criteria methods as a background for further discussion on their use for cross-scale governance.

b) Multi-stakeholder multi-criteria to address value plurality and governance problems

Deciding on policy alternatives, such as whether to introduce a particular government policy (e.g. a new energy tax) or a particular investment project (e.g. building a new motorway or nuclear power plant), is no easy task. Decision-makers in many instances confront multi-faceted political challenges involving different interest groups and stakeholders, such as in the cases of ecological distribution conflicts described in **Chapter 1**. Addressing such conflicts necessitates dealing with issues such as value plurality and incommensurability.

So far, cost-benefit analysis (CBA) has arguably proven to be one of the most frequently employed approaches in deciding whether a particular project is socially desirable or when comparing alternative projects (Julien Francois Gerber et al., 2013). Governments and other decision-makers make extensive use of CBA, since reaching a decision is based on a simple and straightforward rule for them: implement the project if total benefits are greater than total costs. The main underlying goal here is to select the option that maximises total societal welfare and ensures the most efficient resource use. A state-of-the art CBA consists of the essential stages described below, in the eight-step guideline inspired from Hanley, (2000). It should be noted, however, that the order and number of steps may change depending on institutional and social contexts (see **Figure 2.3**).

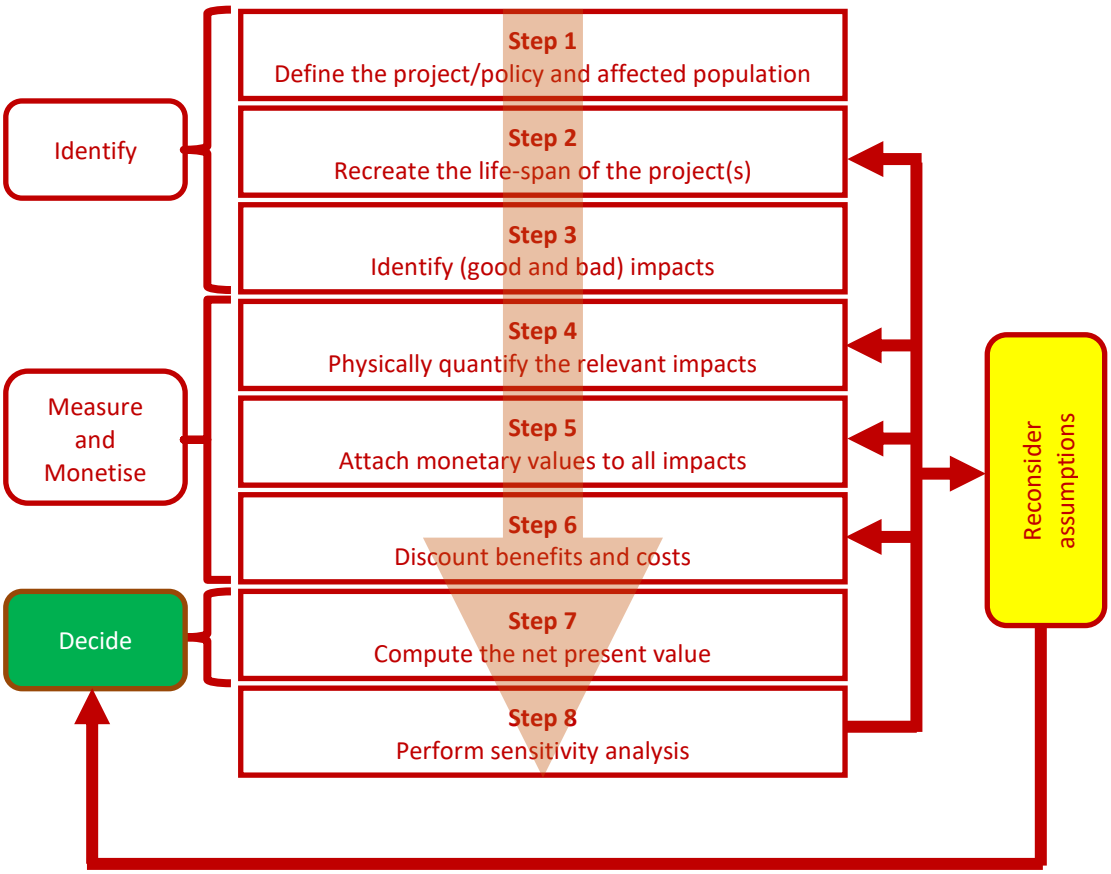


Figure 2-3 Conducting a CBA step-by-step

In each step described above in **Figure 2.3**, the analyst will naturally be confronted with considerable difficulties. For instance, not excluding any legitimate policy alternative and accounting for all the affected parties is not an easy task—a problem presumably common to all evaluation tools. Or, defining and measuring impacts in CBA are thought to require extensive expert knowledge—and hence are generally seen as a technical issue rather than being value-laden. Furthermore, accounting for interpersonal welfare impacts and interpreting inter-generational equity are also quite challenging in CBA (Hanley, 2000). All in all, conducting a CBA can prove useful in terms of gauging economic efficiency/inefficiency, but strong conclusions cannot be drawn about the net impact on equity, distribution and liabilities.

While CBA seems to provide quite a simple and straightforward decision rule in theory, the reductionism

inherent in the nature of this simplicity is a remarkable disadvantage, particularly when it concerns an ecological distribution conflict. Here, the main problem seems to be that CBA is inclined to reduce complex and multifaceted problems to only their economic dimension, which often disregards or misrepresents environmental and social issues (Munda, 2004).

Given that ecological distribution conflicts are often quite complex and multifaceted, conducting CBA may or may not beneficial to environmental justice, depending on the context. Some important problems regarding the implementation of CBAs may be summarised as follows:

- *The valuation of non-market goods is problematic:* CBA assumes that the environment is essentially no different from any other good or service providing utility. Hence, a trade-off between nature and other (produced) goods is possible, but it creates problems in terms of sustainability (Hanley, 2000)
- *CBA results are sensitive to assumptions:* Potentially, every assumption made in CBA (choice of discount rate, choice of stakeholders, calculation of probabilities and so on) can have a major impact on the end result; and therefore, in cases of uncertainty, the method becomes problematic in delivering robust results (Vatn, 2005)
- *Those who conduct CBAs may have their own agenda:* Another important concern (as raised by Spash, 2002) is the possibility of the institutional capture of information. Although CBA is deemed to be impartial and objective, the party that runs the analysis is not free of value judgements. As Hanley (2000) notes, agencies can maximise the likelihood for a given project to commence by bending the rules of the CBA procedures. Hence, in many cases "CBA is (…) no longer informing a decision, but is rather a justification for a decision already made" (Spash & Carter, 2001, p. 11).
- *CBAs have little to say on participation and procedural justice:* As stated above, CBAs rely heavily on expert knowledge. Hence, the affected parties (especially those who are not powerful) may find it difficult to voice their concerns. This in turn gives rise to problems of transparency, participation, and representation.
- *Valuation language and compensation mechanism:* When making decisions, CBAs consider only one value sphere—that of economics—and reduces the problem to economic efficiency, assuming that the impacts on nature are comparable and compensable. Therefore, the analysis permits trade-offs between "natural capital" and "man-made capital", which may come to mean that applying CBAs consistently can actually lead to a decline in the natural capital stock (Hanley, 2000). In addition, due to its single-value approach, any compensation is also monetary. Furthermore, the Kaldor-Hicks criterion only mentions a *potential* for compensation rather than the actual compensation (Farrow, 1998), and elaborates no further on how it should be operationalized, except that it should be a "monetary compensation".

In short, while useful is some contexts, CBA fails to address properly the important aspects of the policy-making regarding complicated decision-making problems. This shortcoming is also manifest in particular in complex decision-making problems such as nuclear energy cases, where aspects related to ecological complexity, uncertainty, and irreversibility (such as impacts on environment and health, waste management, and nuclear accidents) are usually addressed insufficiently. As Ravetz (2004) argues, in such decision making cases, the assumption that science can construct "facts" is not quite true since, as put forward by Latour and

Woolgar (1986), "scientific facts" cannot be isolated from values and interests. Many actors ranging from governments, electricity utilities, current and future consumers, to local communities are involved in policy problems, pursuing their own interests. In this context, Funtowicz and Ravetz (1994) propose that the policy making process should actually be a "dialogue" between all stakeholders, through democratization of knowledge and extension of the peer community, and should not rely only on the expert knowledge, as in the case of CBA. As many scholars have argued (e.g. Faucheux & O'Connor, 1998; Funtowicz & Ravetz, 1994; Martinez-Alier & O'Connor, 1999; Munda, 2008; O'Connor & Spash, 1999), in cases where priorities, attitudes and perceptions differ—in other words, when there is value pluralism—reaching a decision/solution based on technical schemes alone that satisfies all parties is not easy. The policy making problem in ecological distribution conflicts is one of the social choice situations where on the one hand, '…facts are uncertain, values in dispute, stakes high and decisions urgent' (Funtowicz & Ravetz, 1991, p137), and a deliberative practice is needed on the other, since there is a long or short term distributional conflict resulting from environmental change and risk (Faucheux & O'Connor, 2005; Frame & O'Connor, 2011). Accordingly, a proper method for assessing the policies regarding the ecological distribution conflicts should incorporate the evaluation of multiple alternatives; address the multiplicity of dimensions; avoid reductionism by addressing incommensurability and ecological complexity, be open to stakeholder participation, and hence be as transparent as possible.

Overall, the lack of a common value system, the incommensurability of existing values, and the uneven occurrences of impacts (hence unequal distribution of costs) resulting from the ecological distribution conflicts point to the conclusion that in order for environmental justice to be served with a legitimate decision, there is a pressing need for creating a participatory and deliberative process that addresses different dimensions and aspects of the conflict. In such conflict cases, deliberative and participatory multi-criteria/multi-stakeholder evaluation methods that integrate multiple perspectives and different valuation languages are put forward as viable governance and decision aiding tools, as they can accommodate incommensurability and pluralism in a transparent manner, and can therefore be employed in assessing trade-offs and consequences. As Munda, Nijkamp, & Rietveld, (1994, p.101) put forward, even though multi-criteria methods may not always provide a clear-cut solution, "they can help to provide more insights into the nature of these conflicts by providing systematic information and ways to arrive at political compromises in cases of divergent preferences".

In a standard multi-criteria assessment, a set of discrete number of alternatives (policy options or feasible actions) are evaluated against a set of different evaluation criteria. Given the set $\boldsymbol{A}$ of alternatives (with m different options) and set $\boldsymbol{C}$ of evaluation criteria (with n different criterion), a multi-criteria problem can be represented by an $n \times m$ matrix (called an evaluation or impact matrix), as shown in **Figure 2.4**, where each cell depicts the evaluation score or performance of a particular option/alternative a with respect to a particular criterion c (Munda et al., 1994). Accordingly, a typical multi-criteria problem starts with the definition and structuring of the problem at hand, followed by the generation or identification of alternatives or policy options and the set of evaluation criteria (Munda et al., 1994).

		ALTERNATIVES				
		Alternative 1 (a_1)	a_2	a_3	...	a_n
CRITERIA	Criterion 1 (c_1)	c_1a_1)	$c_1(a_2)$	...	...	$c_1(a_n)$
	c_2	$c_2(a_1)$	...	...	...	$c_2(a_n)$
	c_3	...	...	...	...	...
	..	...	...	...	...	...
	c_m	$c_m(a_1)$	$c_m(a_2)$	...	...	$c_m(a_n)$

Figure 2-4: An impact matrix used in SMCE presents the performances of each alternative across all criteria in quantitative or qualitative terms.

The well-established, albeit diverse multi-criteria literature (Montis et al., 2000; Polatidis, Haralambopoulos, Munda, & Vreeker, 2006) is still considered mostly technocratic, which make communities feel that "outside self-appointed 'experts' were intruding with concepts, ranking criteria and conclusions alien to the sentiments of the people themselves" (O'Connor, 2000, p. 183). Attempts have been made to overcome such issues by transforming the method into a more deliberative and participatory one (e.g. (Banville et al., 1998; Chamaret et al., 2007; De Marchi et al., 2000; Munda, 2008; Munda et al., 1994; O'Connor & Spangenberg, 2008).

A variety of multi-stakeholder and deliberative multi-criteria analysis frameworks has been developed in an effort to address the multi-faceted social choice problems involving different interest groups and stakeholders. Below, three of such multi-stakeholder multi-criteria tools, namely Social Multi-Criteria Evaluation (SMCE), Multi-Criteria Mapping (MCM), and the INTEGRAAL framework, are reviewed since i) they can accommodate stakeholder engagement and transparency in a strong manner, and ii) they can account for different types of knowledge (monetary or non-monetary; cardinal or ordinal) (Julien Francois Gerber et al., 2013).

Social Multi-Criteria Evaluation (SMCE)

SMCE is a framework developed by Munda (2004) to address decision-making problems with deep complexities, involving different stakeholder groups. It is a tool that can integrate different value languages, with different policy alternatives (Julien Francois Gerber et al., 2013). It is also useful in that it introduces a social and participatory approach that can account for multiple dimensions (e.g. political, socio-economic, as well as ecological, cultural and technological dimensions) in a systematic, structured and interdisciplinary manner (Munda, 2008).

In operational terms, six main steps can be presented in conducting a SMCE (Julien Francois Gerber et al., 2013; Munda & Russi, 2008):

i) Conducting an institutional analysis in order to understand the decision making context and identify relevant social actors and stakeholders

ii) Defining stakeholders' values, desires, and preferences, through conducting in-depth interviews and focus groups

iii) Generating policy options (alternatives) and criteria to assess the these options

iv) Constructing the multi-criteria impact matrix, synthesizing the performances of all options for all criteria

v) Calculating the rankings of each option under each criterion by applying a mathematical algorithm to obtain a final ranking of the available alternatives

vi) Analysing the potential for conflicts and coalitions between the stakeholders through constructing an equity matrix (**Figure 2.5**).

		ALTERNATIVES				
		Alternative 1 (A_1)	A_2	A_3	...	A_n
STAKEHOLDERS	Stakeholder 1 (S_1)	$S_1(A_1)$	$S_1(A_2)$	...	...	$S_1(A_n)$
	S_2	$S_2(A_1)$	...	...	...	$S_2(A_n)$
	S_3	...	...	...	...	...
	..	...	...	...	...	...
	S_m	$S_m(a_1)$	$S_m(A_2)$	...	...	$S_m(A_n)$

Figure 2-5 An equity matrix used in SMCE presents the judgments of each stakeholder for each alternative. It helps in analysing the different positions of different stakeholders, and illustrates the sources of conflicts and potential for coalition formation between stakeholders

SMCE is run in a participative and deliberative manner that creates social learning and it has a flexible iterative process that allows for new options and criteria to be added as the social learning process advances (Stagl, 2007). This process permits the inclusion of different values and perspectives of the stakeholders. Furthermore, SMCE is particularly capable of addressing incommensurability by allowing the options being comparable in each criteria separately, without recourse to a single value (Julien Francois Gerber et al., 2013; Stagl, 2007). The result of the SMCE process includes a ranking of the policy alternatives, calculated from the impact matrix, and a coalition formation analysis (represented in a dendrogram of coalitions using software such as NAIADE) of the stakeholders using the information in the equity matrix.

SMCE has been employed quite successfully as a tool for conflict management in many ecological distribution conflicts, in various cultural, political, and geographical contexts (Aydın, Özertan, & Özkaynak, 2013; De Marchi et al., 2000; Gamboa, 2008; Munda & Russi, 2008; Özkaynak, 2008; Scolobig, Broto, & Zabala, 2008; Walter, Latorre Tomas, Munda, & Larrea, 2016). The use of multiple criteria (put forth by the stakeholders) in multiple dimensions helps better the representation of value plurality in the evaluation exercise, and hence, SMCE "can be considered as a tool for implementing political democracy" (Walter et al., 2016, p. 445)

Multi-Criteria Mapping (MCM)

MCM is another form of multi-criteria evaluation framework based on interviews with stakeholders who are invited to assess the performances of a set of principal (provided by the researcher) and optional (put forward by the stakeholder) alternatives, against their own sets of criteria that they think are of importance (Julien Francois Gerber et al., 2013). Therefore, even though it involves creating a set of criteria and evaluating the performances of each policy option under each criterion (similar to other multi-criteria tools), it does not impose any previously determined definitions of criteria or alternatives on stakeholders, who are free to introduce criteria and alternatives of their own. Hence, MCM aims to open up the evaluation process (instead of closing down by focusing on a single aggregate solution or ranking) by devoting balanced attention to the contending views of different stakeholders – especially to those most often marginalised – and attempts to lay out the debate in a transparent manner (Coburn & Stirling, 2016)

In practical terms, MCM is conducted based on long interviews of 2-3 hours with each stakeholder individually. There are five stages in these interviews, namely selecting options, defining criteria, assessing scores, assigning weights, and reviewing ranks. However, as illustrated in **Figure 2.6**, this is not a linear and mechanical process, but a cyclical (the process can be repeated several times), iterative (interviewees can move freely in any direction between each step), and interactive (the interview is governed by the interviewees' own interaction with the entire process) one (Coburn & Stirling, 2016).

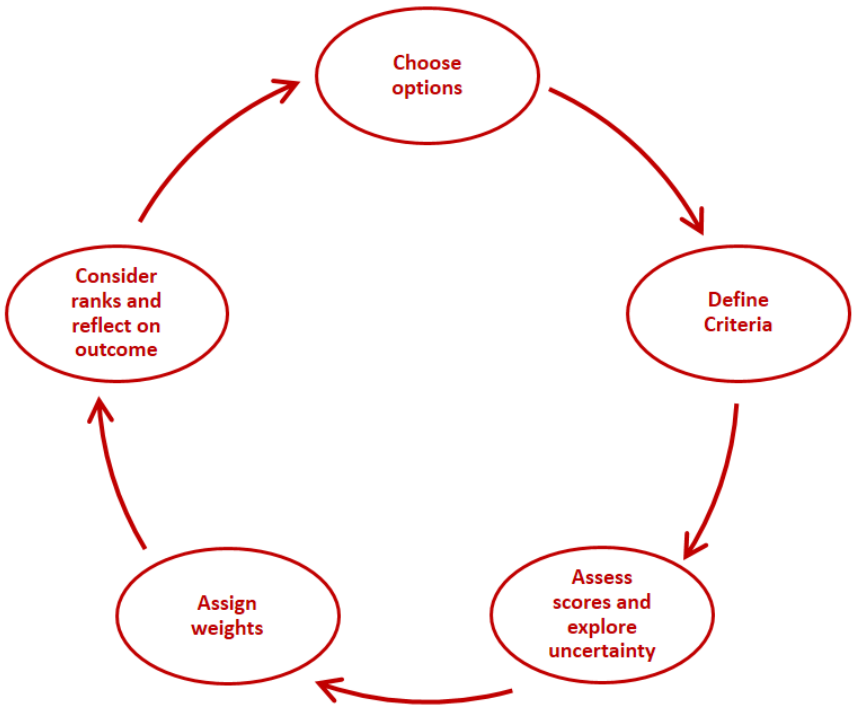


Figure 2-6 Stages in an MCM interview

Each step in the MCM process can be shortly described as follows (Stirling & Davies, 2004):

1- *Choose options:* In the MCM process, there is a set of core options predetermined by the interviewer, in order to provide a ground for comparison between the positions expressed by different interviewees.

However, interviewees can add new options, by dividing or combining these core options, or introducing entirely new options, which enables the interviewees to address any issue they seem fit.

2- *Define criteria:* The interviewees are asked to present a personal judgment about the issues, which are important in evaluating the previously determined set of options. These issues are then transformed into better-defined criteria, against which the options will be evaluated.

3- *Assess scores and explore uncertainty:* The interviewees assign two different numerical scores indicating the performances of each option under each criterion (that they have chosen in the previous step) in the best (most optimistic) and worst (most pessimistic) scenarios. The best and worst scores reflect the differences between the good and bad implementations of the options.

4- *Assign weights:* The interviewees are asked to attach to each of the previously determined criteria a numerical weighting, which reflects the relative importance of these criteria for the interviewee. The weighting process reflects the subjective judgments of the interviewees over different values and priorities.

5- *Consider ranks and reflect on outcome:* In this step, the interviewees view the result of the exercise on a computer-generated graph (with the help of a specifically designed software), which displays the relative ranking of each option under the best and worst cases (as illustrated in **Figure 2.7**). Accordingly, the interviewees can review the information they have provided and re-evaluate their rankings.

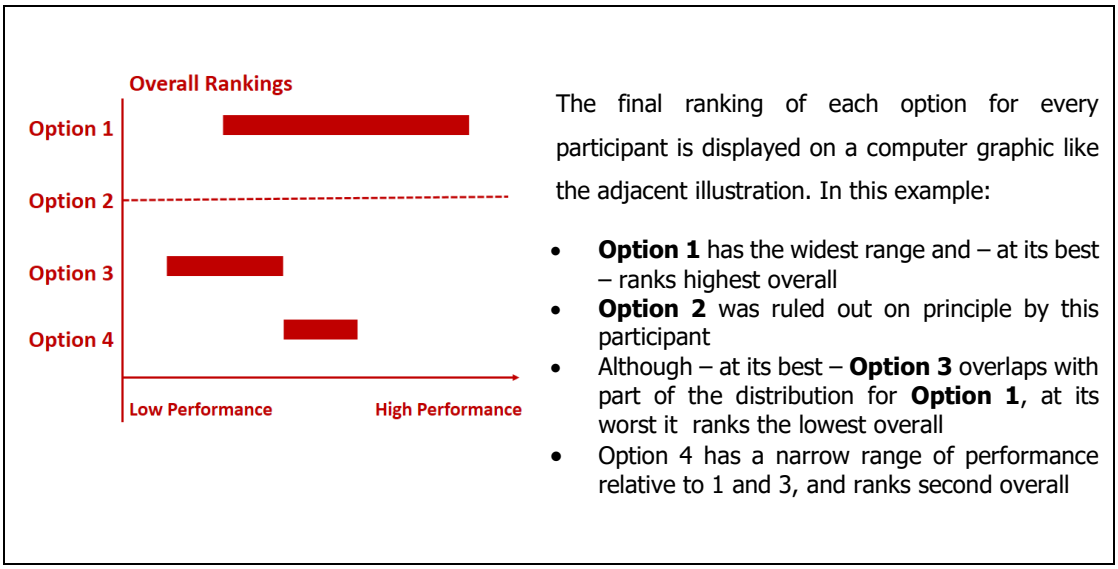


Figure 2-7 An example for the summary of performances of options (Stirling & Davies, 2004)

INTEGRAAL – Multi-Criteria Multi-Stakeholder Deliberation

Developed by O'Connor (O'Connor et al., 2006), INTEGRAAL is a deliberative multi-actor, multi-criteria framework for sustainability assessment. The main principle of this tool is to provide a "deliberative forum" that offers the participants the opportunity to discuss different aspects of an agreed problem, in a progressive and iterative manner. The framework allows a collective learning process, where different stakeholders can discuss a set of policy alternatives (or scenarios) across a set of issues (or criteria). In operational terms, the

framework consists of six main steps (as illustrated in **Figure 2.8**), described below, and even though presented here as a sequential framework, INTEGRAAL is not necessarily a linear process. The deliberation exercise is both iterative and cyclical (Julien Francois Gerber et al., 2013).

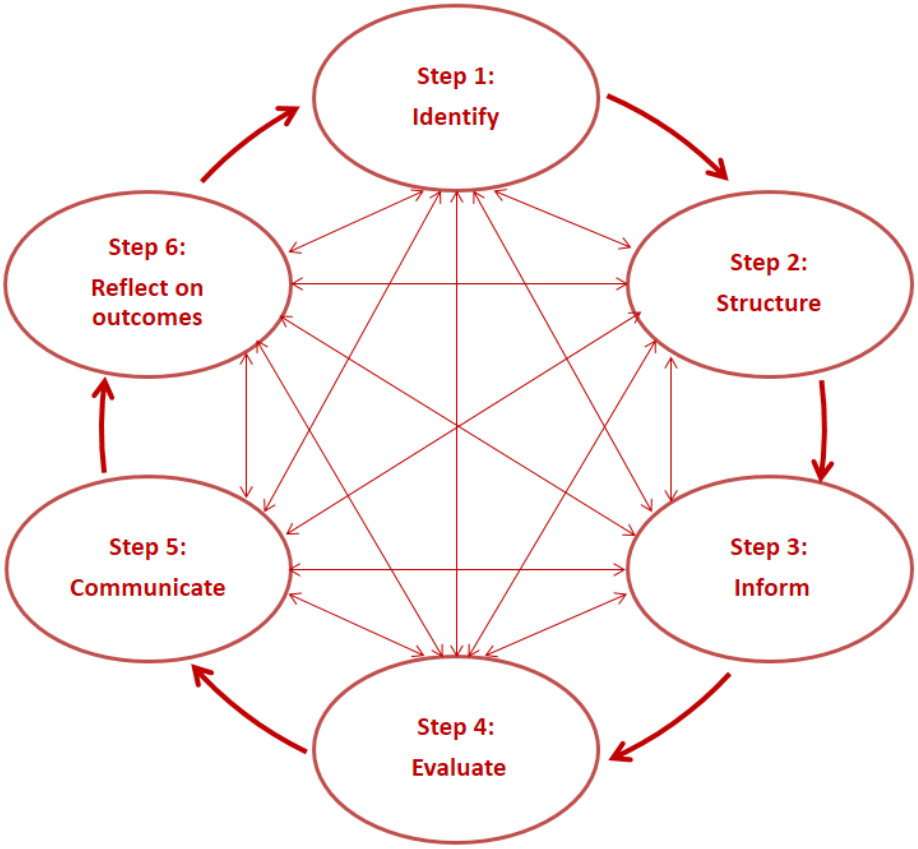


Figure 2-8 INTEGRAAL framework

1- *Identification of the social choice problem:* In this step, the objective is to deliver the context, the scale, and the dynamics of the deliberation exercise to be conducted. Depending on the level of participation, this step can be conducted collectively by the stakeholder community or by the researcher beforehand.
2- *Organise the problem:* In this step, i) the concerned actors (stakeholders who will be affected by the social choice problem or the means of addressing this problem); ii) the options (the policies, strategies, scenarios); and iii) criteria (issues against which the performance of the policy options will be evaluated) are determined.
3- *Mobilise information tools:* This step concerns the identification of the information and tools upon which the deliberations will be based. Accordingly, this step is about identifying the indicators to assess the alternative options.
4- *Mobilise stakeholders for evaluation:* Using the information generated in the first three steps, stakeholders express their respective position vis-à-vis each option across all issues and engage in a deliberation process where they discuss these positions. Consequently, these discussions help stakeholders to understand their respective positions and create a collective learning environment where stakeholders may update their previous positions, and may reach a compromise solution.

5- *Communication of results:* In this step, the reporting of the evaluation exercise is conducted, including all the information and documentation generated along the way. This process may not necessarily produce a conclusion about the 'best' option. It may allow creating a partial ranking with reference to a specific issue, or from a single stakeholder's perspective.
6- *Reflection on the outcomes:* In this step, the information created along the way is evaluated and reviewed. If necessary, the exercise may restart from step one.

By bringing together the stakeholders, options, and governance issues, a three-dimensional **deliberation matrix** (or cube) can be constructed, as illustrated in **Figure 2.9**. The cube is formed of individual cells, which represent each stakeholder's judgments of each alternative, in relation to each of the governance or decision issues(O'Connor et al., 2006). The **deliberation matrix** can be established after a participatory and deliberative process such as the one described above. Alternatively, one can represent an existing conflicted social choice problem by identifying the relevant stakeholders, the issues raised by them, and the discussed alternatives (O'Connor et al., 2006).

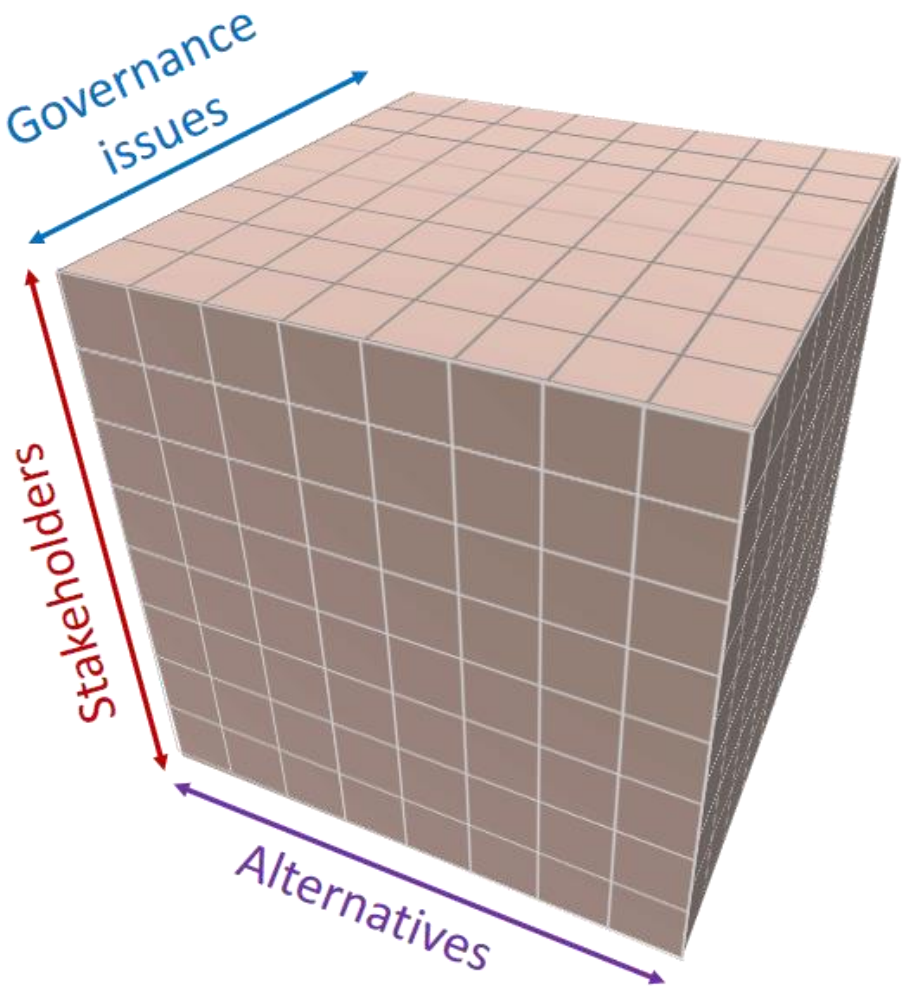


Figure 2-9 Representation of three-dimensional deliberation matrix

The three-dimensional deliberation matrix can be viewed from different façades, and from each façade, different layers can be obtained. These are as follows:

- *For each class of stakeholder* a matrix presenting issue by issue evaluations of each alternative by a particular stakeholder class (**Figure 2.10.a**)
- *For each alternative (or scenario),* a matrix of issue by issue evaluation by each class of stakeholders for a particular alternative (**Figure 2.10.b**)
- *For each issue,* a matrix of stakeholder by stakeholder evaluation of each alternative with reference to the selected issue (**Figure 2.10.c**)

Stakeholder group 1 (S1)		**ALTERNATIVES**				
		Alternative 1 (A_1)	A_2	A_3	…	A_n
ISSUES	Issue 1 (I_1)					
	I_2		I_2A_2	I_2A_3		
	…					
	..					
	I_m					

Figure 2.10.a: Issue by issue evaluation of each alternative by the stakeholder group 1. For instance, the green cell in I_2A_2 depicts the positive judgment by the S_1 for the alternative A_2 with reference to issue I_2. Whereas I_2A_3 depicts the negative judgment of the same stakeholder for the alternative A_3.

Alternative 1 (A1)		**ISSUES**				
		Issue 1(I_1)	I_2	I_3	…	I_m
STAKEHOLDERS	Stakeholder 1 (S_1)	S_1I_1	S_1I_2			
	S_2	S_2I_1	S_2I_2			
	…					
	..					
	S_k					

Figure 2.10.b: Issue by issue evaluation of the Alternative 1, by each stakeholder group. For instance, for the alternative A1, while Stakeholder 1 expresses positive judgments with reference to issue 1 (S_1I_1), and negative judgments with reference to issue 2 (S_1I_2), Stakeholder 2 expresses opposite judgments in both issues.

Issue 1		**ALTERNATIVES**				
		Alternative 1 (A_1)	A_2	A_3	…	A_n
STAKEHOLDERS	Stakeholder 1 (S_1)					
	S_2		S_2A_2			
	S_3		S_3A_2			
	..					
	S_k					

Figure 2.10.c: Evaluations by each stakeholder group of each alternative, with reference to Issue 1. For instance, while stakeholder 2 expresses negative views for alternative 2 (S_2A_2), stakeholder 3 expresses positive judgments for the same alternative (S_3A_2), with reference to Issue 1.

Figure 2-10 Different cross-sections of a deliberation matrix

The simple graphical illustrations in **Figures 2.10.a**, **b**, and **c** represent well the conflicts between stakeholders and the sources of these conflicts.

All three multi-stakeholder multi-criteria frameworks presented above (SMCE, MCM and INTEGRAAL) permit the transparent organisation of different categories of information and stakeholders. However, they are not

perfect tools that can be applied to all decision-making cases since:

- Conducting them still requires expert guidance throughout the process.
- End-users still perceive multi-criteria frameworks as being quite complicated (Gamboa, 2008) and the results reached with these tools are not always as easily communicated as the simple monetary result of a CBA.
- In many cases, it is difficult to gather all the stakeholders together since some social movements may be unwilling to participate in such processes due to distrust in governments (Gamboa, 2008) or governments/decision makers may not heed the arguments of the social movements and choose not to run a participatory procedure.
- Power relations between stakeholders may be quite problematic during the deliberation exercises since powerful actors may influence the judgments of less powerful actors.

Despite the above challenges, multi-stakeholder multi-criteria frameworks are still quite useful in allowing the recognition of the plurality of legitimate principles of choice. They clearly present in a transparent manner, the central challenge of a political process: negotiating some sort of a consensus or compromise solution around conflicting interests of different stakeholder groups about the distribution of risks and benefits of particular policy options (O'Connor et al., 2006). In that sense, deliberative and multi-stakeholder multi-criteria evaluation and decision support tools address all three dimensions of environmental justice (participation, recognition, and distribution), as put forth by Schlosberg (2007). However, the implications of scale for a multi-criteria evaluation are also quite significant in generating evaluation criteria or legitimate options, due to subjective nature of decisions on different scales (Munda, 2004). The following section will try to present how a multi-criteria/multi-stakeholder approach can be served as a governance tool for ecological distribution conflicts having a large scope in spatial and/or temporal scales.

c) Using multi-criteria frameworks as a tool for cross-scale governance

There are many studies putting forward the necessity of multi-scale/multi-stakeholder governance in cross scale cases ranging from the community to the international scale (e.g. Berkes, 2000; Cash et al., 2006; Giampietro & Mayumi, 2000; Giampietro & Ramos-Martin, 2005; Lemos & Agrawal, 2006; Paavola & Adger, 2006). As Giampietro and Ramos-Martin (2005) put forward, an integrated assessment requires a multi-scale and multi-dimensional analysis. Cash et al. (2000, p.9) argue that the "…systems that more consciously address scale issues and the dynamic linkages across scales are more successful at (1) assessing problems and (2) finding solutions that are more politically and ecologically sustainable". It is important to ensure that best available knowledge and information is available while making a decision that has consequences present at different scales, and this is possible only by accounting for multiple scales and multiple stakeholders simultaneously (Reid et al., 2006). For instance, (in the context of Millennium Ecosystem Assessments) Zermoglio et al. (2005) argue that there are at least two types of benefits to be gained through factoring in multiple scales in conducting assessments: information benefits and impact benefits, presented in **Table 2.2** below.

Table 2.2 Types of benefits gained through multi-scale assessments

Potential information benefits	Potential impact benefits
Better problem definition: A single-scale assessment tends to focus narrowly on the issues, theories, and information most relevant to that scale. Perspectives gained from other scales would contribute to a fuller understanding of the issues**.**	***Improved relevance of the problem definition:*** An assessment focused on the specific needs of the decision-makers and stakeholders at a particular scale will be more relevant than an assessment in which those users have little input.
Improved analysis of scale-dependent processes: Many ecological and social processes exhibit a characteristic scale. If a process were observed at a scale significantly smaller or larger than its characteristic scale, there would be the likelihood of drawing the wrong conclusions.	***Increased ownership by the intended users*** Even if an assessment is technically credible and focused on relevant issues, the intended users of an assessment may not use the findings if they do not feel some level of ownership in the process. A multi-scale structure could increase their legitimacy.
Improved analysis of cross-scale effects: Understanding cross- scale effects is often key to understanding processes of ecological and social change. For example, the direct cause of a change in an ecosystem is often intrinsically localized (a farmer cutting a patch of forest), while the indirect drivers of that change (e.g. a subsidy to farmers for forest clearing) may operate at a regional or national scale.	***Improved scenarios:*** The key uncertainties that a local community may identify as differentiating reasonable future path- ways of development may often be different from those identified by users at regional or global scales. At each scale, the scenarios used could thus incorporate the effects and considerations from coarser and finer scales.
Better understanding of causality: The relationships among environmental, social, and economic processes are often too complex to understand when viewed at any single scale, hence studies at additional scales are often necessary to understand fully the implications of changes at any given scale.	***More balanced assessment results:*** Since the choice of scale for an assessment is not politically neutral, it may intentionally or unintentionally privilege certain groups. Incorporating multiple assessments in a single process balances various approaches and helps mitigate potential structural biases associated with the choice of scales.
Improved accuracy and reliability of findings: Sub-global assessment activities can help to ground-truth the global findings	***Increased capacity building:*** More institutions could become involved in the multi-scale assessment process and learn from it.

Source: Adapted from (Zermoglio et al., 2005, pp. 67–68)

As Reid et al. (2006) put forward, although the potential benefits presented in **Table 2.2** are significant, it is still a challenge to design and implement a multi-scale assessment procedure. There are further challenges such as how the scales of analysis should be selected or whether a common conceptual framework can be used at multiple scales. Furthermore, as also claimed by Paavola and Adger, (2006), there is no clearly distinguishable scale of decision making for undertaking actions. Hence, the issues of "how the governance should be operationalized" and "which actors should participate" do not have clear answers, either.

As already mentioned in the first section of this chapter, when governing the human-nature relationship, strong challenges arise due to the complexity of cross-scale interactions, such as plurality, ignorance, and mismatch (Cash et al., 2006). Capable of accurately addressing such challenges as value plurality, ignorance and uncertainty, participation, and incommensurability; multi-stakeholder and deliberative multi-criteria evaluation tools may help addressing the above challenges put forth by Reid et al. (2006), Paavola and Adger

(2006) and Cash et al. (2006), and may open avenues for the governance of conflicts with cross-scale interaction.

However, before proceeding further, it should be noted that the choice of scale itself constitutes a challenge for multi-criteria evaluation, since, as put forward by Munda (2004, p. 663) in the context of SMCE:

> The implications of scale for multi-criteria evaluation are very important (…) in *generating evaluation criteria* (e.g., in evaluating the impacts building a ski infrastructure in a mountain region, who are the relevant social actors? The inhabitants of the mountain region, the potential users in urban areas or even the ecological preservationists all around the world all are reasonable answers) or *in computing the impact scores* (e.g., a contamination indicator has to be computed locally, or should it be computed at a larger scale? The use of hydrogen cars inside cities is clearly good at a local level, but it is not that clear at a global level, where the emissions depend on the technology by which hydrogen is produced, since hydrogen is an energy carrier and not an energy source) or *in choosing the weight factors* (Munda, 2004, p. 663*, emphasis added*)

The existence of different scales implies the existence of non-equivalent descriptions of a system (Giampietro, 1994). Hence, in line with the "perspective argument" put forward Wilbanks and Kates (1999) (presented in **Table 2.1)**, there is a problem of multiple-identities, which "cannot be interpreted solely in terms of *epistemological plurality* (non- equivalent observers), but also in terms of *ontological characteristic*s of the observed system (non-equivalent observations)" (Munda, 2004, p. 663). The multi-stakeholder and deliberative multi-criteria evaluation frameworks address epistemological plurality by bringing together different observers (i.e. actors and stakeholders) into the evaluation process. However, the assessment of these stakeholders is affected by the scale they are found in, i.e., the observed system. For instance, as shown in the **Table 2.3** below (illustrating the policy-making decision regarding energy production), the scale from which the stakeholders assess the policy-making problem seems to determine which issues the stakeholders prioritize or how they frame a policy making problem.

Table 2.3 An example illustrating the differences in perspectives of different stakeholders from different scales

	Global	**National**	**Local**
	Climate change and energy	*Energy and national growth (and development)*	*Local development*
What	Different energy production alternatives	Different energy production alternatives	Different local development alternatives/projects, including but not limited to energy production
Why	Energy demand should be met and GHG emissions should be reduced at the same time for mitigation/adaptation	Energy demand and national growth	Prosperity, energy demand
For whom	All the people in the world	Citizens of the country, national firms, multi-national firms	Local residents
Who	Supra-national institutions, multi-national firms, governments	Governments, national firms, citizens of the country	Local residents, governments, citizens of the country

Inspired from Frame and O'Connor, (2011) and O'Connor, (2006))

As seen from **Table 2.3,** the scale of observation creates,

i) *Different sets of alternatives:* For instance, while the decision-making problem in global and national scales is framed as "which energy production methods should be chosen", at local scale, the problem is framed as "which options (including energy production) may foster local development better".

ii) *Different sets of criteria:* While at the national scale the decision criteria mostly involve the energy demand and national growth of the country, the local criteria may be focused on preserving the indigenous life-style or fostering local prosperity.

iii) *Different sets of stakeholders:* For instance, when framed as a national scale policy-making problem, the actors taking part in the decision making process are mainly the government, national and international firms, and the citizens of the country. However, if framed as a local scale problem, the local actors (e.g. the residents) should also take part in the process.

As a matter of fact, each column presented in **Table 2.3** can be represented as a distinct deliberation cube, where some alternatives, issues, and stakeholders are common, while some others are different. For instance, in the case of the national and local scale, there are two different three-dimensional deliberation matrices, which can be represented as two cubes intersecting at one corner, as displayed in **Figure 2.10**. The intersection depicts the alternatives, issues, and stakeholders common to both decision problems (at both scales).

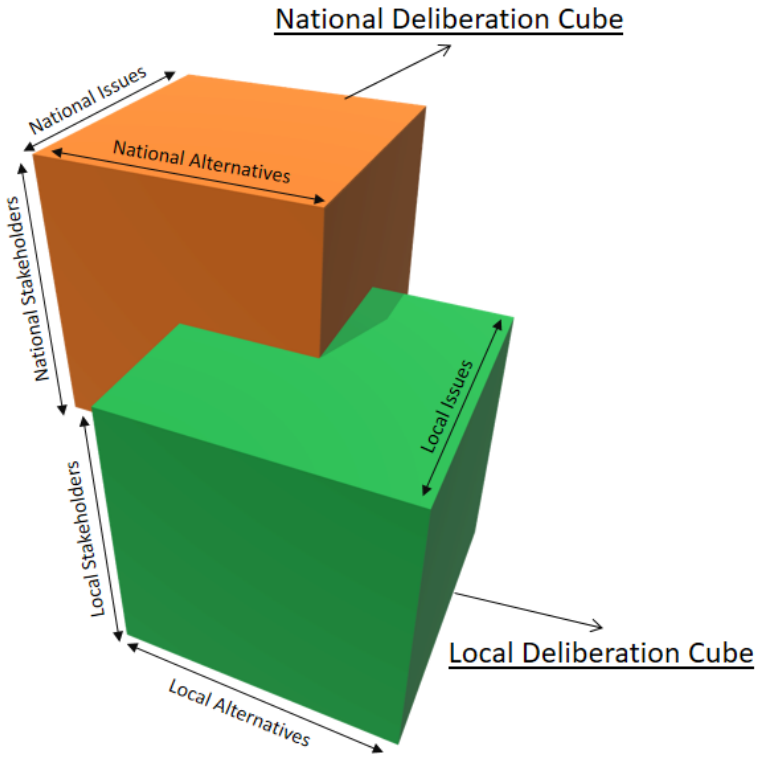


Figure 2-11 The intersection of two different deliberation cubes at two different scales, national and local

The above framework illustrated in **Figure 2.11** can be constructed for a framing the conflict around a particular policy-making problem, by answering three simple questions (inspired from O'Connor, 2006) as follows:

1- *Who and for whom*: The answer helps the identification of the stakeholders and actors who will be influential in the policy making process, or be affected by the final decision. The stakeholders can be characterised as local or national, depending on their sphere of influence or their place of residence.
2- *What*: This question helps to identify the set of alternatives relevant in national and local scales, offered by the stakeholders identified in the previous question.
3- *Why:* The different governance issues can be identified by answering the question of "why a particular stakeholder favours (or opposes) a particular alternative".

Following the answers to the above questions, a three-dimensional cube composed of stakeholders, alternatives, and governance issues at each axe can be formed. This cube can be rearranged to accommodate the national and local deliberation cubes presented in **Figure 2.11**, as displayed below in **Figure 2.12,** by taking out alternatives and issues ignored either by local or national stakeholders.

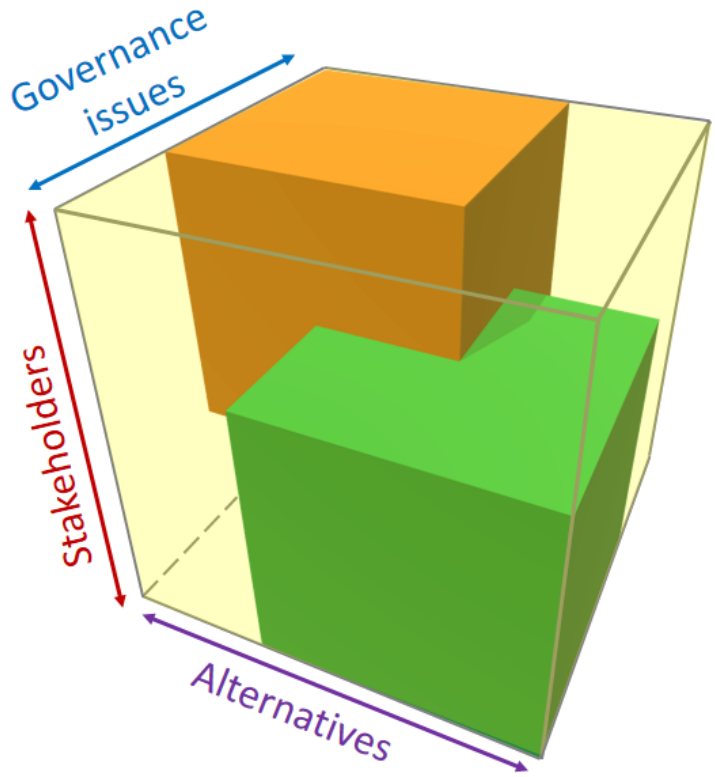


Figure 2-12 A deliberation cube accommodating local and national scale deliberation cubes

A cross section of the above cube will look like the **Figure 2.12**, displayed below.

Issues	Local stakeholders	National stakeholders

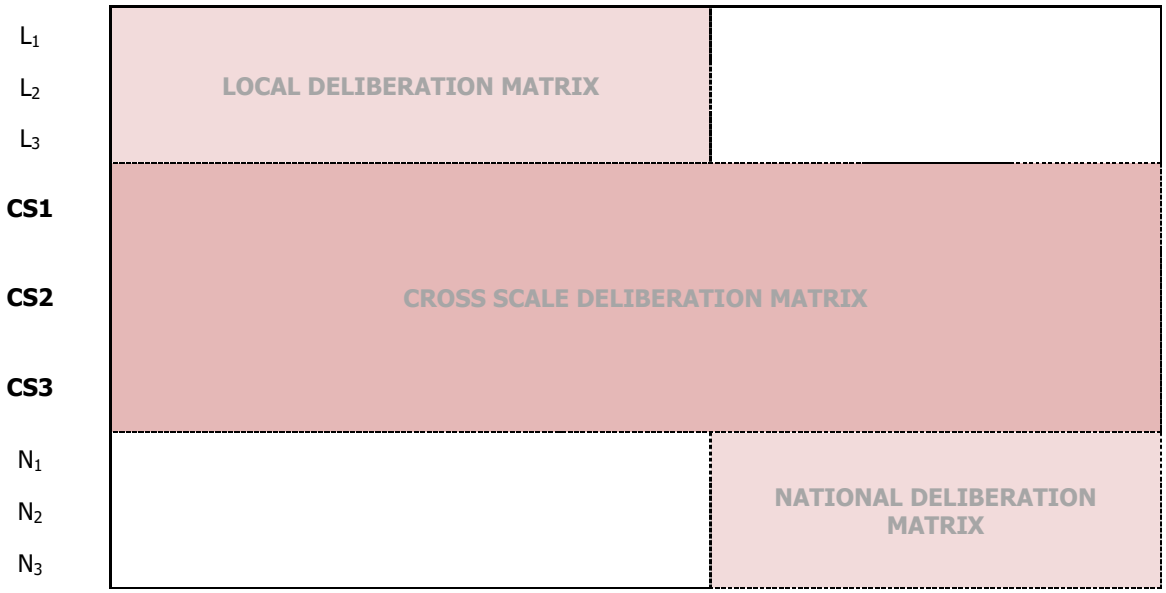


Figure 2-13 Cross section of the deliberation cube, displaying the relevant issues for local and national stakeholders, for a particular policy alternative

This framework is useful in facilitating the comparison between stakeholders, alternatives and governance issues. With the aid of a visual representation, the sources of conflicts between the stakeholders can be explored in a more systematic way. The identified conflict sources can be the result of value plurality between the stakeholders on the same jurisdictional (or spatial) scale, or they can be the result of the *perspective argument* put forward by Wilbanks and Kates (1999). That is, stakeholders operating at a particular scale may miss the relevant processes at another scale and may omit some legitimate alternatives and governance issues. For instance, as displayed in **Figure 2.13**, national stakeholders omit the local issues L1, L2 and L3, while local stakeholders overlook the national issues N1, N2 and N3. It is clear that such mismatches between the perceptions of local and national stakeholders are a source of potential conflict.

Framing a conflict over a policy-making problem with the multi-criteria/multi-stakeholder framework described above helps defining and understanding the problem better, by incorporating perspectives from different scales. Furthermore, it avoids potential structural biases related to the choice of scale (Zermoglio et al., 2005), which, as Reid et al. (2006) put forward, is not politically neutral. This, in turn, creates a more balanced and inclusive deliberation forum, which increases the relevance of the problem definition and has the potential of improving policy scenarios.

This framework provides better knowledge to the decision-makers, concerning conflicts between different stakeholders across different scales. Even though better knowledge does not necessarily mean that a better decision will be made or better solutions will be generated, "it does provide a sound basis for making better decisions and for holding decision makers accountable" (Reid et al., 2006, p. 1).

The second part of this thesis will try to provide an application of this framework to the conflict over nuclear energy production in Turkey.

Part II:

From theory to practice - An application

As described in **Part I**, the rapid growth in consumption and production has escalated the need for energy and raw materials, led to ecological distribution conflicts around the world, and ignited environmental justice movements against dams, thermal and nuclear energy plants, mines, industrial fishing, and waste disposal, to name a few (Martinez-Alier, 2002, 2012). Turkey is no exception and it has witnessed a growing number of environmental conflicts for the last three decades, following the aggressive neo-liberal policies of modernisation and industrialisation. One of the most emblematic of such conflicts is the long-standing conflict around the nuclear power plants. Although Turkey does not have any nuclear power plants yet, it has a long and complicated history of conflict and mobilisations against them. For the last six decades, Turkish governments have been advocating the construction a nuclear power plant on the grounds that it is necessary for the development of the country, for the reduction of external energy dependency, and for technological advancement. However, the first attempts in late 1970s provoked an immediate reaction from the civil society, giving rise to a long-standing conflict that is yet to be settled.

This part will apply the framework presented in **Chapter 2** to a real world situation by investigating the decision of adding nuclear energy to the energy portfolio of Turkey, at local and national scales. The problem will be framed within the larger context of energy-related environmental conflicts in Turkey.

In this background, **Chapter 3** will attempt to contextualize the problem at hand, by briefly recounting environmental governance practices in Turkey, the recent environmental mobilisations, environmental governance and energy-related ecological distribution conflicts in the country. **Chapter 4** will focus on nuclear energy in particular and it will be divided into two sections. The first section will provide an overview of the historical development of nuclear power in the world and present the recent global trends. The second section will focus on the particular case of Turkey, by first recounting its history of nuclear power, and then laying out the current debate over nuclear energy in Turkey. **Chapter 5** will frame the debate over nuclear energy in Turkey, in an attempt to show that the multi-criteria/multi-scale framework presented in **Chapter 2** may offer viable conflict governance mechanisms that serve the environmental justice better.

Chapter 3: Environmental conflicts in Turkey

Similar to the global pattern, Turkey has witnessed a growing number of environmental conflicts for the last three decades, following the aggressive neo-liberal policies of modernisation and industrialisation. Such policies were contested by the public at large through environmental mobilisations against mines, dams, thermal and nuclear power plants, and waste disposal. In an attempt to document these mobilisations, the Turkish Map of Environmental Justice was compiled, parallel to the compilation of the Global Environmental Justice Atlas.

This chapter will make use of the Turkish Map of Environmental Justice to lay out the current situation of the environmental distribution conflicts in the country, followed by a short account of environmental governance in Turkey. Afterwards, a short summary of the energy related conflicts will be provided, again by making use of the Turkish Map. Lastly, a brief report of the cross-scale interactions in energy related conflicts will be delivered.

a) A mapping exercise: The Turkish Map of Environmental Justice

As mentioned in Chapter 1, the growth in material and energy flows of the economies and societies create important environmental impacts, igniting environmental justice movements against dams, thermal and nuclear energy plants, mines, industrial fishing, and waste disposal all around the world (Martinez-Alier, 2002). Similar to the global pattern, Turkey has witnessed a growing number of environmental conflicts since 1990s. The size of the economy more than doubled in the past two decades, urbanization level rose from 60 percent to 75 percent and the population increased by more than 30 percent. As a result, several important biodiversity hotspots of global significance in the country are under pressure of degradation and many endemic species face extinction due to the increasingly aggressive policies of modernisation and industrialisation of the country (Paker, Adaman, Kadirbeyoğlu, & Özkaynak, 2013).

According to the environmental performance index published by the Yale University each year, in 2016, Turkey ranked 99th out of 180 countries with its overall score, and 177th in the biodiversity and habitat category[8] as seen in **Table 3.1** (Hsu et al., 2016). The adverse effects of the economic development in the country gave rise to complaints against current or potential impacts from natural resource extraction, land use change, energy production and increased pollution, causing local communities at grassroots levels as well as national and international civil society organisations to be increasingly involved in environmental justice movements (Özkaynak, Aydın, Ertör-Akyazı, & Ertör, 2015).

Table 3.1 EPI scores and ranks for Turkey for different indicators (Hsu et al., 2016)

Name of indicatore	**Score (out of 100)**	**Rank (out of 180)**
Health impacts	74.43	81
Air quality	79.30	98
Water and sanitation	85.06	71
Water resources	78.99	53

[8] Detailed information about Turkey's performance can be found at http://epi.yale.edu/country/turkey [Accessed 05.03.2017]

Agriculture	87.04	86
Forest	68.48	40
Fisheries	57.82	35
Biodiversity and habitat	22.53	177
Climate and energy	47.77	101

Over the years, the country witnessed many well-known environmental protests such as the Bergama movement against gold extraction (Çoban, 2004; Özen, 2009) or the movement in Gerze against a coal fired power plant (Akbulut, 2014; Arsel, Akbulut, & Adaman, 2015). More recently, there are mega-projects, which have been heavily contested by the civil society. These mega-projects include a third bridge over the Bosporus Strait, a third airport in Istanbul, and opening a huge canal to connect the Black and Marmara Seas, which will destroy Istanbul's last remaining forests, important water resources, agricultural areas, and bird migration routes (Gülersoy, Erdemli Mutlu, & Yazıcı Gökmen, 2014). There are other cases where local communities are fighting against activities such as dam construction and energy projects in protected areas, waiving the obligatory EIA Report for mega projects, allowing mining exploration in nature conservation areas, and weakening control mechanisms concerning the use of forest and coastal areas (Özkaynak, Aydın, et al., 2015).

One of the emblematic and recent examples of the environmental justice movements in Turkey is the Gezi Park demonstrations, which took place in June 2013 and generated widespread interest and coverage both nationally and internationally. This emblematic protest took place "in a country where the environmentalist discourse is very much dominated by planting trees" (Özkaynak, Aydın, et al., 2015, p. 105), against the bulldozers which were moving in to uproot the trees in the park (which is practically the only green space left in the area), in preparation of rebuilding the Ottoman Military Barracks which had been standing there more than half a century ago, before the park was built. The people in Istanbul did not need yet another shopping mall or a luxury hotel; instead, they wanted to preserve what was left from the last green space in the old and vibrant neighbourhood of Taksim. Indeed, claims of the Gezi Park protestors seemed straightforward and in line with the global environmental justice movement (Schlosberg, 2013).

In an attempt to document such environmental mobilisations around the country, the Turkish Map of Environmental Justice has been compiled as reported by local activists and scholars[9], documenting more than 150 conflicts in eleven categories, as shown in the **Figure 3.1**. The compilation of these cases provides a basic, yet an important step toward informing public debate in Turkey over the environmental justice movements ignited due to the conflicts between development and environment.

[9] See www.cevreadaleti.org [Accessed 05.03.2017]

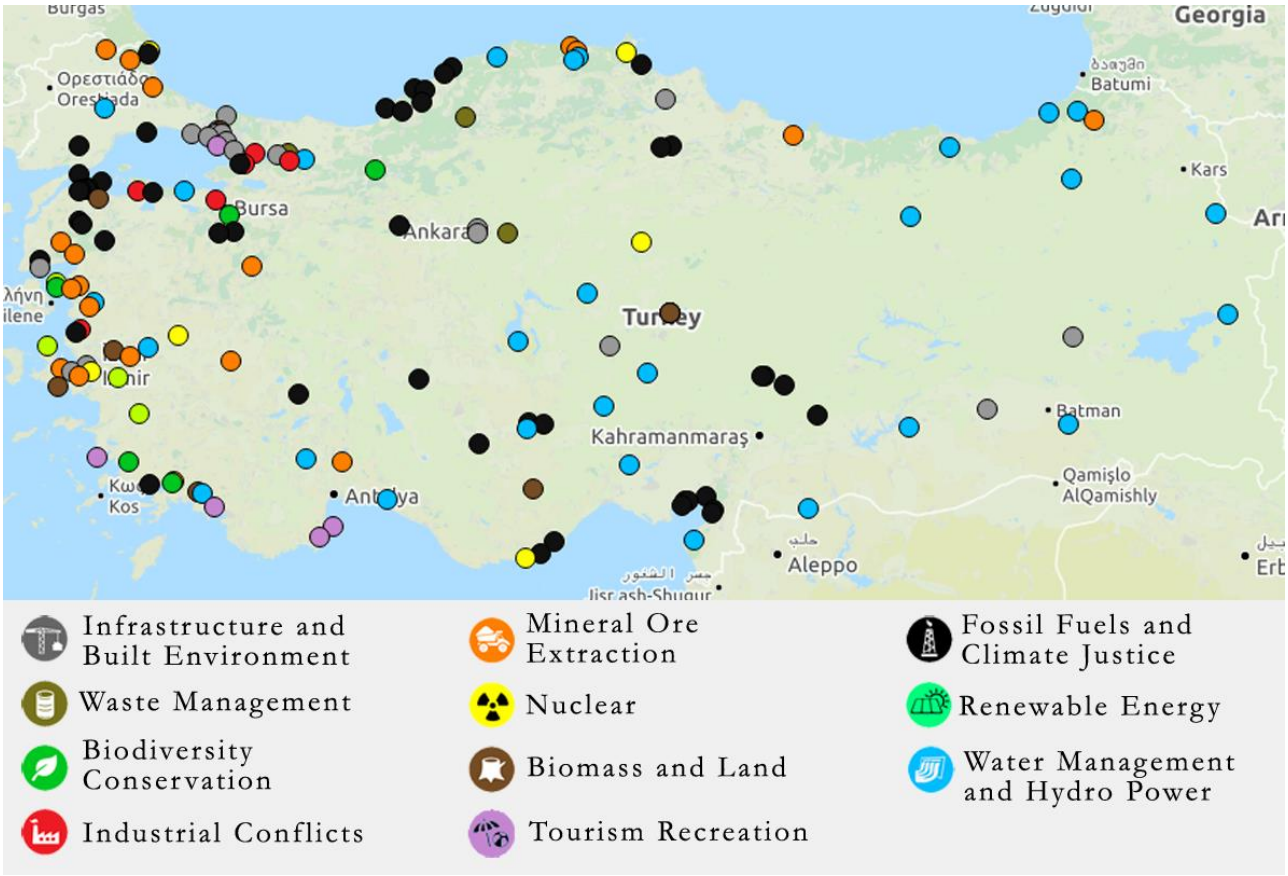


Figure 3-1 Map of Environmental Justice in Turkey, accessible in Turkish

The map can serve as an important tool where, with the help of quantitative and qualitative data, environmental conflicts can be described, compared and interpreted. As seen in **Table 3.2**, the map classifies conflicts in eleven main categories. It is also possible to report subcategories (secondary level types) for each conflict, as shown in **Table 3.3**.

Table 3.2 Frequency of reported conflicts according to categories

Conflict categories	Total number of cases as of August 2016
Fossil fuels and climate justice	50
Water management and hydro power	28
Mineral ore and building material extraction	20
Infrastructure and built environment	18
Biomass and land conflicts	8
Industrial conflicts	6
Nuclear	6
Biodiversity conservation	5
Tourism and recreation	5
Renewable energy (Wind, solar, geothermal)	4
Waste management	3
Grand Total	**153**

Table 3.3 Frequency of reported conflicts according to secondary types

Secondary type	#	Secondary type	#
Coal fired thermal power plants	48	Manufacturing activities	3
Hydropower plants, dams and water distribution conflicts	23	Chemical industry	3
Water access rights and entitlements	14	Wind farms	3
Mineral ore exploration and extraction	13	Water treatment and access to sanitation	3
National parks and protected areas	13	Land grabbing	3
Urban transformation and other urban conflicts	12	Soil salinization	3
Wetlands and coastal zone management	10	Gas fired thermal power plants	2
Deforestation and forest management	9	Geothermal power plants	2
Tourism facilities (hotels, marinas, resorts)	8	Ports and airport projects	2
Building materials extractions	8	Uranium mining	2
Landfills and toxic waste treatment	6	Waste incineration facilities	1
Mineral processing	6	Fisheries and aquaculture	1
Other industries	4	Bio-piracy	1
Inter-basin water transfers	4	GMOs	1
Nuclear power plants	4	Pasture management	1
Pollution related to transport	4	Nuclear waste storage	1
Transport infrastructure networks (roads, railways, canals etc)	4		

Table 3.2 and **3.3** show that many of the reported conflicts on the map are in categories related to the production, consumption or transmission of energy, such as coal-fired power plants and hydropower plants. The highest number of reported cases is in the category of fossil fuel and climate justice conflicts, mainly documenting the movements against the coal and natural gas fired thermal power plants. Water management and hydropower category, which documents conflicts over the lakes and rivers, including large and small-scale hydro power plants comes next. Other two energy related categories are nuclear and renewable energy

categories. In total, as of August 2016, 82 cases on the map have been reported to be related to energy production.

Indeed, it is possible to establish a link between the high number of energy related conflicts and the trends showing the level of extracted energy in Turkey's societal metabolism. As shown in **Figure 3.2**, the energy extracted from hydro and brown coal has been on a steady rise since 1950s. Especially in hydropower, there has been a sharp increase in the last decade (Özkaynak et al., 2014), in line with the country's recent energy policy of using all hydropower potential to generate electricity[10]. Similarly, in an attempt to reduce the dependence on imported energy, Turkey plans to exploit the brown coal (lignite) resources of the country, which in turn explains the high number of the reported fossil fuel conflicts against coal-powered plants under construction or at planning stage.

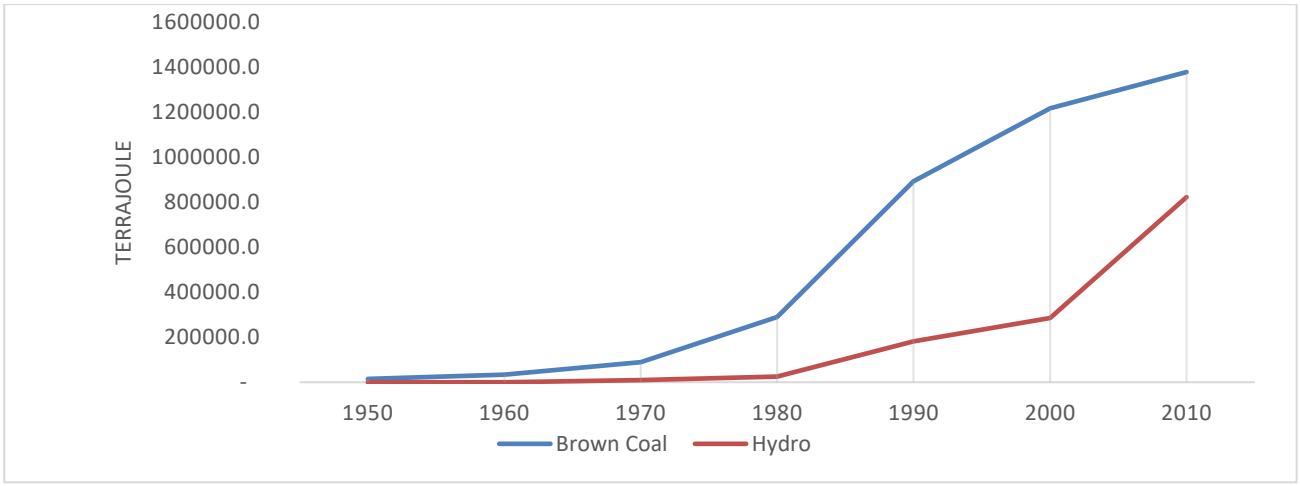


Figure 3-2 Extracted energy from hydro and brown coal between 1950 and 2010 (Özkaynak et al., 2014)

From a similar perspective, it is possible to compare the number of conflicts in a specific category with the trends in the domestic material extraction of Turkey. As shown in **Figure 3.3**, the amount of construction minerals (i.e. sand, gravel, stone) has been increasing steadily over the years. This is in line with the high number of conflicts reported in both *mineral ore and building material extraction* and *infrastructure and built environment* categories. The amount of extracted fossil fuels is also increasing, again corresponding to the high number of conflicts related to thermal power plants. This line of reasoning lends supports to the argument that "ecological distribution conflicts are largely related to growth and changes in the social metabolism" (Martinez-Alier et al., 2016, p. 17).

[10] http://www.mfa.gov.tr/speech-entitled-_vision-2023_-turkey_s-foreign-policy-objectives__-delivered-by-h_e_-ahmet-davutoglu_-minister-of-foreign-af.en.mfa *accessed: 16.05.2014*

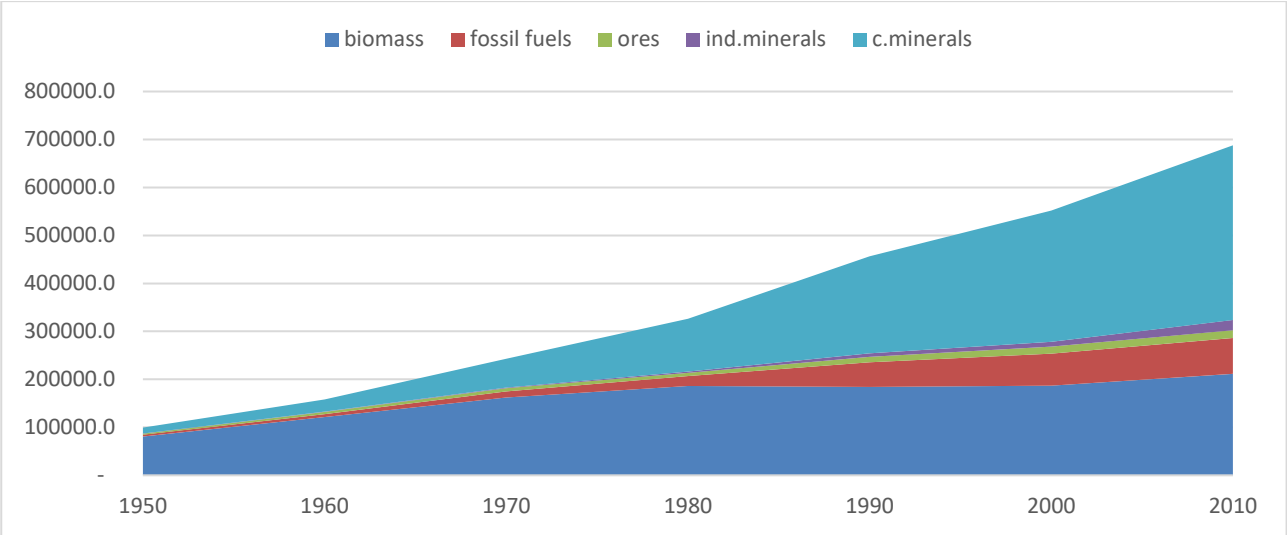


Figure 3-3 Turkey 's domestic material extraction between 1950 and 2010 (in 1.000 tons) (Özkaynak et al., 2014)

The data compiled through this map also proves useful in understanding some other properties of the ecological distribution conflicts and resistance movements in Turkey. For instance, **Figure 3.4** shows the varying intensity across conflict types. It is possible to see that 36 conflicts are reported as latent and 67 conflicts are reported as low intensity (together constituting the majority of the reported conflicts), whereas only 11 conflicts are reported as high intensity.

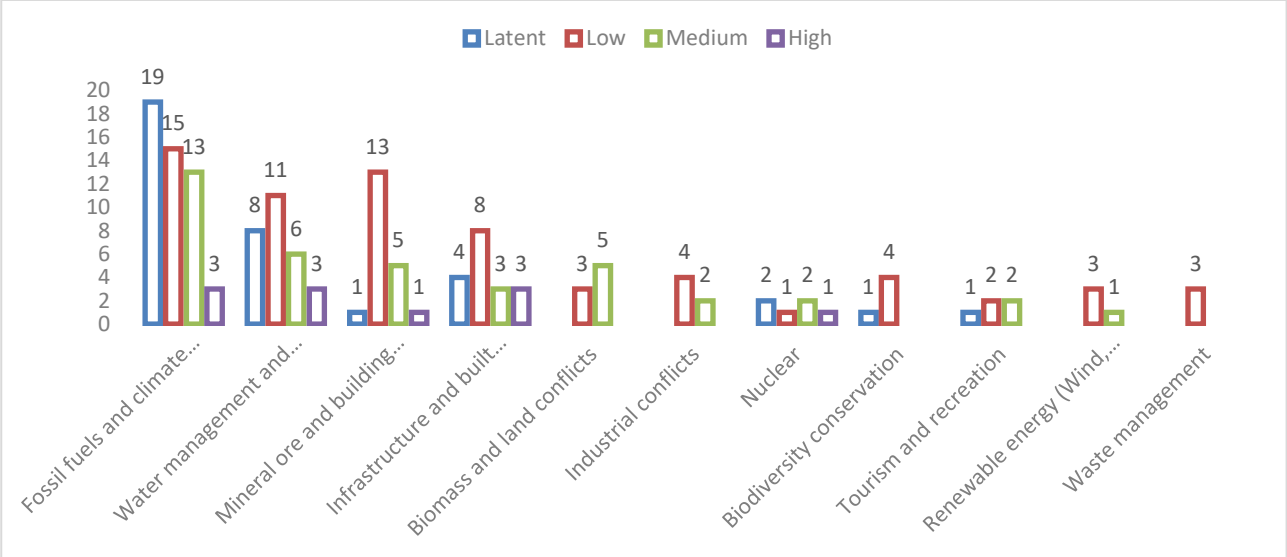


Figure 3-4 Frequency of reported conflicts according to categories and intensity of conflict

An in-depth analysis may provide some insights into the reasons why some conflicts are reported as latent and others as high intensity. In this context, **Figure 3.5** exhibits the intensity of conflicts in fossil fuel and climate justice conflicts according to the project status information. It is possible to see that a high number of conflicts are reported as latent when the project is newly announced or at planning stage, but these can potentially be exacerbating in the future.

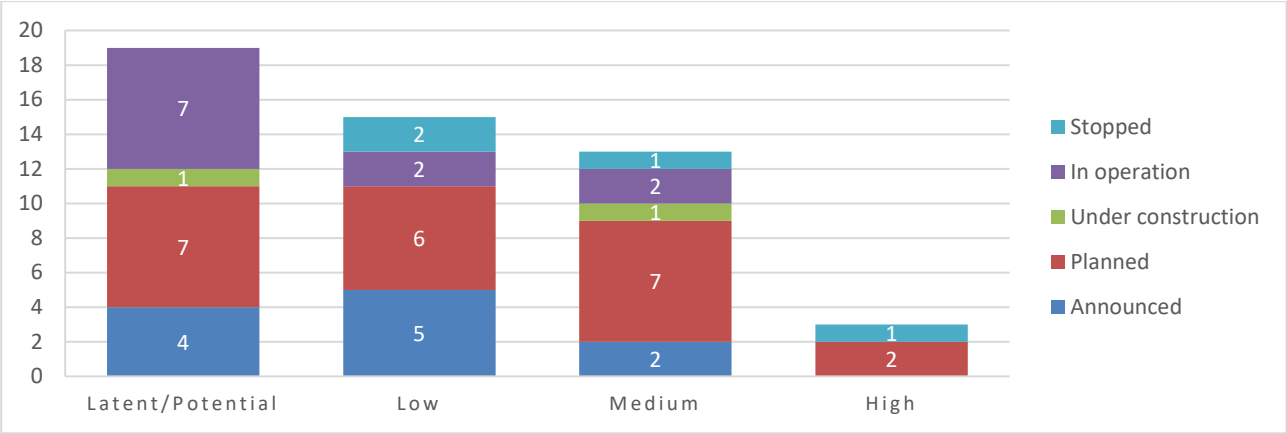


Figure 3-5 Frequency of reported conflicts in fossil fuel and climate justice according to project status and intensity of conflict

The data compiled in the map also includes the list of actors mobilising in conflicts. As shown in **Figure 3.6**, the actors that mobilise are most often local communities/villagers, followed by local NGOs. Similarly, in a large number of conflicts, scientists and experts are reported as involved actors, showing that mobilising groups are well aware of the fact that using scientific facts is important to make the opposition strong.

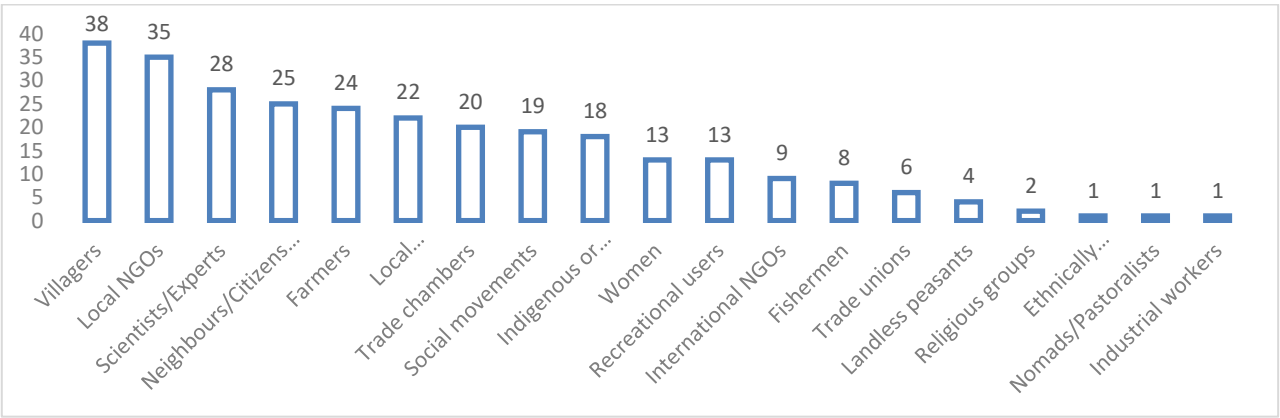


Figure 3-6 Frequency of actors mobilizing for environmental justice

Such a mapping exercise of ecological conflicts can be seen as a novel form of creating knowledge by both activists and scientists, and such co-production is increasingly recognised as a pertinent method of informing scientific debate with policy implications (Martinez-Alier et al., 2016). More specifically, when accompanied by geographic information and data on flows of material and energy, it has the potential to offer understanding the root causes of environmental change and the surfacing of ecological distribution conflicts. However, in order to fully understand the dynamics of a conflict, there is a pressing need to further study the institutional context; in particular, the participation and recognition related aspects inherent in conflicts as well. (Schlosberg, 2007). In this context, the following section will summarize the status of environmental governance in Turkey in the background, by shortly describing the current policy practices and key actors.

b) Environmental governance in Turkey at a glance: Policy, practice, and actors

Turkey has a rich record of legal texts (at both the constitution and law level) favouring the protection of the environment. The most notable example is perhaps Article 56 of the Constitution of 1982, where everyone's "right to live in a healthy and balanced environment" is recognized. According to Article 56, "It is the duty of

the State and citizens to improve the natural environment, to protect the environmental health and to prevent environmental pollution".[11] However, as Cerit Mazlum, (2006) argues, although it seems promising to have a constitutional language for the protection of environment, the legal text in Turkey on environment does not usually translate well into practice when economic growth and development are at stake. In a similar vein, Adaman and Arsel (2005) argue that the legislative text on environment is well established whereas there are still significant environmental challenges due to insufficient implementation. Over the years, governments in Turkey, irrespective of their political stance, have supported development projects that created growth and jobs, at the expense of high environmental costs (Paker et al., 2013).

In order to understand the problem of implementation, it is useful to look at the historical development of the current implementing body, The Ministry of Environment and Urbanisation. The early steps towards a national environmental policy started in the late 1970s, at the aftermath of the United Nations Stockholm Environment and Human conference. As a first attempt to institutionalize environmental policymaking, the Undersecretariat of Environment, affiliated to the Prime Ministry, was established in 1978 (Adaman & Arsel, 2012). With increasing concerns over environmental problems and growing awareness in 1980s, the Under Secretariat was first transformed into the General Directorate of Environment in 1984 and then into Ministry of Environment in 1991 (Paker et al., 2013). In 2003, the Ministry of Environment merged with the Ministry of Forestry, forming the Ministry of Environment and Forestry. Not a decade later, in 2011, the ministries were restructured again and this time, the Ministry of Environment and Urbanisation was established, forging together the Ministry of Environment and Ministry of Public Works and Housing. Although at first it seems to be an insignificant detail, the history section of the Ministry website does not mention anything about the Ministry of the Environment, and only the history of the Ministry of Public Works and Housing is provided. [12] From this point, it can be deduced that the former Ministry of Public Works and Housing has only changed its name to include three general directorates form the old Ministry of Environment and Forestry (DG of Environmental Management, DG of Environmental Impact Assessment, Permit and Inspection, and DG of Protection of Natural Assets) (Şahin, 2014). In this context, Şahin (2014) argues that the focus of the current Ministry is not environment but in fact just urbanism.

Meanwhile, in 2011, Ministry of Forestry was transformed into the Ministry of Forestry and Water Affairs, undertaking some responsibilities over the protection of environment, as well. This created several conflicts of authority between the two ministries. [13] In addition to these two ministries, the Ministry of Health, Ministry of Energy and Natural Resources, and the Ministry of Food, Agriculture and Livestock also have responsibilities concerning the protection of environment (Adaman & Arsel, 2012). The abovementioned transformation of the institutions and agencies for environmental policy aptly illustrates why the Turkish state should not be seen as a monolithic body. The legislative, judicial, and executive constituents clash with one another as the state bureaucracy is organised as multiple and competing institutions and agencies (Adaman & Arsel, 2012; Akbulut, 2011). This conflict of authority and impermanence of the institutional structure is one of the reasons

[11] Constitution of the Republic of Turkey, Article 56, https://global.tbmm.gov.tr/docs/constitution_en.pdf [Accessed 08.03.2017]
[12] See MoEU web site: http://www.csb.gov.tr/turkce/index.php?Sayfa=sayfa&Tur=webmenu&Id=15 [Accessed 08.03.2017]
[13] See Official Gazette dated July 4, 2011 and numbered 27984, "Decree Law No. 644 on the Organization and Duties of the Ministry of Environment and Urbanism" and "Decree Law No. 645 on the Organization and Duties of the Ministry of Forestry and Water Affairs"

for the state's inability to implement environmental legislation. Indeed, the governance problem arising from the multiplicity of agencies is crystallised well in the climate change governance in Turkey, as described in the **Box 3.1**. Accordingly, six different ministries are involved in the process, together with three business associations, and no civil society organisations. It is important to note that the ministries have different stances against an ambitious climate policy, sometimes creating conflicts between the ministries themselves.

Box 3.1 State actors in the climate change governance in Turkey *(prepared using Şahin, 2014)*

The climate policy governance in Turkey is led and coordinated by the Ministry of Environment and Urbanisation (MoUE), which hosts Turkey's chief negotiator under UNFCCC. Along with the MoUE, other important actors regarding climate policy governance are:

- Ministry of Energy and Natural Resources - the key actor for the energy and mitigation policies, usually having a defensive stance against the ambitious climate policy
- Ministry of Development - the key actor for the analysis of the economic impacts of the policies, also having a defensive stance
- Ministry of Forestry and Water Affairs - responsible for the adaptation policies and LULUCF
- Ministry of Food, Agriculture and Livestock - working for both the adaptation and mitigation policies
- Ministry of Foreign Affairs - providing diplomatic support during international negotiations.

These ministries, together with the three major business associations TUSIAD, MUSİAD and TOBB, constitute the "Climate Change and Air Management Coordination Board" and currently the civil society in Turkey has no representation in this board.

Adaman and Arsel (2012) argue that apart from the multiplicity of agencies, the incapability of the state to implement environmental legislation largely stems from the patronage-based reciprocity, sacrificing environmental protection at the expense of particular private interests. Although the state in Turkey is built on and operates in a top-down structure (Heper, 1991), the interaction between elites and the state is carried out mostly through corruption networks, bribery and patronage (Adaman, Çarkoğlu, & Şenatalar, 2009; Heper & Keyman, 1998; Transparency International, 2016). Hence, so far, both the governments and the attached elites have found and created ingenious ways to circumvent existing legislation (Adaman & Arsel, 2012). Furthermore, as mentioned before, when a choice between industrialisation and environmental protection is on the table, state's tendency has almost always been to opt for industrialisation, regardless of the political stance of the government (Adaman & Arsel, 2012). The legal text does not translate well into practice due to the incapability of the institutional structure and the unwillingness of governments to enforce the legislation properly (Adaman & Arsel, 2012). As a result of this lack of commitment to environmental protection, such important procedures as environmental impact assessments are most of the time seen as formalities, sometimes resulting even in failure to implement definitive court decisions (Paker et al., 2013).

The period after 1980s onward, when the foundations of environmental legislations and institutions were first laid, also marks one of the most important periods in terms of the socioeconomic transformation of Turkey, given the ambitious liberalisation attempts of the Özal government just after the military rule between 1980

and 1983 (Adaman & Arsel, 2012). Turkey embarked on a path of neo-liberalization, a transformation that has been fostered by multilateral institutions such as the International Monetary Fund (IMF) and the World Bank (Harris & Işlar, 2013). With this transformation, the role of the state did not weaken, but has transformed from being the provider of public utilities and services to being the regulator of a private sector and business-friendly environment, where Özal took strong steps for integrating the Turkish economy with global capitalism (Adaman & Arsel, 2012; Harris & Işlar, 2013). This neoliberal turn also affected the environmental and resource use/access governance in the country through a wave of liberalisation and deregulation of many sectors, including the energy sector (Harris & Işlar, 2013). For instance, before 1980s, the investments on hydroelectricity production were characterised by the big public investments for the construction of large dams, with no participation from the private sector. However, after the neoliberal shift in the natural resource sector, the Turkish government, in an attempt to increase the capacity for electricity generation, started a large-scale project to promote small-scale hydroelectricity plants owned by the private sector, where "water usage rights" would be granted to companies for 49-year periods (Harris & Işlar, 2013).

Özal's aspiration to integrate the economy with global capitalism also resulted in a bid for full membership in the EU, which in turn had a great influence on the environmental legislation in Turkey (Adaman & Arsel, 2012). Since the environmental *acquis* contains several major legislations on water and air quality, waste management, nature conservation, industrial pollution control, noise, climate change, chemicals and GMOs, and horizontal legislation headings such as environmental impact assessment, and public access to environmental information, the alignment attempts brought into the country a large bulk of environmental legislation. As part of the approximation progress, Chapter 27 on environment was opened in 2009 and a large chunk of IPA (Instrument for Pre-Accession Assistance) funds (~15% of the total) was allocated to the alignment of the environmental legislation in the form of laws, regulations, and decrees. However, as mentioned earlier, the large bulk of environmental legislation did not translate fully into implementation. The 2016 Turkey Progress Report prepared by the European Commission points out the implementation problem as follows:

> "Turkey is at some level of preparation in this chapter. In the past year, there was some progress, mainly in increasing capacity in waste management and wastewater treatment, whereas *enforcement and implementation remains weak*, especially on waste management and industrial pollution. (…) In the coming year, Turkey should (…) complete alignment with the directives on waste management, industrial pollution and water and *ensure correct implementation of the environmental impact assessment legislation*."[14][Emphasis added]

The problem of implementation was not exceptional to the 2016 report, as it was again quoted in the progress report of 2015: "… *whereas enforcement remains weak*, especially on waste management and industrial pollution. (…) *Poor implementation of court rulings* on environmental issues is causing public concern".[15] In 2014, the quote was "Turkey has made some progress in aligning legislation in the fields of environment and

[14] European Commission 2016 Turkey Report, p.86, https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/pdf/key_documents/2016/20161109_report_turkey.pdf [Accessed 08.03.2017]
[15] European Commission 2015 Turkey Report, p.76, https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/pdf/key_documents/2015/20151110_report_turkey.pdf [Accessed 08.03.2017]

climate change, *whereas enforcement remains weak*".[16]

Overall, the EU accession process, in addition to its effects on the environmental legislation in Turkey, has enabled the civil society in Turkey to rise to prominence. This was partly due to the increased efforts for integration to the global economy. In fact, before 1980 military coup, there was already a vibrant civil society, which, however, did not have any transformative power over the state structure (Paker et al., 2013). The liberalisation period after the coup brought about the flourishing of the civil society, mobilizing for a wide range of issues such as gender, human rights, and environmental protection. Especially in 1990s, the number of environmental organisations increased (Adem, 2005), as environmental degradation and ecological issues became more apparent in the country's agenda (Paker et al., 2013).

Indeed, the development of the environmental movement in Turkey and the ways in which the environmental organizations can influence public policies are mainly determined by the political structure of the state. As Cerit Mazlum (2006) argues, the state in Turkey (regardless of the political stance of the governments) is *passive-exclusive*[17], in the sense that the state acts selectively when taking into account the views of the civil society. Some requests can be considered negotiable, depending on the nature of the organisations, whereas other demands can be totally ignored if they create conflicts with other prioritized areas in policy-making.

Thus, in practice, the Turkish state adopts a rather arbitrary stance towards the civil society. If an environmental organisation does not contradict the developmentalist priorities of the state, it can find the state accessible on some cases (while inaccessible on other cases) (Paker et al., 2013). Therefore, it would not be wrong to point out that, in Turkey, there is limited participation of the environmental organisations in the decision-making processes related to the environment (Cerit Mazlum, 2006). This type of selective cooperation was especially visible in the early 2000s, when Turkey's candidacy for the EU obliged the state to collaborate with the environmental organisations as a precondition for getting hold of the pre-accession funds (Kadirbeyoğlu, Adaman, Özkaynak, & Paker, 2017).

Despite the involvement of some environmental organisations in the decision-making and policy-making processes in Turkey, participation is often not effective (Adaman & Arsel, 2012; Kadirbeyoğlu et al., 2017). There are cases where civil society organisations have sometimes participated in decision-making processes by becoming members of the commissions, by presenting their opinions and by contributing to the development of environmental legislation. However, more often than not, participation has been confined to "participation on paper", with meetings organised as formalities, where policy proposals by the environmental organisation are ignored and are not reflected in final decisions and regulations (Paker et al., 2013). Furthermore, given the inability and reluctance of the state to protect the environment, the relations between the civil society and the state has become a rather conflicted terrain, where, even such matters as nature conservation, which is usually considered a relatively conflict-free subject in the global North, may become a

[16] European Commission 2014 Turkey Report, p.71, https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/pdf/key_documents/2014/20141008-turkey-progress-report_en.pdf [Accessed 08.03.2017]

[17] As Dryzek, Downes, Hunold, Schlosberg, & Hernes (2003) put forward, a state can be inclusive or exclusive in terms of their attitudes towards letting non-governmental bodies (specifically civil society) to access decision making mechanism. They can apply this inclusion of exclusion either actively or passively. Passive in the sense that state does not hinder the social organisation, whereas does not support its development.

controversial political topic in Turkey (Paker et al., 2013).

Against this background, an increasingly active and critical environmental civil society has emerged since mid-2000s, to address the deepening of environmental problems which rapidly rose in number and aggravated due to the aggressive growth strategies, particularly in the fields of the energy and infrastructure (Kadirbeyoğlu et al., 2017). As mentioned in the previous section, these aggressive policies led to several local environmental conflicts against the construction of thermal and nuclear power plants, small scale hydropower projects, renewable energy projects, urban transformation policies and mega infrastructure projects (Özkaynak, Aydın, et al., 2015). And recently, the state's lack of commitment to environmental protection makes it a constant battleground for civil society actors (Paker et al., 2013). The next section will look closely into some recent ecological distribution conflicts resulting from aggressive energy policies, again by making use of the Turkish Map of Environmental Justice and other data sources.

c) Turkey's energy related conflicts

Turkey's energy policies have been predominated by concerns over the security of supply, affordability of energy prices, and competitive power. These concerns entail a number of important challenges and responsibilities for the country, both in terms of energy and environmental policies, and particularly in terms of climate politics. With a population of more than 75 million and GDP of approximately 900 billion dollars, Turkey sees the consumption of more energy as a precondition for the economic and social development of the country in line with its comprehensive ideology of modernization and progress. Accordingly, there are two main trends that have shaped the energy strategy of Turkey: the rapid increase in the demand for energy and electricity (as presented in **Figure 3.7**), and country's dependence on imported fossil fuel, mainly natural gas, oil, and hard coal, as presented in **Figure 3.8**, leading to a significant deficit in its current account. Currently, around 76 percent of all energy consumed in the country is imported from abroad.

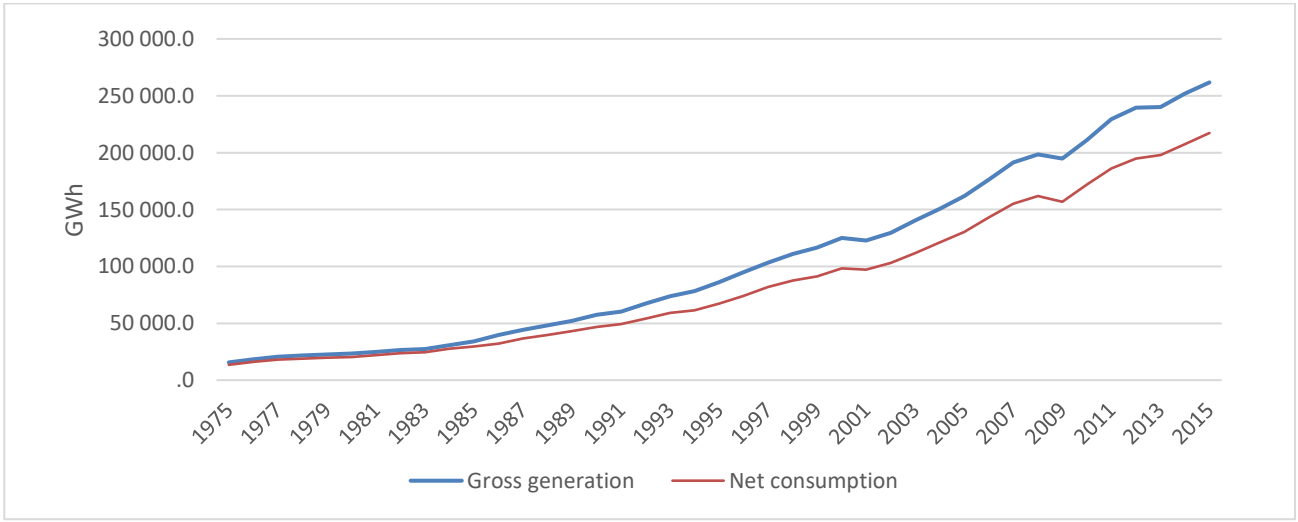


Figure 3-7 Trends in gross generation and net consumption of electricity in Turkey *Source: TURKSTAT*[18]

[18] TURKSTAT, Turkish Statistical Institute, Power Installed of Power Plants, Gross Generation and Net Consumption of Electricity, http://www.turkstat.gov.tr/PreTablo.do?alt_id=1029 [Accessed 13.03.2017]

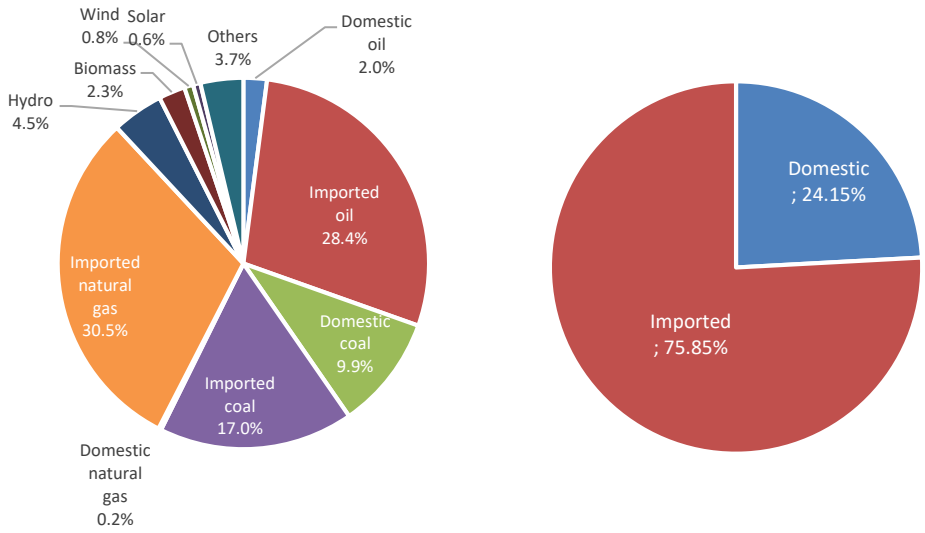


Figure 3-8 Distribution of primary energy supply in Turkey by **a)** resource type, **b)** provision source, in 2015, *Source: TURKSTAT,* [19]

The case for electricity production is similar to the distribution of primary energy supply. As of September 2016, Turkey produces a notable bulk of its electricity from coal and natural gas (as described in **Figure 3.9**), a large share of which is imported into country. As a result, the strategic plans are made in accordance with scenarios projecting an increase in energy demand with increasing rates and matching this demand with domestic resources.

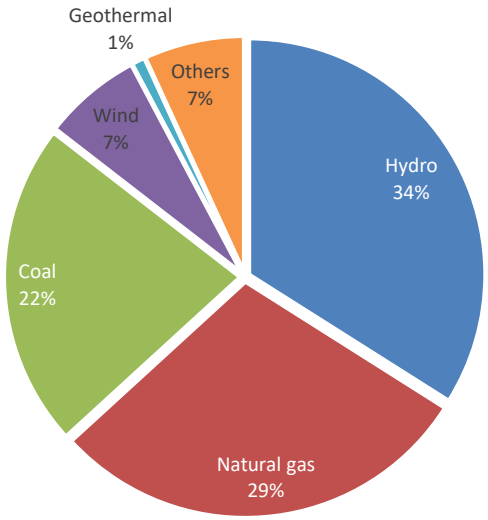


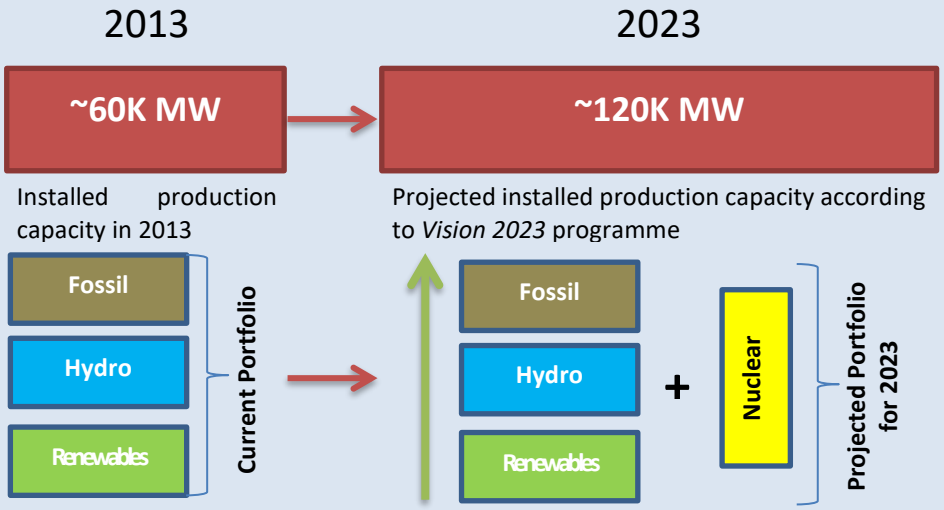
Figure 3-9 The distribution of installed capacity by primary energy resources in September 2016 *Source: MENR*[20]

As part of its development targets for the centennial of the country called "Vision 2023" (as summarised in **Box 3.2**), Turkey wants to enjoy a total installed capacity of 120,000 MW, by relying mostly on domestic

[19] TURKSTAT, Turkish Statistical Institute, Final Energy Consumption by Sectors and Energy Sources http://www.turkstat.gov.tr/PreTablo.do?alt_id=1029 [Accessed 13.03.2017]
[20] MENR, Ministry of Energy and Natural Resources, http://www.enerji.gov.tr/tr-TR/Sayfalar/Elektrik [Accessed 09.03.2017]

potential, where fossil fuels (especially domestic lignite) will be an important contributor, together with nuclear, hydro and renewables. As a matter of fact, the roots of the strategy above date back to the Energy Supply Security Strategy published by the Higher Planning Council Secretariat in 2009[21], at the aftermath of the 2007-2008 global economic crisis. In an attempt to reduce import dependence on energy resources (especially the hydrocarbons), which had a quite significant impact on the country's current account deficit, Turkey adopted a new coal exploration scheme and 2012 was declared as the "Year of Coal", with newfound lignite reserves in different regions.

Box 3.2 Turkey's Vision 2023 plans in detail *(Source: Invest Turkey)*[22]



The country plans to expand its capacity as follows:

- Increasing installed power to 120,000 MW
- Increasing the share of renewables to 30 percent
- Increasing the coal-fired installed capacity from the current level of 15.9 GW to 30 GW
- Maximising the use of hydropower
- Increasing installed capacity of wind power to 20,000 MW
- Consuming/exploiting all domestic resources until 2023, to decrease dependence on imported energy
- Commissioning two nuclear operational power plants (in Akkuyu and Sinop with a total capacity of 9200 MW) with the third under construction

In an effort to boost electricity production, the government has embarked on a big privatisation journey by granting the usage right of the small rivers and coal mines to the private sector for a 49-year period so that private firms could build and operate hydro and coal power plants (Harris & Işlar, 2013). In fact, in an attempt to liberalise and deregulate the national energy sector, publicly owned power plants were rapidly privatised

[21] Higher Planning Council Secretariat (2009) Energy Supply Security Strategy. Available: http://www.enerji.gov.tr/File/?path=ROOT%2F1%2FDocuments%2FBelge%2FArz_Guvenligi_Strateji_Belgesi.pdf [Accessed 09.03.2017]

[22] Energy and Renewables, *Invest Turkey* (Investment Support and Promotion Agency) http://www.invest.gov.tr/en-US/sectors/Pages/Energy.aspx [Accessed 09.03.2017]

throughout the course of a decade, as shown in **Figure 3.10**, where the share of the privately owned installed capacity, once below the publicly owned capacity, constituted almost three quarters of the total capacity in 2015.

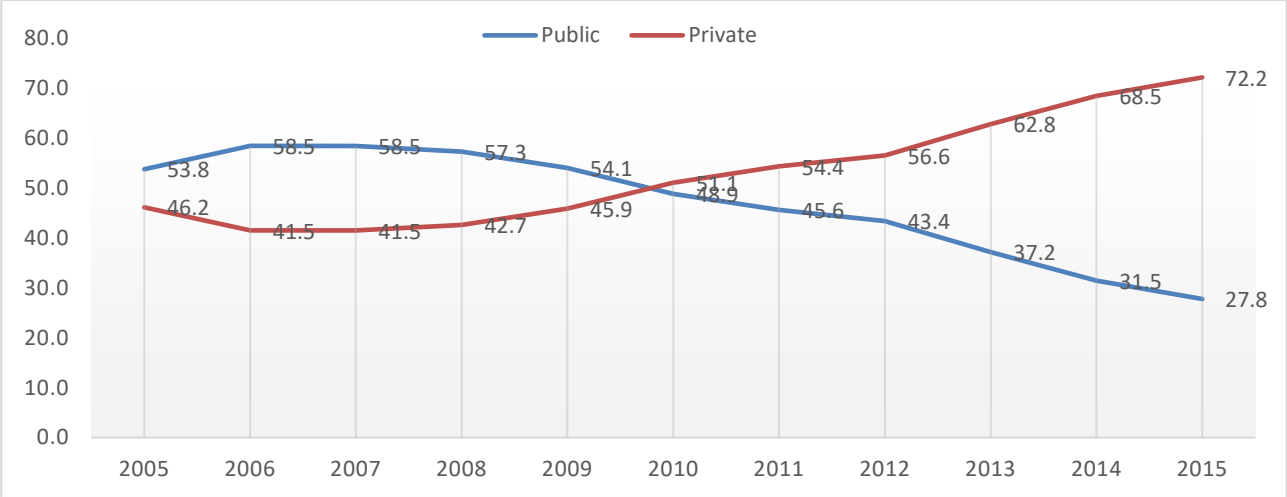


Figure 3-10 The distribution of Turkey's installed capacity by the public and private sectors (2005-2015)
Source: TEIAŞ (Turkey Electricity Transmission Company)[23]

In the case of hydro power, as Işlar (2012) and Harris and Işlar (2013) put forward, such a privatisation model involving the concession of the water rights to private sector generated tension between the private companies and rural communities who relied on the rivers for their livelihood needs. Especially in the northeast and southwest of the country, several small-scale hydro power plants were built on the same small creeks. Furthermore, strong policy tools such as exemption from environmental legislation, highly lucrative subsidy schemes, and treasury guarantees are provided especially for the coal investments. However, such coal investment projects have raised questions regarding profitability, considering the shift in the global outlook of the climate regime after the Paris Agreement, which aims to reduce greenhouse gas emissions substantially in the coming decades. For instance, an amendment to Energy Market Law in June 2016 delivered dispatch priority and a purchase guarantee for the electricity generated by power plants using domestic lignite, mainly aiming to keep power companies that have bought existing state-owned coal-fired power plants solvent and to convince private sector to invest in new lignite power plant projects (Çiftçi, Berke, & Katısöz, 2016).

Another policy tool used by the government is a type of land acquisition in the form of "urgent expropriation" decisions, where private land, necessary for the construction of plants, transportation routes, and transmission lines, is expropriated through a ministerial cabinet decree (Işlar, 2012). Furthermore, legal reforms are established to facilitate the transfer of the user rights of the publicly owned land and property to the private entities involved in electricity generation or distribution (Işlar, 2012). For instance, with many amendments to the legislations such as "Renewable Energy Law" or "Law on Expropriation", several environmental and social barriers to hydropower development were removed, accelerating the implementation of small scale hydropower projects (Scheumann et al., 2014). In many instances, such expropriations meant either the

[23] TEIAŞ (Turkey Electricity Transmission Company), Electricity Generation & Transmission Statistics Of Turkey http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2015/istatistik2015.htm [Accessed 09.03.2017]

destruction of forests in favour of the transmission lines and transportation roads, or the loss of livelihoods of the rural communities living off the land owned privately or rented from the state, or off the commons such as pastures, ponds, or creeks.

Because of this aggressive strategy involving expropriation and enclosure of commons (coupled with the environmental governance problems such as top-down decision mechanism, lack of transparency, and lack of genuine participation, mentioned earlier in the previous section), societal unrest against the electricity plants at local scale escalated even further, creating numerous local environmental justice conflicts all over the country. The mobilisations against the electricity generations projects can be summarised under four subheadings, each described as follows:

Coal and fossil fuel related conflicts

As part of its target to reduce imported energy, described in the 2009 Energy Supply Security Strategy, coal-fired power plants running on domestic lignite were identified as one of the main tenets of country's energy policy. Consequently, as mentioned in the previous section, 2012 was declared "*The Year of Coal*" with a following wave of license applications for coal power projects. There are now many announced and planned power plants, on top of the ones already under construction and operating. Due to the problems of transparency and data availability, it is difficult to keep track of all projects on a daily basis, as several official and non-official sources present different and inconsistent figures and numbers. According to CAN Europe (2015), there are 75 projects on the pipeline, with an additional capacity of around 45 GW (which is much higher than the Vision 2023 targets), either in the pre-permit development phase, or announced. These projects, many of which may actually never be completed, are presented in **Figure 3.11,** together with the operating plants.

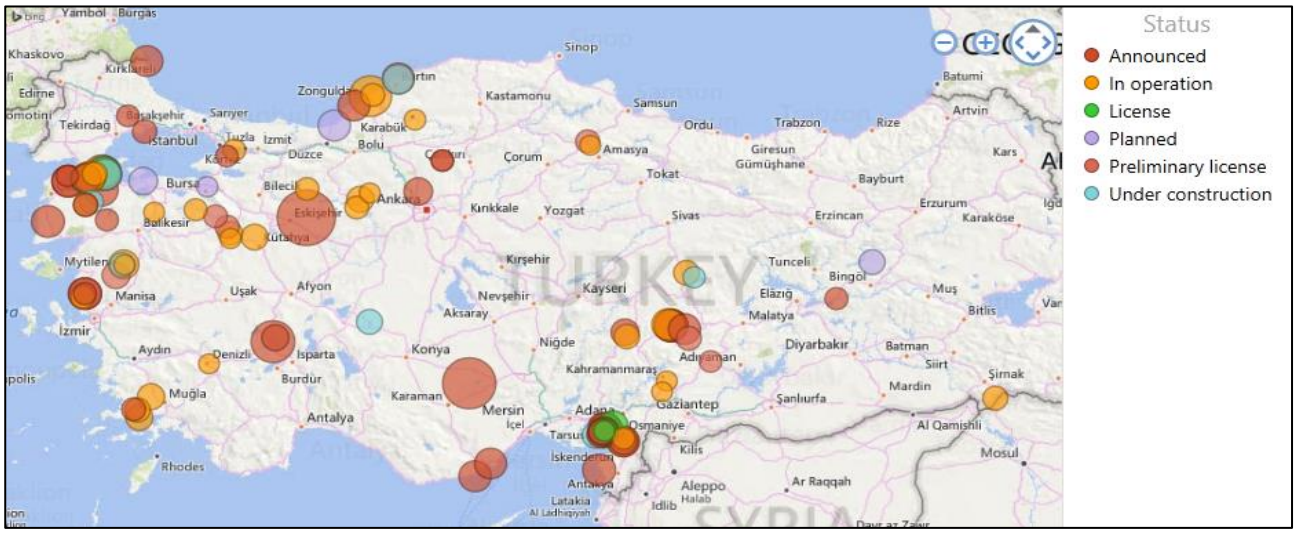


Figure 3-11 Planned and operating coal power plants in Turkey (*Source: own elaboration, using data provided by TEMA Foundation*[24])

As stated in the Coal Sector Report of the Turkish Coal Enterprises in 2015 (TKI, 2016, p. 46), "the lignite reserves are largely low quality" and "the existing reserves do not have the proper characteristics for

[24] Personal communication with TEMA The Turkish Foundation for Combating Soil Erosion, For Reforestation and the Protection of Natural Habitats on 10 March 2017.

enrichment", posing a problem for the problem for the profitability of domestic coal plants. Therefore, especially due to the import substitution strategy of the recent years, stronger and bigger incentive mechanisms were created for promoting domestic coal projects. However, these projects could still not attract investors' attention enough due to economic and technical inconveniences. Despite all the efforts, since 2009, only two percent of the new electricity production capacity connected to the grid has been generated by the domestic coal plants, while the same figure from the imported coal plants is seven times higher (Çiftçi et al., 2016). Therefore, it is not possible to conclude that such strategies resulted in a decrease in the import dependency of the country (Turhan, 2015).

Turkey's aim to develop a coal power plant capacity to produce electricity ignited several local environmental justice conflicts in many regions, regardless of whether the plant burns domestic lignite or imported hard coal. Some of these conflicts, where local people and/or national civil society fight together against these new constructions, is visualised on **Figure 3.12**, as reported in the Turkish Map of Environmental Justice as of August 2016:

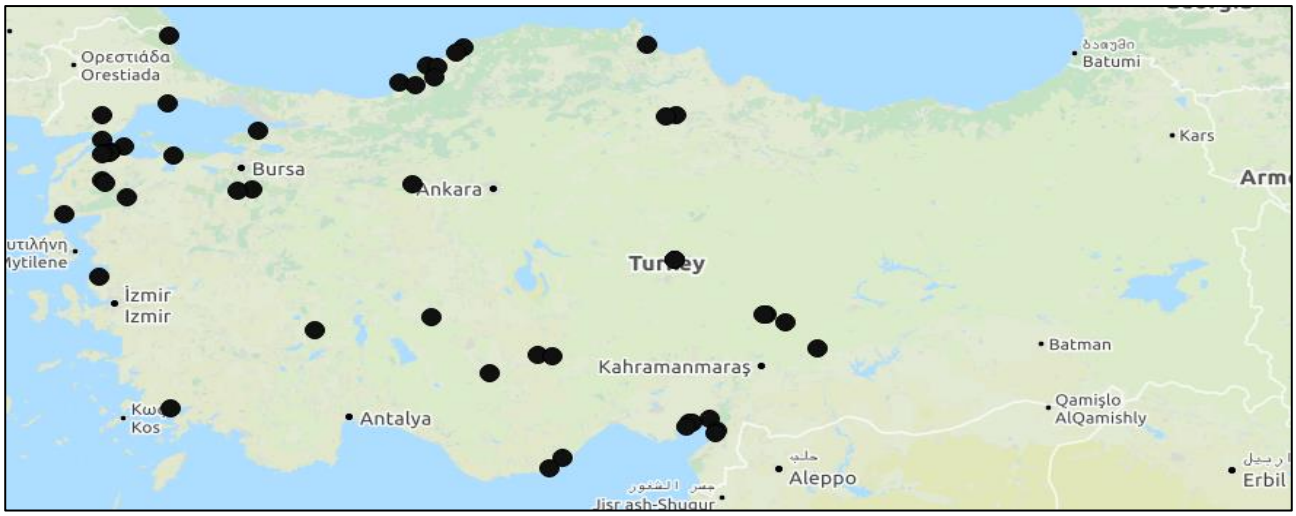


Figure 3-12 Environmental conflicts against the coal power plants, Turkish Map of Environmental Justice, August 2016

While some of the struggles reported on the **Figure 3.12** are against the plants in operation, many of them are against the planned and announced plants. There are several reasons why local communities and national civil society are mobilising against these projects. Many local and national health professionals are openly against these coal power plants due to the severe health impacts and respiratory diseases they cause (Pala, 2014). National and international NGOs mobilise primarily using arguments involving the CO2 emissions and the effect on the climate change (CAN Europe, 2015), because their tax money is used to subsidise heavily this soon-to-be-obsolete technology (Çiftçi et al., 2016), or because the coal mines would destroy the fertile agricultural land (Katısöz, 2015). Villagers in Yırca, a small village in the Aegean region, are against these projects because around six thousands of their precious olive trees (on land rented from the state) were cut down overnight, by a coal power plant investor company (Turhan, 2015).

Hydropower related conflicts:

As mentioned earlier, the national target of utilizing all of the hydro potential in the country led to the construction of many small-scale hydro power plants (HPP) on small rivers and creeks all over the country,

and especially in the northeast and southwest of Turkey. In fact, Turkey relied heavily on hydropower for decades beginning from the late 1950s, where "State Hydraulic Works" was carrying out the constructions of rather big dams with large reservoirs, which were built with the aim of promoting technical and economic development in the country (Erensü, Evren, & Aksu, 2016). However, beginning with the late 1990s and early 2000s, following the neoliberal transformation that the country was going through, private investment for small HPPs was promoted (Adaman, Akbulut, & Arsel, 2016; Işlar, 2012; Scheumann et al., 2014). In order to attract private investment, a set of aggressive policy tools such as the transfer of water user rights to private companies for almost half a century (49 years), electricity purchase guarantee schemes, and exemption from the environmental legislation were implemented (Harris & Işlar, 2013; Işlar, 2012; Scheumann et al., 2014). As a result, a boom in the number of small scale HPPs was observed beginning from the second half of 2000s. An official number of the total HPP projects, however, is hard to get due to transparency problems, but several sources provide numbers between 1500 and 2000 (Adaman et al., 2016). According to *Enerji Atlası* (Energy Atlas), currently 595 HPPs are in operation, with 395 of them having installed capacity below 20 MW and 288 below 10 MW. **Figure 3.13** attempts to visualise the operating small HPPs with capacity below 10 MW. It is possible to see the high concentration of HPPs especially in the northeast and south of the country.

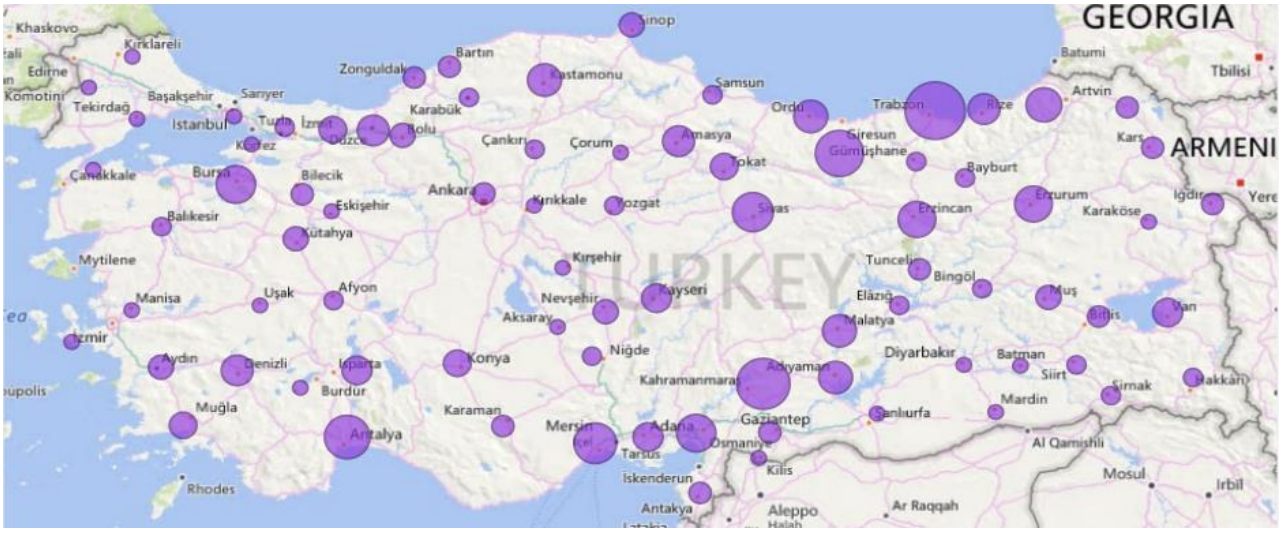


Figure 3.13.a: Distribution of the number of HPPs below 10 MW in operation, in the cities

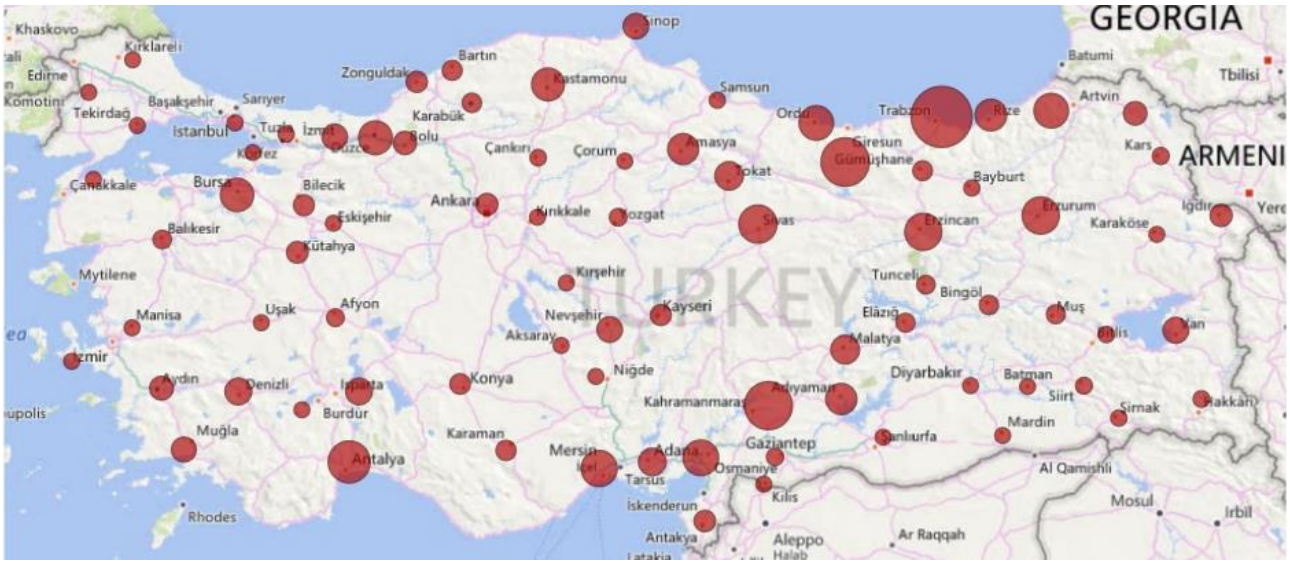


Figure 3.13.b: Distribution of total capacity of HPPs below 10 MW in operation, in the cities

Figure 3-13 Distribution of the number and total capacity of HPPs
Source: Own elaboration using data from Enerji Atlasi[25]

Many of these HPPs are run-of-river type plants, which are claimed to be more environmentally friendly than the reservoir type HPPs, allowing the investments to be framed as clean renewable energy and therefore making them eligible for international development finance (Adaman et al., 2016; Işlar, 2012). Thanks to this framing, Turkey was able to receive the first-ever loan from the Clean Technology Fund (CTF – a low interest loan scheme designed to fund developing countries' transitions to low-carbon economies) of the World Bank, amounting to USD600 million (Işlar, 2012).

However, even though these projects were labelled as clean by the national and international investors, they nevertheless brought along severe environmental and social problems. In run-of-river projects, pipes are used for diverting the water from the riverbed from upstream into the generation facility at the downstream, thus affecting the fish migration routes by blocking the link between the downstream and upstream of the river and hence having severe impacts on the river ecosystem (Şekercioğlu et al., 2011). Furthermore, as a form of water grabbing, the water diverted into pipes was no longer accessible to the nearby communities who depended on the rivers for small scale fisheries and subsistence farming (Işlar, 2012). As a result, local resistance movements appeared in many of such HPP projects, some of which are presented in **Figure 3.14**, as reported in the Turkish Map of Environmental Justice.

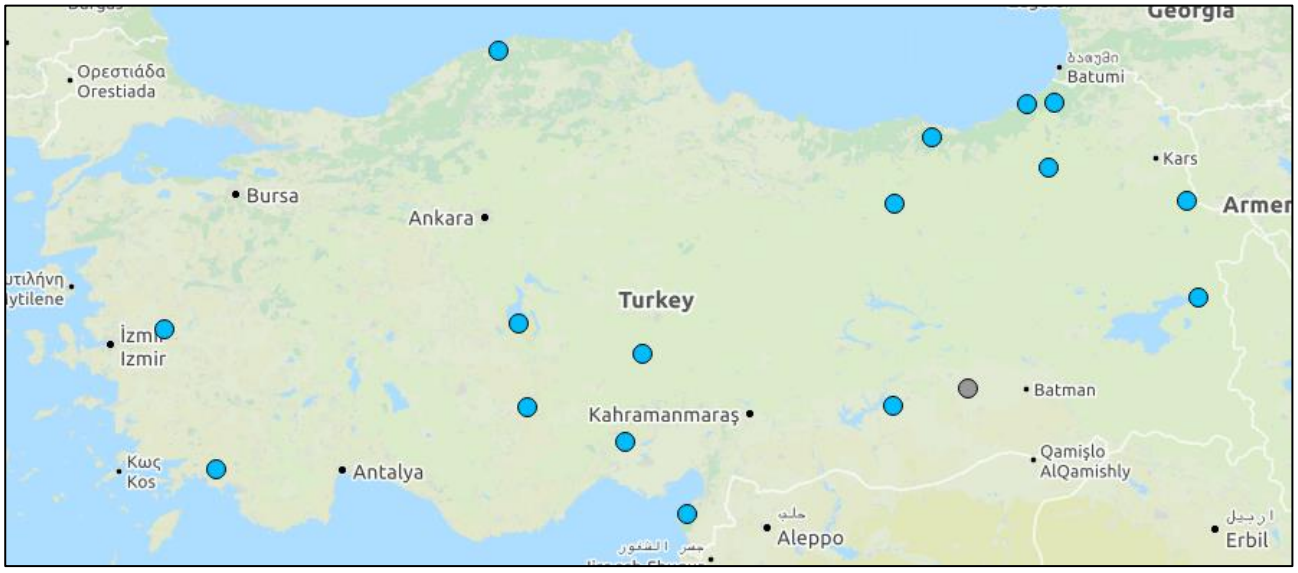


Figure 3-14 Environmental conflicts against the HPPs, *Turkish Map of Environmental Justice, August 2016*

Renewable energy related conflicts:

Despite Turkey's appetite for domestic coal and hydro, the renewable energy investments has also had a notable share in the newly installed capacity in the recent years. For instance, in 2015, new wind instalments

[25] Enerji Atlası, Türkiye'deki hidroelektrik santralleri (Hydropower plants in Turkey) http://www.enerjiatlasi.com/hidroelektrik/ [Accessed 09.03.2017]

alone constituted 19.38 percent of the total new instalments of 4287 MW (**Figure 3.15.a**). Together with the solar, geothermal and biomass, the total share of newly installed renewables accounted for 25.64 percent, surpassing the share of newly installed thermal (i.e. coal and natural gas). Similarly, in 2016, the total share of newly installed renewable capacity was 26.76 percent of the 5898 MW of total new capacity (**Figure 3.15.b**).

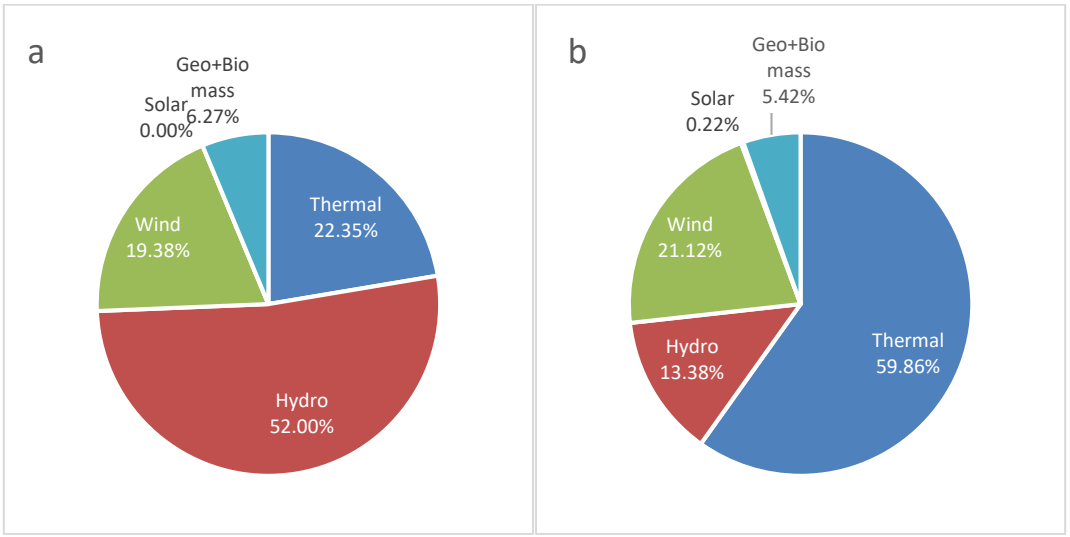


Figure 3-15 Newly installed electricity generation capacity a) in 2015, b) 2016 *Source: MENR*[26]

These figures clearly show that Turkey's ambitious electricity production goals also apply for renewable energy, and it is not without conflicts either. Despite being labelled as climate friendly and clean, renewables too have been subject to environmental justice conflicts in Turkey. Four of these conflicts (three against wind farms, one against geothermal) are presented in **Figure 3.16**, as reported in the Turkish Map of Environmental Justice.

Figure 3-16 Environmental conflicts against renewables,
Turkish Map of Environmental Justice, August 2016

One of the most emblematic conflicts against the renewable energy is the mobilisation of the local communities

[26] Ministry of Energy and Natural Resources, http://www.enerji.gov.tr/tr-TR/EIGM-Raporlari [Accessed 15.03.2017]

in Karaburun in Izmir, against a wind farm project with a capacity of 120 MW, which involved the removal of around 2000 olive trees from a zone designated officially as an olive grove by the Ministry of Food, Agriculture and Livestock. Locals protested heavily since the construction of the wind turbines, roads and transmission lines destroyed a great area of olive groves (partly on publicly owned land) and of already scarce pasturelands, affecting the livelihoods of the nearby villagers (Altıok Akatlı, 2015), creating an ecological distribution problem.

However, apart from the mal-distribution of the environmental impacts, the local communities also raise issues of recognition and genuine participation. The process of "informing the public" meeting, which is part of the environmental impact assessment report, was protested and criticised by the local community, as follows:

> It is clear that this "informing the public" meeting, which is planned to last only about an hour, about a project that will directly affect the rich nature and human life here, is nothing but an attempt to cover up the plunder over the nature and a formality for completing the necessary paperwork. (Karaburun Kent Konseyi, 2013)

In fact, such conflicts against even renewable energy illustrates well how the top-down decision making mechanisms in Turkey, where (as mentioned in previous section) regulations such as environmental impact assessment are seen as formalities, are a source of conflict in and of themselves, especially when coupled with the neoliberal policies such as land expropriation and privatisation.

Nuclear energy related conflicts:

Turkey's "Vision 2023" energy strategy also involves the construction of three nuclear power plants (NPPs) in different regions of the country, namely in Akkuyu, Sinop and Iğneada. In fact, the interest in nuclear power is not new, as Turkey has had rudimentary plans to build a nuclear plant for almost six decades now. The primary argument in favour of the construction of the NPPs is that the country needs nuclear energy for its economic growth, and more importantly, the plants mark a milestone in Turkey's modernisation aspirations and they are seen as a source of high prestige. However, national and local opposition has also been there from the beginning, as old as the initial plans. Having experienced the catastrophic effects of the Chernobyl disaster, Turkey has a very active anti-nuclear movement.

Although Turkey does not have an operating nuclear power plant yet, it already has a waste disposal conflict in Gaziemir in the Aegean region, and two uranium mining conflicts, one in Yozgat (in Mid-Anatolia) and the other in Manisa, again in Aegean region. These conflicts, along with the three nuclear power plants, are presented in **Figure 3.17**, as reported in the Turkish Map of Environmental Justice.

Figure 3-17 Environmental conflicts against nuclear energy, *Turkish Map of Environmental Justice, August 2016*

Since construction of a nuclear power plant is not an easy task due to the large scale of the operation and requirement of high-level technical knowledge, the attempts for finding a private company to build and operate the plant failed several times. Turkish governments attempted to find an international investor at least four times and organised open tenders, which failed due to different economic, political and legal reasons (Şahin, 2011). For instance, the last tender in 2009 had only one bid from Rosatom (from Russia) despite all the efforts to invite other nuclear giants in the world (Aydın, 2014).

After recognising that neo-liberal methods would not work in the case of nuclear plants, the Turkish government took an opposite route, in 2010, after the last failed attempt. Two inter-governmental agreements were signed for Akkuyu (in 2010) and Sinop (in 2013), with Russia and Japan, respectively. These agreements, immune to national legislative procedures, were made through the most non-transparent and non-participative fashion, excluding all local and national stakeholders (Aydın, 2014). The detailed account for the history of the nuclear power plants in Turkey is provided in **Chapter 4**.

d) Identifying cross scale interactions in Turkey's energy related conflicts.

> "Yes, it is true that wind turbines produce renewable and clean energy. But, is it fair to make the people of the peninsula and species of the region, that is, the nature and the life itself, pay for the toll of the reduction of carbon dioxide/greenhouse emissions?" (Karaburun Kent Konseyi, 2013)

The quote above, from a press release by Karaburun City Council, against the wind farm project illustrates well how the "local", "national" and "global" scales are interconnected. It goes to show how a national action to achieve a global goal (aiming to prevent climate change, which is a global ecological distribution problem) may affect local processes and create yet another ecological distribution problem. Hence, investigating the linkages between the scales where the decisions are made and actions are taken or where effects are felt might be useful in understanding the dynamics of the ecological conflicts illustrated above. Of course, such examples of conflicts stemming from cross-scale interactions are not limited to the energy related conflicts, and many other examples can be found; however, this section focuses on the energy conflicts in particular.

In the case of Turkey, the ambition for national economic growth forms the basis of its aggressive energy policy that relies on several electricity generation projects that create environmental and social problems at local scale. Yet, the national ambition for the development of domestic coal fired power plants aggravates the problem of climate change at global level, and negatively affects the country's participation in the international climate policy (Turhan, Cerit Mazlum, Şahin, Şorman, & Cem Gündoğan, 2016).

In Turkey, energy policy is shaped in the national development plans (designed by the central government), which are then reflected onto the environmental and spatial plans that are hierarchical in their implementation (i.e. local plans should conform to national plans). The final reflection of the national policy is seen in the regional distribution of the particular projects. In order to understand the relationship between the national and local scales, it is useful to examine the spatial distribution of the energy projects and related ecological distribution conflicts. **Figure 3.18** exhibits the distribution of energy related conflicts in Turkey according to the population type, as reported in Turkish Map of Environmental Justice. It is seen that, the majority of the energy related conflicts (58 percent) takes place in the rural settings, inhabited by local communities. These local communities are the ones that are most affected by the negative environmental impacts of electricity generation projects – outcomes of an energy policy decided at the national scale.

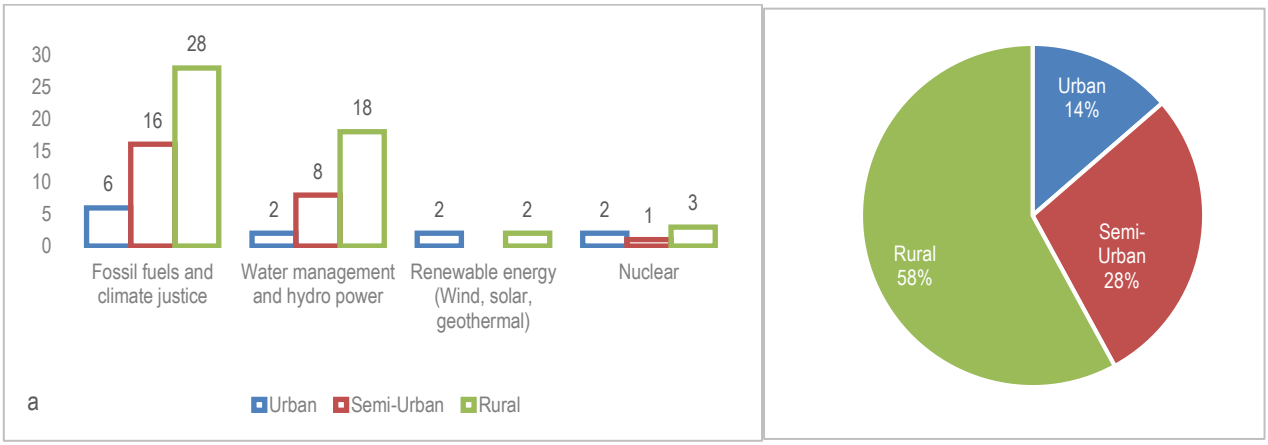


Figure 3-18 Distribution of energy related conflicts in Turkey according to the population type a) by the category of conflict, b) total energy related conflicts. *Source: Turkish Map of Environmental Justice, August 2016*

Moreover, while electricity generation in Turkey is mostly carried out at the rural setting, electricity is consumed mostly in the urban setting, where both the household and industrial consumption levels are higher. This pattern can be spotted by comparing the regional distribution of electricity generation and consumption in Turkey. **Figures 3.19.a** and **19.b** compare the cities in Turkey in terms of the total electricity produced, as opposed to the total electricity consumed in that city, respectively. It is possible to see that while electricity generation capacity is concentrated in some cities – Izmir, Adana, Zonguldak, Samsun to name a few – and the produced electricity is mostly consumed in the urbanised and industrialised cities of the country, more particularly in Istanbul and its surroundings, Ankara, and Izmir.

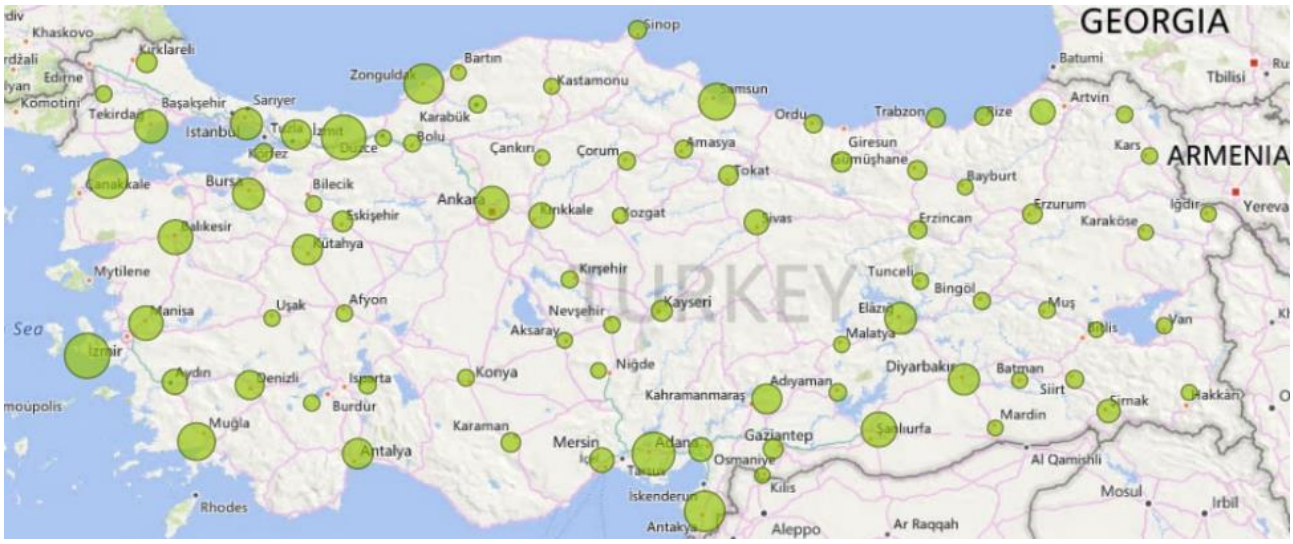


Figure 3.19.a: Distribution of electricity generation in cities in 2016 (GWh) *Source: Own elaboration using data from Enerji Atlası*[27]

Figure 3.19.b: Distribution of electricity consumption in cities in 2015 (GWh) *Source: Own elaboration using data from TURKSTAT*[28]

Figure 3-19 Distribution of electricity generation and consumption in the cities

In support of the above figures, **Figure 3.20** presents in more detail top ten cities with the highest electricity generation levels and the other top ten cities with the highest electricity consumption levels. As can be seen, the total electricity consumption in Istanbul is more than twofold of its closest follower, Izmir. In addition, except Izmir and Hatay, none of the top consumer cities (which are the bigger urban and industrial centres) is in the top ten of the producer cities (which are mostly known for agricultural production and/or tourism).

[27] Installed capacities and electricity generation statistics of the cities (Şehirlerin Elektrik Santrali Kurulu Güçleri ile Üretim ve Tüketim Bilgileri) *Enerji Atlası (Energy Atlas)* http://www.enerjiatlasi.com/sehir/ [Accessed 09.03.2017]

[28] TURKSTAT, Turkish Statistical Institute, Regional Statistics, Energy https://biruni.tuik.gov.tr/bolgeselistatistik/anaSayfa.do?dil=en [Accessed 09.03.2017]

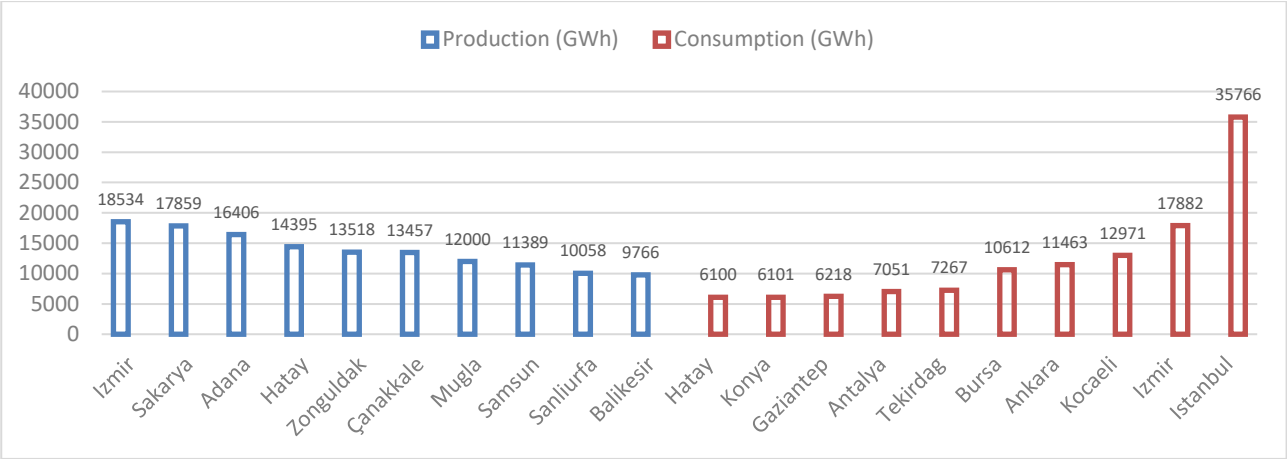


Figure 3-20 Top ten cities in Turkey producing and consuming electricity *Source: TURKSTAT*[29]

In fact, **Figures 3.19** and **3.20** illustrate well how Turkey prioritises economic growth (and thus industrialisation) over ecological distribution. Higher energy consumption is considered to be a necessity for the economic and social development, and inarguably for the overarching goal of modernisation, which in turn is equated with industrialisation and urbanisation (Arsel et al., 2015). At this point, it is important to understand the crucial role that Istanbul plays in the modernisation journey of the country. As Akpinar and Paker Kahvecioğlu (2007) point out, Istanbul is both the actor and the stage for the transformation of the country's integration into the globalised world and hence Turkey's national identity and image of modernisation and industrialisation is embodied in the city. In order to satisfy the high electricity demand from Istanbul, a *megapol* considered to be a global city by many (Akpinar & Paker Kahvecioğlu, 2007), the central government has made substantial efforts to build new and larger power plants. Especially the cities near Istanbul, such as Çanakkale and Zonguldak are already home to many coal fired power plants, with many others on the pipeline, as shown in **Figure 3.21**. In Çanakkale, for instance, four coal power plants are already in operation (total capacity of 3125 MW), two power plants are under construction (total capacity of 1650 MW), and twelve power plants are either planned or announced (total expected capacity of 14885 MW).

The electricity generated in these cities is easier to transmit to Istanbul, Kocaeli, Tekirdağ, or Bursa, that is, the industrialised centres. Considering that the industry and services sectors based in Istanbul and nearby cities are the engine of growth in the country, it would not be wrong to say that some cities such as Çanakkale and Zonguldak are designated as "ecological sacrifice zones" for the sake of national growth. These cities share the same fate with other cities, such as Adana (1650 MW in operation, 13200 MW on the pipeline) and Kahramanmaraş (2795 MW in operation, 5800 MW on the pipeline).Even though many of the planned and announced projects on the pipeline will never materialise, the rumours alone are enough to create discontent among the local communities.

[29] TURKSTAT, Turkish Statistical Institute, Regional Statistics, Energy https://biruni.tuik.gov.tr/bolgeselistatistik/anaSayfa.do?dil=en [Accessed 09.03.2017]

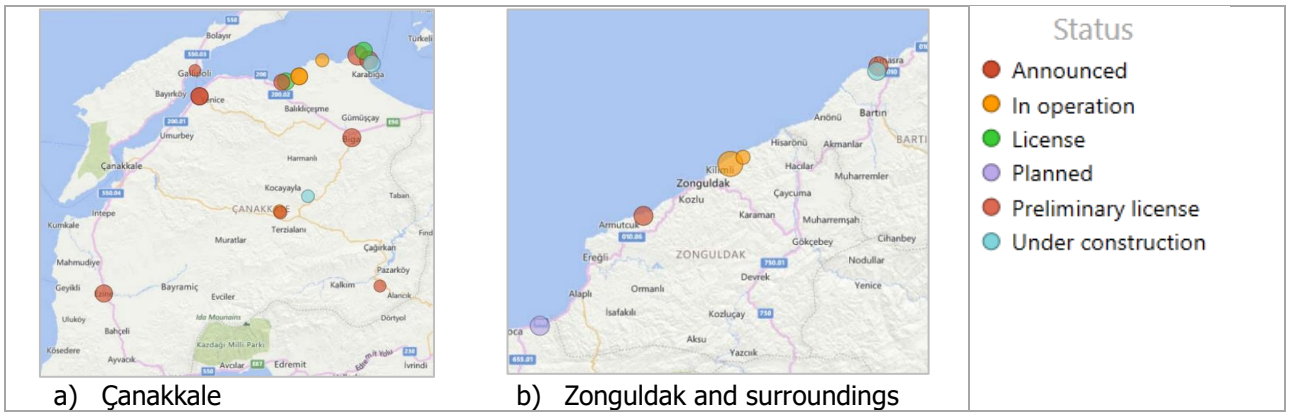


Figure 3-21 The coal power plants in **a)** Çanakkale and **b)** Zonguldak and surroundings (*Source: own elaboration, using data provided by TEMA Foundation*

The ambition of the country towards a complete exploitation of the domestic coal resources has a significant impact on the trends of greenhouse gas emissions, too. As shown in **Figure 3.22.a**, the greenhouse gas emissions trajectory of Turkey has had a rather consistent rise since 1990s, reaching 475.1 MtCO2eq in 2015. In this period, emissions related to the energy sector always had the greatest share and was the primary driver of the total emissions, while the emissions from the industry, agriculture, and waste sectors were rather stable compared to energy sector. In 2015, the energy sector was responsible for the 71.6 percent of the total emissions, displayed in **Figure 3.22.b**.

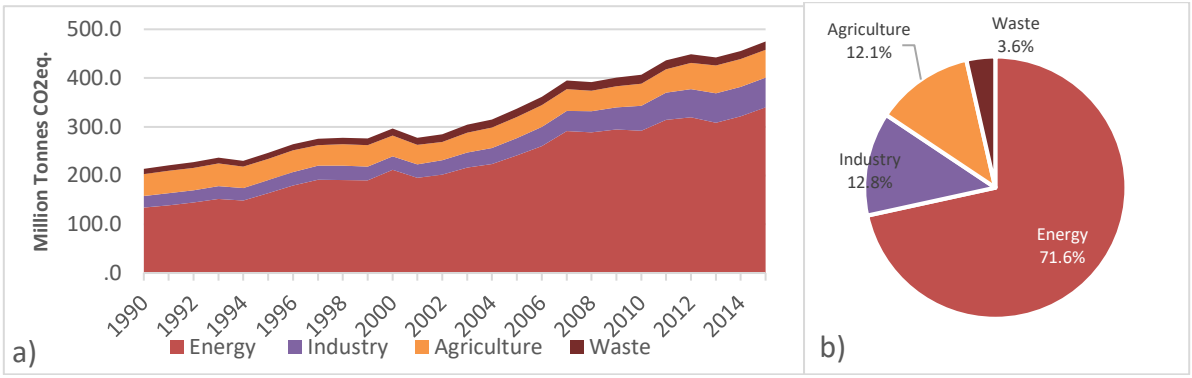


Figure 3-22 GHG emissions by sectors, *Source: TURKSTAT*[30]

The appetite for the economic and social development has also influenced the international climate policy of Turkey. As Turhan et al. (2016) put forward, Turkey is a laggard country in the global effort of mitigating climate change and resorts to a rather defensive stance due to the clash between environmental protection and economic development, which caused a significant delay on the way of it becoming a party to the UNFCCC (United Nations Framework Convention on Climate Change). This was mainly because of Turkey's classification in the Annex-I of the Convention together with the developed countries, due to Turkey's membership in OECD, asking Turkey to commit to mitigation targets and contribute to finance mechanisms (Turhan et al., 2016). Because of the concerns over economic development, Turkey's climate policy focused on a quest for differentiation with respect to the obligations. Hence, Turkey did not become a party until 2004, even though its "special circumstances" were formally recognised in 2001. Accordingly, although Turkey is still listed in

[30] TURKSTAT, Turkish Statistical Institute, Statistics by Theme, Environment Statistics, GHG emissions by sector. http://www.turkstat.gov.tr/PreTablo.do?alt_id=1019 [Accessed 17.04.2017]. (Note: The emissions and sinks from forestry and other land use are not included).

Annex I among developed countries (which is a matter of prestige (Erdi Lelandais, 2015)), it has no obligation for mitigation or financial contribution; however, it cannot benefit from the financial support offered to the developing countries in Annex II, either.

Turkey's foot dragging and reservations about the international climate policy are the result of its objective of catching up with the West (and hence being in the same league with the western countries, as exemplified by Turkey's membership in OECD), resulting in a prioritisation of economic growth (Turhan et al., 2016). On its path to development, concerns about environment and climate change were seen as obstacles and were mostly neglected when they clashed with economic priorities (Turhan et al., 2016). As Erdi Lelandais (2015) states, Turkey's so-called commitment to environmental and climate policy was there only as a matter of raising the country's prestige at the international arena.

Turkey's lack of commitment to climate policy is visible in its Intended Nationally Determined Contribution (INDC) document presented to the UNFCCC secretariat before the 21st Conference of Parties (COP21) in Paris in 2015. According to this document, by 2030, Turkey intends to have decreased its emissions by up to 21 percent compared to the reference scenario, as described in **Figure 3.23**. According to this document, under the business as usual (the reference) scenario, Turkey would emit 1,175 MtCO2eq of greenhouse gases, which is almost 2.5 times higher than the country's 2015 emission of 475.1 MtCO2eq. The mitigation scenario targets an emission level of 929 MtCO2eq (which means almost 100 percent increase with respect to 2015 levels), which is 21 percent lower than the reference scenario. Furthermore, while the average yearly increase rate in the emission levels between 1990 and 2014 is 3.24 percent, the projected average yearly increase rate under the mitigation scenario is 4.38 percent, which means that Turkey actually commits to increasing its emissions in the following years, faster than its historical record between 1990 and 2014.

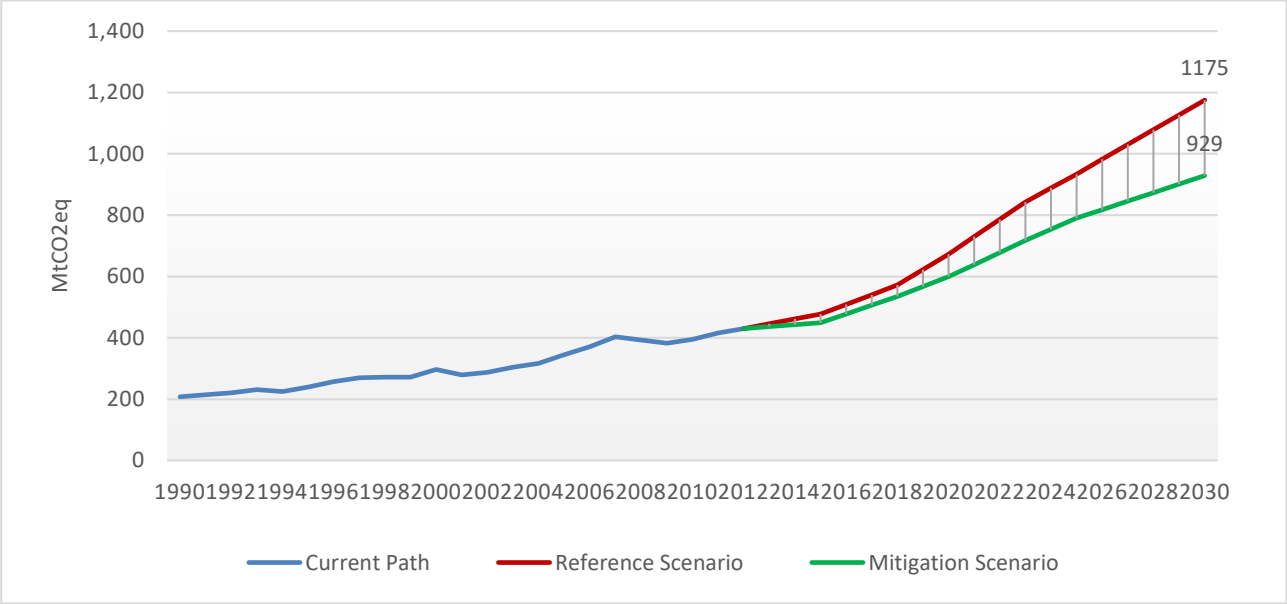


Figure 3-23 Turkey's proposed emission reduction targets according to its INDC *Source: UNFCCC*[31]

[31] Republic of Turkey, Intended Nationally Determined Contribution. http://www4.unfccc.int/submissions/INDC/Published%20Documents/Turkey/1/The_INDC_of_TURKEY_v.15.19.30.pdf [Accessed 17.03.2017]

The INDC document aptly illustrates Turkey's (in)ambition for contributing to the international efforts for abating the impacts of climate change, while also clearly showing the country's commitment to the expansion of the coal-fired power plant fleet. There is clearly a conflict of interest between the global goal of combatting climate change and Turkey's targeted national economic growth. National goals are prioritised once again, this time having an adverse environmental impact at global scale.

Hence, it is evident that in the case of an incompatibility, national objectives are prioritised over both local and global objectives, particularly when energy policy is concerned. From national to local scales, national priorities, coupled with the hierarchical implementation mechanisms of the spatial plans and the top-down decision-making tradition, create a substantial number of conflicts against coal power plants, hydropower developments, and even against renewable energy projects. Meanwhile, from national to global, national priorities prevent the country from partaking a bigger and more substantial role in the international climate policy and impair the global effort to mitigate the negative impacts of climate change. As a result, conflicts arise at different scales. There is need for a governance mechanism capable of exposing the linkages between different scales in a transparent manner, which will eventually become useful in alleviating the abovementioned conflicts.

Chapter 4: A real world example: Nuclear energy in the world and in Turkey

Turkey does not have any nuclear power plants to date, but it interestingly has a long and complicated history concerning nuclear energy. For the last six decades, Turkish governments, regardless of their ideological inclinations, have been advocating the construction a nuclear power plant on the grounds that it is necessary for the development of the country, in particular for energy independence and technological advancement. To this end, in 1970s, a small bay on the eastern Mediterranean coast, Akkuyu, was selected for the construction of Turkey's first NPP. However, the first attempts in late 1970s provoked an immediate reaction from the civil society, giving rise to a long-standing conflict that is yet to be settled.

In order to better understand Turkey's previous and current motivations to build a nuclear power plant and hence the background of this conflict, this chapter will first look at the historical development of nuclear power in the world and present the recent trends. Then, it will focus on the particular case of Turkey, by first recounting its history of nuclear power, and then laying out the current debate on nuclear energy.

a) Nuclear energy in the world: Past, present, and future

After the World War II, in the 1950s and 1960s, the commercial nuclear energy was developed, and was lauded as a miraculous and limitless way of creating energy, which would be able to meet all the future demands in the world. This was followed by a rapid growth in the nuclear industry in the 1960s and 1970s (Brunnengräber & Schreurs, 2015). According to the International Atomic Energy Agency (IAEA, 2017), at the end of 2015, there were 449 operational reactors in the world, distributed in 30 countries, with a total net electricity capacity of 392.23 GW, and 60 reactors with a total capacity of 60.2 GW in the pipeline. The map in **Figure 4.1** provides a global overview of the status of all reactors in the world including those in operation, those taken off the grid, those shut down, and those under construction as of early 2016 (Evans & Pearce, 2016).

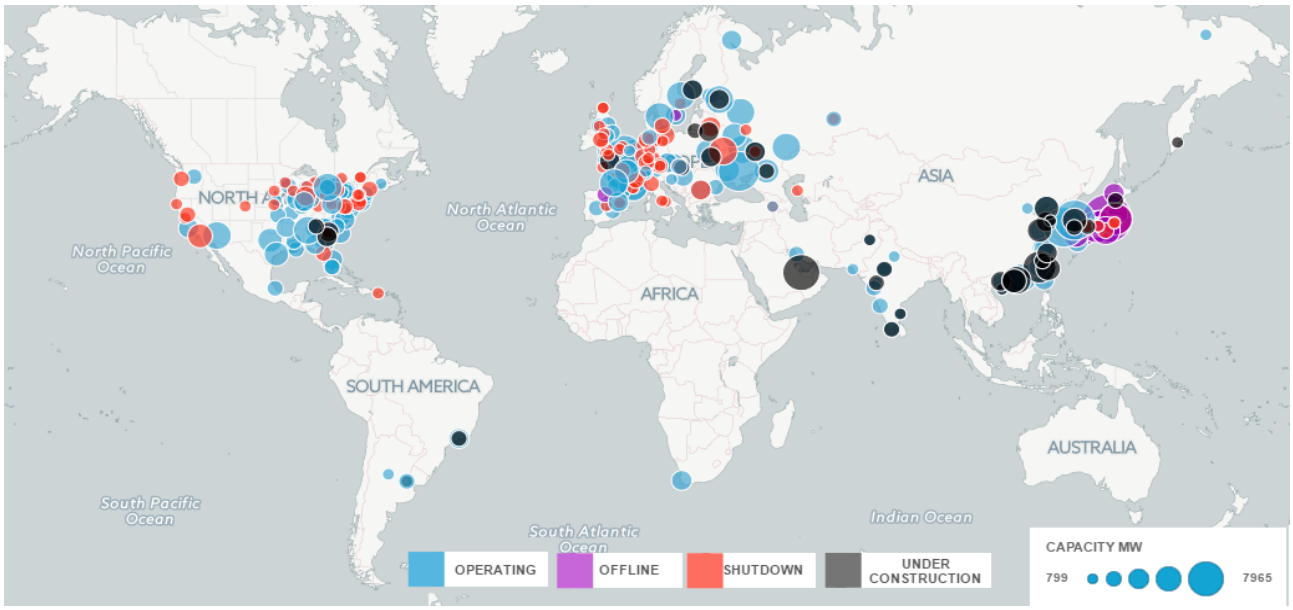


Figure 4-1 The world's nuclear power plants *Source:* (Evans & Pearce, 2016)

As can be noticed in **Figure 4.1**, the majority of nuclear reactors are located in the western and former Soviet countries, while new constructions are concentrated mostly in China and India. With 99 reactors, USA has the largest fleet of nuclear power, followed by France (58 reactors), Japan (42 reactors), China (37 reactors) and Russia (35 reactors) (IAEA, 2017). Below is a brief summary of how the civil nuclear programme expanded around the world and reached its current status over the years:

Early years – 1940s and 1950s

The first attempts to harness the large amount of energy released by the splitting of the atom (i.e. nuclear fission) did not aim towards peaceful and commercial purposes of electricity production, but towards building a powerful bomb that would help to win wars. The early experiments for the nuclear fission were conducted in late 1930s and two German physicists, Otto Hahn and Fritz Strassman, successfully split the uranium atom and released energy in 1938, by bombarding it with neutrons (Chater, 2005). They also found out that the fission released not only energy, but also additional neutrons, which could initiate a fission reaction in other uranium atoms: a chain reaction leading to an even greater release of energy (WNA, 2017). Although Hahn and Strassman's experiment was successful, it was not enough for building a nuclear bomb since it was not yet possible to achieve a chain reaction. With the onset of the Second World War, the UK, Germany, and the USA raced to build the first nuclear bomb. In 1942, President Roosevelt, warned by Albert Einstein that Germany would soon build the first atomic bomb, launched a massive research program, called the Manhattan Project (Chater, 2005).

The Manhattan Project is considered one of the most noteworthy scientific projects of the twentieth century. A large international team of experts lead by the Robert Oppenheimer collaborated with the US military to build a nuclear bomb before Germany (Chater, 2005; Scurlock, 2007). The first experimental nuclear reactor was constructed in late 1942 in Chicago, and shortly after, the first nuclear bomb was built and tested in Los Alamos, New Mexico (Chater, 2005; Scurlock, 2007). Several sites were set up in USA to enrich uranium and

produce plutonium[32]. All these efforts resulted in the subsequent development of two atomic bombs, dropped in Hiroshima and Nagasaki in 1945 (Chater, 2005).

Earliest nuclear reactors were designed to produce plutonium for atomic bombs, and they were simply comprised of graphite piles. Uranium was loaded into these piles and was transformed into plutonium, which was more readily fissionable, facilitating the functioning of an atomic bomb (Scurlock, 2007; WNA, 2017).

It was not until 1951 that nuclear power was used to produce electricity; the first was when a small experimental reactor in Idaho, USA, named EBR-1, produced a small amount of electricity (Scurlock, 2007). The use of nuclear power was still mostly limited to military applications, in particular, nuclear submarines[33] and aircraft carriers, since these were prioritized for being strategically more important; and hence the amount of electricity generation in the 1950sremained negligible. Yet, the pressurised water reactors developed for military applications were to become the most widely used reactor types for electricity generation in the following years in the US (Chater, 2005). Meanwhile, the Soviet Union, France, the UK, and Canada had their own nuclear programs and they were developing different types of reactors to produce plutonium.

In 1953, USA President Eisenhower addressed the United Nations and launched the "Atoms for Peace" programme, calling for international cooperation for the development of nuclear technology for peaceful purposes, mainly for electricity production (Chater, 2005). Meanwhile, some countries had already made some efforts to develop nuclear energy programs out of weapons programs. For instance, Soviet Union adjusted their existing graphite-moderated channel-type reactors (which were designed initially for plutonium production) to suit heat and electricity generation, and in 1954, they connected the world's first nuclear electricity generator to the grid (WNA, 2017). Two years later, the UK followed suit and connected another nuclear power station comprising four 50MW reactors to the grid in Calder Hall (Chater, 2005).[34] In 1957, USA's first large scale nuclear power plant began operating in Shippingport, Pennsylvania: a 60MW unit pressurised water reactor, modified from the US military submarine design (Scurlock, 2007). France built its commercial models in 1959, and Canadians started their first electricity-generating unit in 1962.

Scaling up and fast growth – 1960s and early 1970s

With the beginning of 1960s, several governments in the world sought to build up a nuclear electricity generation industry (Scurlock, 2007). However, there was little incentive for the private companies to invest in this new sector since other types of energy were readily available for low prices at that time. For instance, utility companies in the USA refused to participate in the nuclear power program arguing that the country

[32] When bombarded with neutrons, the uranium 238 isotope with atomic number 92 is likely to form a new isotope of mass 239, which then transforms into a new element of mass 239 and atomic number 93 by emitting an electron. This new element also emits an electron, to become another new element of mass 239 and atomic number 94. These two new elements were called Neptunium (atomic number 93) and Plutonium (atomic number 94), by analogy of the planets of Neptune and Pluto, both of which are located beyond Uranus (Uranium, the 92nd element) in the solar system. Plutonium has added advantages to uranium in the building of a nuclear bomb, since it is chemically different from uranium and hence is easier to separate and enrich. It is also more readily fissionable, making it a better candidate for an atomic bomb. (WNA, 2017)

[33] A nuclear submarine can remain underwater for months without requiring air for its engines. The first nuclear submarine, i.e. USS Nautilus, which was powered by a small pressurised water reactor, entered in service in 1954 (Scurlock, 2007).

[34] Although the reactors were producing electricity, it was no secret that they were also intended for plutonium production (Scurlock, 2007).

abounded with cheap oil and coal, and there was simply no need to bear the high costs and risks of building nuclear reactors (Scurlock, 2007). As a result, the US government first had to heavily subsidise the industry and build several demonstration reactors using different technologies, among which only PWR and BWR types were deemed good enough for electricity production (Scurlock, 2007). In order to build up a market for nuclear energy, several loss-making fixed-price contracts were made by General Electric and Westinghouse, where losses of up to one billion dollars would be sustained by the manufacturers (Scurlock, 2007). This strategy paid off and 44 plants (around 40 GW of capacity) were ordered by several utility companies during the so-called "Great Bandwagon" of orders (Scurlock, 2007).

The oil embargo in 1973, imposed by the Arab members of the Organization of Petroleum Exporting Countries (OPEC) on the US and other western countries, quadrupled the oil prices, and as a result, nuclear energy emerged as a reliable energy alternative. Countries started to phase out their power plants using petroleum in favour of nuclear power (Chater, 2005). A rush of orders came from the industrialised world in order to attain a comparative independence of energy supply since uranium was considered as a more "strike-proof" energy source (Scurlock, 2007). It was more widely distributed around the world than oil, and quantities of uranium for a given amount of energy were small compared to oil and coal, facilitating the trade and storage of large amounts of energy (Scurlock, 2007).

As a result, several new orders came from throughout the industrialised world. For instance in the USA, between 1973 and early 1990s, the share of nuclear power in electricity production increased from 4 percent to 20 percent, while oil's share decreased from 17 percent to 4 percent (Chater, 2005). In France, following EDF's launch of the intensive nuclear programme, the share of nuclear electricity went up from 8 percent in 1974 to 78 percent in late 1990s (Chater, 2005). Similar trends were observed in Soviet Union, Germany, Canada, and Japan, as well. In sum, this brief period was arguably as close as nuclear power would get to what could be called its golden age. Caught up in the nuclear hype, the US went even so far as to predict that they would own approximately 1000 nuclear power plants in operation by the year 2000 (Scurlock, 2007).

The turning point – late 1970s and 1980s

Despite the highly ambitious future projections of the industry, the nuclear enthusiasm of early 1970s was short-lived. The reasons for this loss of interest are twofold: First, the economic crisis at the aftermath of the oil shock increased the costs of capital-intensive investments such as nuclear power plants (Scurlock, 2007). Next, the manufacturers had incurred huge losses from the turnkey contracts made in late sixties and the hope that electricity from nuclear power would be "too cheap to meter" was never materialised (Chater, 2005). A good case in point is the Washington Public Power Supply System, which lost over two billion dollars after cancelling four power plants (Scurlock, 2007). Meanwhile in France, the nuclear construction programme and low electricity prices resulted in approximately 50 billion dollars of accumulated debts by the end of 1980s (Scurlock, 2007).

When the accident in the power plant in Three Miles Island occurred in 1979, the industry had already been experiencing a slowdown. After 1979, no new plants were ordered in the USA and several existing projects

were cancelled (Chater, 2005). In Europe, Austria and Sweden opted out of nuclear energy after referenda, and several reactors were cancelled, or never operated (Chater, 2005). Lastly, with the nuclear catastrophe in Chernobyl in 1986, the nuclear industry entered into an era of depression: The nuclear programme in Soviet Union lost considerable momentum and Italy decided to shut down all its four power plants in 1987. However, despite all these setbacks, reliance on nuclear power never completely disappeared.

Recent trends – 1990s onwards

Nowadays, there are two different camps among countries regarding nuclear power. For some, nuclear power is already outdated: Italy and Lithuania shut down all their reactors long ago and Japan took all its nuclear reactors off the grid, after the accident in Fukushima caused by the earthquake and the following tsunami in March 2011. Germany started to phase out its reactors after Fukushima, as well. For others, however, nuclear energy continues to occupy a prominent role in electricity production. For instance, according to IAEA (2017), the share of nuclear energy in the total supplied electricity in France was 76.3 percent in 2015. USA continues to have the largest nuclear capacity in the world (99.8 GW), although it only accounted for 19.5 percent of the country's electricity supply in 2015. Ukraine, Slovakia, and Hungary produced more than half of their total electricity generation from nuclear in 2015. Furthermore, there are newcomers such as China, who increased its total nuclear capacity substantially in the last two decades. As shown in **Figure 4.2**, while the total amount of electricity supplied from the nuclear energy is either static or decreasing in western countries, in China, it is increasing fast, and in South Korea and Russia, it is expanding steadily (BP, 2017).

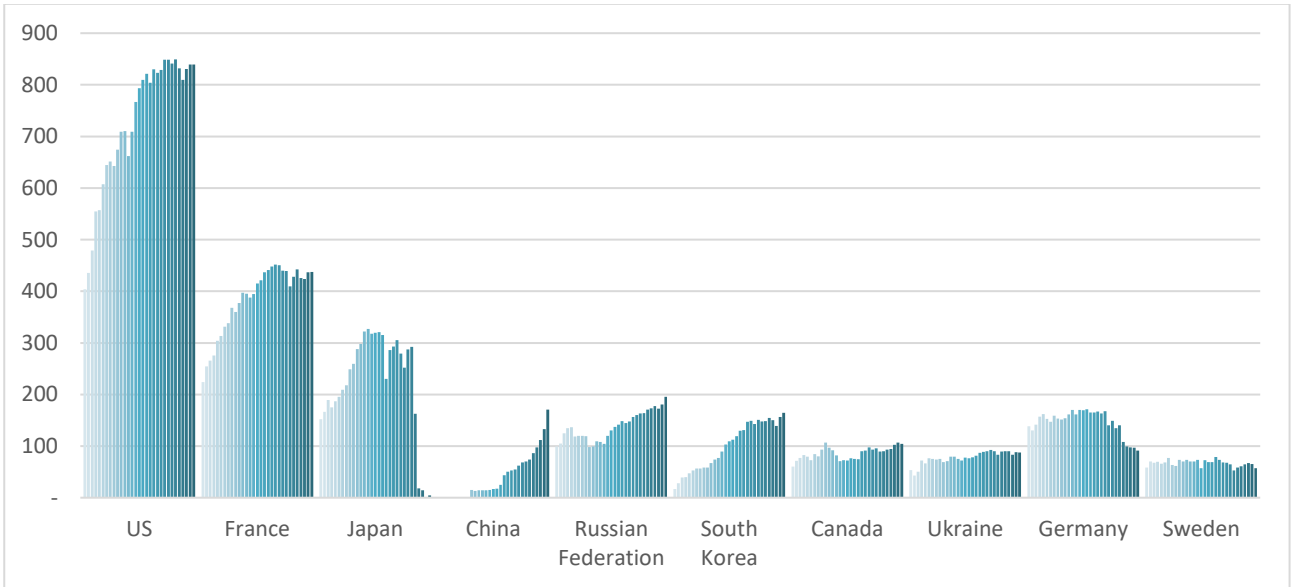


Figure 4-2 Cumulative electricity consumption from NPPs in operation in the top 10 countries with largest capacities, between 1985 (light blue) and 2016 (dark blue). *Source:* (BP, 2017)

The effect of Fukushima disaster clearly manifests itself in **Figure 4.2**, underlined by the sharp decline in consumption levels in Japan and Germany in recent years. However, the USA's decision to cease nuclear

expansion predates the Fukushima disaster, going back to late 1970s. No new nuclear power plant licenses were granted in the USA after the Three Miles Island accident in 1979 (the first large scale accident to raise suspicions over nuclear safety), and no new constructions were started after mid-1980s (Van Gerven, 2014). The Chernobyl disaster in 1986 had also made countries reconsider the safety of nuclear energy, and the expansion of their nuclear capacity decelerated afterwards. As shown in **Figure 4.3**, although the level of total electricity produced in the world from nuclear seems to be increasing in absolute terms, the share of the nuclear in total electricity production first stalled and then decreased from 1986 onwards, hinting at the tentative conclusion that the new additions to the world's total electricity capacity are coming from sources other than nuclear.

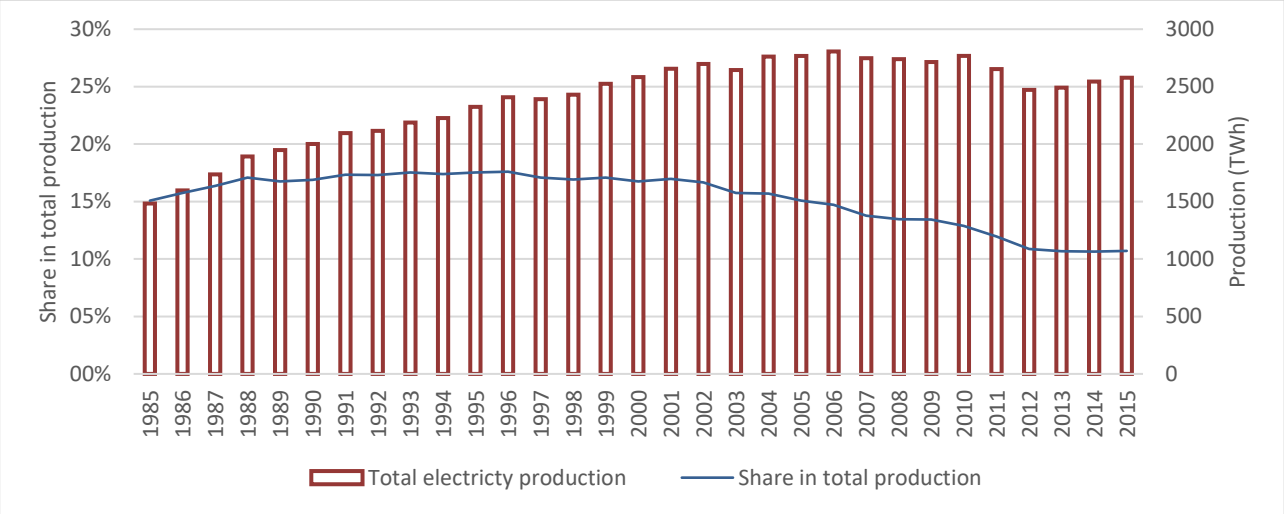


Figure 4-3 : Total electricity produced by nuclear reactors and its share in total world consumption since 1985 *Source:* (BP, 2017)

In fact, as mentioned earlier, the new nuclear capacity comes mostly from the Asian countries, particularly from China, where there are 20 reactors under construction, with a capacity of 20.6 GW. In contrast, the reactor fleet in the western countries is quite old. As shown in **Figure 4.4**, the majority of the reactors in the world are old, the average age being 29.5. However, the distribution of the reactor age varies also from country to country. That is, while the average reactor age is 36 in the US, and 31 in the EU and former Soviet countries (both of which clearly reflect the timing of Three Miles Island and Chernobyl disasters), China has a much younger fleet, with an average age no higher than 8 (Evans & Pearce, 2016). **Figure 4.4** shows that a large share of the nuclear reactors is approaching the end of their lifetime and in the coming decades they will be shut down, resulting in a substantial decline in the total nuclear capacity.

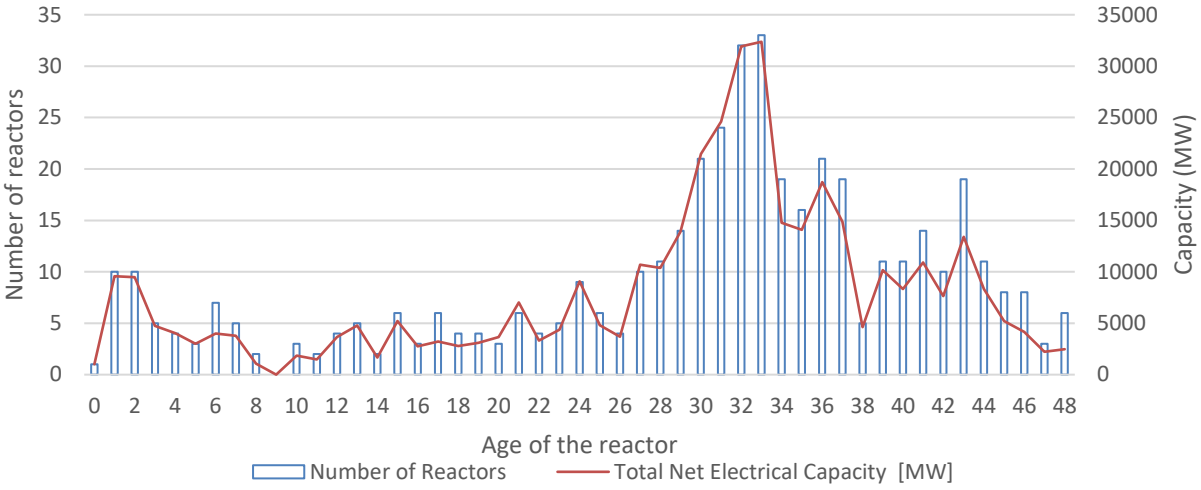


Figure 4-4 Distribution of the reactors in the world by age *Source: (IAEA, 2017)*

It is clear that the three major nuclear disasters in the history have had a substantial negative impact on nuclear energy development. However, accident risk is only one facet of the many unresolved central problems surrounding the nuclear energy, and this is accepted by both the proponents and opponents of the technology (Van Gerven, 2014). The other problem embedded within nuclear energy is the management of the high-level radioactive waste (HLW) – the long-lived and highly radioactive waste such as the spent fuel. For decades, governments and the nuclear industry strived to find disposal solutions for HLW, such as burying it in deep geological disposals. However, due to issues regarding the societal acceptance, there has been little progress in even finding suitable sites, let alone construct the storage facilities. (Brunnengräber, Di Nucci, Isidoro Losada, Mez, & A. Schreurs, 2015). In the United States, Yucca Mountain in Nevada was selected as the repository site; however, the project has been stalling due to the local opposition. Currently, the spent fuel is stored in the pools at the reactor sites, or in centralised interim sites not suitable for long-term storage. There are, as yet, no countries in the world with a long-term storage in operation (Brunnengräber et al., 2015).

In the early 1990s, despite the two major accidents and the problems related to the long-term waste storage, nuclear energy was still promoted by the industry who was assuring the governments that Chernobyl was Soviet technology and that a similar accident would not happen in the West (Brunnengräber et al., 2015). In fact, the accident in Three Miles Island was promoted as a disaster management success, showing how the western safety standards worked effectively for keeping the meltdown inside the protective shell (Bowonder, 1986).

Prospects for the future

The industry introduced the concept of "nuclear renaissance" by promoting the nuclear technology as "clean energy" for its potential to mitigate the greenhouse gas emissions. From 1995 onwards, nuclear power even received the support of the UNFCCC as a viable option to combat climate change (Brunnengräber et al., 2015). However, a new construction wave similar to that of 1970s, which can be dubbed "a renaissance", never materialised due to several reasons including but not limited to the recent Fukushima disaster (Mez, 2011).

Whether nuclear energy can truly be a part of the transition to a sustainable energy future has been a widely debated issue since early 1990s. It is claimed that, in comparison with fossil fuels, nuclear energy produces less greenhouse gas emissions, even after accounting for the emissions associated with the nuclear fuel chain (Ramana, 2016). Some others claim that nuclear energy is good for some sustainability indicators such as ozone depletion or photochemical smog (Stamford & Azapagic, 2011). However, well-known problems associated with the technology, such as radioactive waste, risk of catastrophic accidents, and linkage with the atomic bombs, raise doubts over the sustainability of nuclear energy (Ramana, 2016).

Nowadays, the new nuclear reactors are being constructed mostly in the developing countries, whereas in the industrialised countries of the Global North, the prospects for nuclear energy are not good (Ramana, 2016). The location of their construction has shifted from countries that host several reactors, to countries with few or no reactors. In a similar fashion, the suppliers of these new reactors are no longer companies from USA, France, or Canada, but those from Russia, or South Korea, and potentially China in the near future (Ramana, 2016). At this background, the following section focuses on Turkey's attempts to build two new nuclear power plants in Akkuyu and Sinop provinces.

b) History of Akkuyu and Sinop nuclear power plants

The history of nuclear power in Turkey dates as far back as 1955, following Turkey's involvement in the "Atoms for Peace" initiative (Şahin, 2011). In 1956, the national agency, i.e. "General Secretariat of Atomic Energy Commission", was established (TAEK, 2017b). Briefly after this, Turkey became a member of the International Atomic Energy Agency (IAEA) in 1957 and adopted its first legislation for the "Implementation of Nuclear Power in Turkey" in 1959 (Şahin, 2011). From that point onwards, Turkish governments, regardless of their political stance, attempted several times to build a commercial nuclear power plant in Turkey. However, all these attempts failed since the government was not able to secure the high amounts of initial financing. The continuous civil society resistance in the legal front arguably played a role in stopping the projects, as well (Şahin, 2011). Six major attempts to build a nuclear power plant since 1960s, each lasting approximately a decade, can be summarised as follows:

1960s – Initial plans.

After the establishment of the AEC and the membership of Turkey to IAEA, the first research reactor called TR-1 (with capacity of 1 MW) was commissioned to "American Machine and Foundry". It was constructed between 1959 and 1962 and became operational in 1962 (TAEK, 2017a). From 1965 onwards, the first studies were carried out by the AEC and EİEİ (*Elektrik İşler Etüd İdaresi* - Electricity Works Study Department) with the advisory support of an international consortium formed by American, Swiss and Spanish firms. The consortium published their final report in 1969, where they recommended a 400 MW pressurised heavy water reactor, which was planned to be built as a conventional purchase and expected to become operational in

1977. (Jewell & Ates, 2015; Özemre, 2001). Meanwhile, the goal of building a nuclear power plant was officially (although vaguely) mentioned in Turkey's Second Five Year Development Plan as "[t]he possibilities of exploiting nuclear energy sources will be investigated and efforts will be made to establish nuclear power plants" (State Planning Organisation, 1968, p. 559). However, these plans were discontinued due the military coup in 1971 and the political and economic instability that followed it (Jewell & Ates, 2015).

1970s – First site selection and issuing the license

Following the coup, the Department for Nuclear Power Plants was founded within the Turkish Electricity Authority (Türkiye Elektrik Kurumu - TEK) in 1972 and the plans for building a nuclear power plant came into the agenda once again (Özemre, 2001). The first nuclear reactor prototype was planned in 1973, followed by the search for a suitable plant site. After feasibility studies for site selection, Akkuyu, a small bay in Mersin province along the Mediterranean, was selected for the construction of Turkey's first NPP. The reasons for this preference can be listed as follows (Akcay, 2009; Aydın, 2014; Özemre, 2001):

1. The region was seismically stable
2. It was well-situated along the coast and hence would provide convenient transportation to bring in heavy machinery by sea
3. Its low population density would make it safer in the unlikely event of an accident
4. Closeness to sea would provide adequate cooling water at the site

The site license was acquired in 1976 and the first full-scale project for Akkuyu started under the administration of the centre-left Republican People's Party (CHP). A tender was organised in 1977, with the Swedish company ASEA ATOM (today Westinghouse Electric Sweden AB) being the only firm to make a bid, with their BWR (Boiling Water Reactor) type model (Adalıoğlu, 2009). The firm was chosen to construct the power plant, but the attempt came to a halt for several reasons, including the presence of a new, mostly local Turkish anti-nuclear movement, and disagreements about the financing between the government and the company. The Swedish government withdrew its credit guarantee in 1980, and the project was cancelled (Jewell & Ates, 2015; Şahin, 2011; Udum, 2010).

The seeds of the anti-nuclear movement in Turkey were planted against this first full scale attempt even before the infamous Three Miles Island and Chernobyl accidents. Inspired by the anti-nuclear movements in France, the chairman of the local fishing cooperative, Arslan Eyce, along with his two journalist friends, Ömer Sami Coşar and Örsan Öymen, launched the first ever awareness raising campaign against nuclear plants by informing the fishermen in the region about the potential risks and dangers those plants bear (Künar, 2002). They later managed to attract the attention of both local and national civil society by organising conferences and meetings, circulating their views through the newspapers and posters. They even collaborated with the Swedish civil society against the first attempt (Künar, 2002; Şahin, 2011).

1980s – After the coup and the effects of Chernobyl

After the cancellation of the last attempt and a two-year pause in the aftermath of the 1980 military coup, the

military administration restructured the AEC as Turkish Atomic Energy Authority (TAEK), and initiated another attempt for Akkuyu in 1982 (Şahin, 2011). Studies for the site selection for new plants followed shortly after, and Inceburun (in Sinop, a small Black Sea city) was finally selected as a candidate site for the second nuclear power plant (Udum, 2010). In 1983, this time without a tender process and through direct negotiations, Atomic Energy of Canada Limited (AECL) from Canada (now CANDU), Siemens-Kraft Werk Union (KWU) from Germany and General Electric (GE) from US were asked to submit their offers. However, due to several controversies surrounding the project, all three of the firms withdrew their offers.

First, General Electric (GE), asked by the government to build on the site in Sinop, withdrew from the project since they were reluctant to work in this site, due to safety concerns. The experts in GE thought that a nuclear power plant in Sinop was not feasible since there were not enough studies about the seismic zone in the region. Hence, GE did not submit any bids and the negotiations were stalled. The government continued the negotiations with the Germans and Canadians, and a tentative agreement was reached in 1984 (Şahin, 2014). However, soon after the agreement, the Turkish government announced changing the bid into a Build-Operate-Transfer (BOT) model instead of the previously agreed upon "Turn Key" model (Udum, 2010), which discouraged KWU since it had experience in nuclear plant construction but not in operating them. AECL accepted the BOT model and a pre-agreement was finally reached. However, later the Canadian government did not want to proceed with the project with a BOT model unless there was a guarantee from the Turkish State, which was rejected by the Turkish government and resulting in another failed attempt.

Kibaroglu (1997) argues that, apart from the financial and technical problems at hand, what impaired Turkey's nuclear program was western countries' concerns over nuclear proliferation due to Turkey's close relations with Pakistan, who at that time was known to be trying to enrich uranium for proliferation purposes. Kibaroglu (1997) attributes the withdrawal of the American and Canadian firms partly to the suspicions that if Turkey had acquired the nuclear technology, it might use it for building nuclear weapons, as Pakistan had done. Accordingly, opposition from Greece, France, India and Israel over the concerns about nuclear proliferation also affected the efforts to secure the necessary financing for the project (Kibaroglu, 1997).

While Turkish government did not have a clear international support, it lost the national public support as well, after the Chernobyl disaster in 1986. The large radioactive fallout had a catastrophic impact especially on the Black Sea, a region famous for tea and hazelnut cultivation. Although the government and TAEK tried to cover-up the fallout and claimed that there was nothing to worry about, it was later revealed that the tea and hazelnut production in the region was heavily affected, followed by the increased numbers of cancer cases in the region (Şahin, 2011). Despite the heightened political pressure on the civil society at the aftermath of the military coup, there were mobilisations (although not at large scale) against the project, such as petition and awareness raising campaigns (Künar, 2002). Public concerns about the safety of the nuclear power plants increased even further, putting political pressure on the government (Sirin, 2010). Turkish Electricity Authority (TEK) closed down the Department of Nuclear Power Plants on the grounds that it was no longer useful (Adalıoğlu, 2009). Even though Özal Government tried to reach a deal with Argentina by signing a cooperation agreement for the transfer of technical knowledge and the construction of modular 25 MW reactor, this minor

attempt also failed due to international political factors and lack of public support (Künar, 2002; Şahin, 2011).

1990s – The era of coalition governments and the birth of the Anti-Nuclear Platform

Even after the Three Miles Island and Chernobyl accidents, Turkey was still pursuing the construction of a nuclear power plant. A fourth attempt was initiated by the right-left coalition government in 1992, following a report by the Ministry of Energy and Natural Resources. The report argued that Turkey might face an energy crisis in 2010, unless it diversifies its energy production resources. Nuclear power was put forth as a necessary option for preventing the energy shortage expected in the coming decades (Adalıoğlu, 2009; Özemre, 2001). Following this report, nuclear power was once again prioritised by the government. However, the materialisation of these plans was delayed due to several political, economic and technical reasons, since beginning with the early 1990s, Turkey entered into a decade of coalition governments and economic instability.

In an effort to liberalise the economy and bolster privatisation, in 1994, TEK was restructured and divided into two, as the Turkish Electricity Generation and Transmission Company (TEAS), and the Turkish Electricity Distribution Company (TEDAS), which further retarded the preparations of the bidding process (Martin, 1997). From this point onward, TEAŞ became the focal point for the development of the nuclear power plant, and it started seeking consultancy services to call for bids from international companies. With the beginning of 1995, Turkey started to receive consultancy from the Korean Atomic Energy Research Institute (KAERI) and made efforts to initiate a bidding process and bid specifications for the nuclear plant shortly after (Martin, 1997).

TEAŞ finally released the bid specifications on late 1996, and the three consortia identified for bidding were as follows (Martin, 1997)

- Westinghouse (USA) and Mitsubishi Heavy Industries (Japan); with Raytheon (USA) and Enka (Turkey), bidding for a single 1200 MW PWR
- Atomic Energy of Canada Limited (AECL) (Canada), leading a consortium bringing together Kvaerner-John Brown (UK), Gama-Güriş-Bayındır (Turkey), Hitachi (Japan), Korea Electric Power Corporation (KEPCO), Hanjung (Korea Heavy Industries and Construction Company -- KHIC) and Daewoo (South Korea), bidding to supply two 700 MW CANDU PHWR
- Nuclear Power International (NPI), a partnership lead by Siemens (Germany) and Framatome (France), together with Campenon Bernard; Hochtief AG; Garanti Koza, STFA, Tekfen & Simko (Turkey), bidding for a Siemens 1400 MW Convoy PWR

Meanwhile, the revival of the plans for a nuclear power plant triggered a visible and vocal mobilisation by the anti-nuclear movement. A large public demonstration was organised by the Turkish Green Party, in Silifke, Mersin (Şahin, 2011). In 1992, Greenpeace organised their very first direct action in Turkey, in Izmir, against nuclear power (Künar, 2002). A nationwide movement gained momentum rapidly and in 1993, more than a hundred different civil society organisations, including unions, political parties, independent activists and individuals, professional organisations and environmental NGOs united and formed a large coalition, which was later called the "Anti-Nuclear Platform" (Şahin, 2011). The Platform became the flagship of the anti-

nuclear movement in the country and organised several successful demonstrations, rallies, direct actions, conferences, publications, and festivals, to keep public attention awake and create a strong opposition (Künar, 2002; Şahin, 2011).

Although bid specifications from three consortia were received in 1996, the tender deadline was postponed several times in four years due to technical and economic reasons, and sometimes corruption claims (Udum, 2010). The frequent changes in the coalition government, financial constraints and strong opposition made it difficult for the governments to keep the pace with the project (Şahin, 2011). Finally in 2000, the Ecevit Government decided to cancel the project for good, drawing attention to the fact that alternatives for the nuclear energy, such as wind and solar, were gaining prominence and that the nuclear technology would become a financial liability for the country in the future (Udum, 2010). This marked a clear victory for the Anti-Nuclear Platform and in the history of environmental mobilisations in Turkey.

2000s – Back to the single party government

Although the coalition government led by Ecevit abandoned this attempt, the nuclear energy debate was revitalised with the change of government in 2002. The conservative Justice and Development Party's (AKP) rise to power by winning an outright majority of the seats in the parliament marked a turning point in the history of nuclear power for Turkey. Following the growing concerns over the import dependency for natural gas, particularly on Russia, nuclear power was reintroduced in the government's agenda as an alternative energy source to reduce the supply security risks (Jewell & Ates, 2015; Şahin, 2011). In 2004, the Ministry of Energy and Natural Resources re-launched studies for a long term nuclear power program and signed a cooperation agreement with United States on the peaceful uses of nuclear power (Şahin, 2011). According to the initial plans, TEDAŞ expected a 4500 MW nuclear capacity to be connected to the grid between 2011 and 2015 (Udum, 2010). Akkuyu was considered as the first option, and Sinop was the selected site for a second plant(Şahin, 2011). TAEK and Ministry of Energy put forth a collaborative effort in preparing the legal background of the proposed nuclear program. In 2007, a law was established to regulate the rules for the tender (mentioned as competition in the law), the selection process, and the principles on the sale of the electricity generated. (Şahin, 2011; Udum, 2010).

The tender process for Akkuyu started in 2008 (Jewell & Ates, 2015). Initially, six international vendors were planning to participate in the tender process; however, the state received only one bid from the Atomstroyexport-Inter Rao-Park Teknik consortium, a subsidiary of the Russian state-owned Rosatom. The consortium proposed to build four units of VVER1200 pressurised water reactors, with a price offer of 21.16 dollar cents per kWh (Udum, 2010). The price tag was deemed unaffordable by the government, who believed that the acceptable price range should be between 10-12 dollar cents. In late 2009, the high court halted the execution of some articles of the nuclear power tender regulation, and the tender was cancelled eventually (Şahin, 2011).

Meanwhile, the Anti-Nuclear Platform, which ceased its activities following the cancellation announcement by the Ecevit government in 2000, reunited in 2005, as the nuclear energy once again became an agenda item

for the government (Gürbüz, 2016). In 2006, after TAEK announced that Sinop was selected for the second nuclear power plant, one of the biggest street mobilisations in Turkey was organised in Sinop, with the participation of over 15 thousand people (Demircan, 2014). The date of the protests coincided with the 20th anniversary of the Chernobyl disaster and people coming from all around the country, fishermen from Mersin and the like, participated in the mobilisations. In 2007, while the bill on the regulation of the nuclear power program was being discussed in the parliament, 165 scientists signed an "Anti-Nuclear Declaration", citing the negative effects of nuclear power plants both on the environment and on human health (Anonymous, 2007; Demircan, 2014).

2010s – Intergovernmental agreements

After facing impediments such as the cancellation of nuclear legislation by the High Court, various legislative and administrative difficulties, court cases, and failed tenders, the government eventually decided to continue the project directly with Russia (the only country that expressed an interest in the previously failed tender). In order to avoid the legislative "chaos" and delays due to another tender process, the government signed a bilateral intergovernmental nuclear cooperation agreement with Russia, in 2010 (Şahin, 2011). According to this agreement, Rosatom would build, own and operate the Akkuyu Nuclear Power Plant until the end of its decommissioning (a new scheme different from the previous Build-Operate-Transfer strategies), and Turkey would provide the Akkuyu site free-of-charge and guarantee to purchase the electricity generated from Akkuyu for 15 years, at a price of 12.35 dollar cent per kWh. The fuel would be provided by the Russians, and again, the Russians would be in charge of the nuclear waste disposal. In addition, in line with the agreement, in order to build up the necessary human capital, Turkey would send several students to universities in Russia, to study nuclear technology and engineering, starting from 2015 (Akkuyu NGS, 2015).

In one respect, Turkey sub-contracted the costly construction, operation, fuel provision, and waste disposal matters to Rosatom, with all the risks borne (and compensation guaranteed) by the state of Russia, and avoided a large portion of potential future costs and risks, by giving the higher share of the plant (which can never be less than 51 percent) to Rosatom. Ultimately, according to this agreement, Akkuyu will be the first ever nuclear plant on a state's sovereign land, owned and operated by another state (Şahin, 2011). This exceptional deal prompted a strong reaction from the antinuclear movement, and even a considerable number of pro-nuclear engineers and academics opposed the agreement (Şahin, 2011). The construction of the plant was expected to start in 2013, but it has been delayed due to the administrative difficulties and civil society opposition.

Shortly after the agreement with Russia, the disaster in Fukushima happened in 2011; however, Turkish government did not withdraw or even suspend the project. In contrast, a similar agreement for nuclear cooperation was signed with Japan, with another Build-Own-Operate scheme, for the construction of Sinop Nuclear Power Plant, with capacity of 4480 MW and an expected cost of 22 billion dollars. According to this agreement, a Japanese led consortium would build the plant and own no less than 51 percent. The consortium would consist of Mitsubishi and Itochu from Japan, and GDF Suez (now Engie) and Areva from France. Again,

similar to the agreement with Russia, an electricity purchase guarantee was granted with a price of 11,80 dollar cent per kWh (Jewell & Ates, 2015).

Overall, Turkey currently plans to build two nuclear power plants, with a total capacity of 9280 MW, in Akkuyu and Sinop, using similar strategies of Build-Own-Operate. The details of the two projects can be found in **Box 4.1.**

Box 4.1 Planned nuclear power plants in Turkey

Akkuyu NPP **Sinop NPP**

Akkuyu NPP is a planned nuclear plant at Akkuyu, in Büyükeceli, Mersin Province, Turkey. It will be Turkey's first nuclear power plant.

Reactor type: VVER-1200/491 PWR

Reactor supplier: Atomstroyexport

Units planned: 4 × 1,200 MW

Nameplate capacity: 4,800 MW

Expected Cost: US$20 billion

- The governments of Turkey and Russia signed a bilateral nuclear cooperation agreement in 2010. Since it is an intergovernmental agreement, the opposition cannot seek recourse at the courts.
- Turkey sub-contracts the costly construction, operation, fuel provision, and waste disposal matters to Rosatom, with all the risks borne (and compensation guaranteed) by the state of Russia, by giving the higher share of the plant to Rosatom (at least 51%).
- Ultimately, Akkuyu will be the first NPP on a state's sovereign land, owned and operated by another state.

The Sinop (Inceburun) NPP is a planned nuclear plant located at Sinop in northern Turkey. It will be the country's second nuclear power plant after Akkuyu

Reactor type: Atmea I Gen. III (PWR)

Reactor supplier: Atmea

Units planned: 4 x 1,120 MWe

Nameplate capacity: 4,480 MW

Expected Cost: US$22 billion

- The deal for the project was signed between Turkish Prime minister Recep Tayyip Erdoğan and his Japanese counterpart Shinzo Abe on May, 2013
- The project will be carried out by a joint venture consortium of Japanese Mitsubishi Heavy Industries and French Areva.
- French electric utility company GDF Suez (recently re-branded as Engie) will be in charge of the operation of the nuclear plant, which is expected to start electricity production at 2023.

This new BOO strategy, facilitated through an intergovernmental agreement, helped the government to evade a possible court case from the opposition who, unlike in a regular tender process, could not bring an international agreement to the court (Şahin, 2011). However, the opposition against the nuclear energy gained even more momentum, especially after the Fukushima disaster in 2011. According to a poll conducted by Greenpeace Mediterranean in April 2011, shortly after the Fukushima disaster, 64 percent of respondents declared they would say "no" in a possible referendum on nuclear power plants, while 86.4 per cent said they would not want to live near the nuclear power plant (Yavuz, 2015). Furthermore, a study by Ertör-Akyazı, et al. (2012) showed that, even before the Fukushima accident, a strong popular anti-nuclear sentiment prevailed in the society, and was marked by an opposition of 62,5 percent to nuclear power, as opposed to only 7,2 percent endorsement.

Even though the intergovernmental agreements themselves are immune to court cases, the environmental impact assessment (EIA) report of the Akkuyu project (a 5500 pages long report) was not and it was brought to the court by several organisations in 2014. In fact, the first version of the EIA report for Akkuyu was heavily criticized by both the proponents of nuclear energy and the opposition on the grounds that it did not thoroughly analyse the full nuclear fuel chain (including mining, upgrading and fuel production), and fuel and waste transport. Failing to address all the questions and controversies that surrounded the project, the Ministry of Environment and Urbanisation eventually rejected the report in 2013. The court process is still ongoing and

hence, the construction of the power plant, which was expected to start in 2013, could not officially start yet due to administrative delays. However, the site preparation in Akkuyu is claimed to have begun under the disguise of a stone quarry (Yavuz, 2015).

Legal action was not the only means used by the opposition. Large anti-nuclear mobilisations were organised in Sinop and Mersin, as well as in big cities such as Istanbul, Izmir, and Ankara. The mobilisations in Sinop in April 2015 was one of the largest environmental protests the country has ever witnessed (Gürbüz, 2016). Local branches for Anti-Nuclear Platform, which was previously a predominantly national platform, are now established in many cities, including not only Sinop and Mersin, but also major cities such as Adana, Ankara, Antalya, Bursa, Istanbul, Izmir, Kocaeli, Ordu, and Samsun (Yavuz, 2015). The Anti-Nuclear Platform still maintains a strong, vocal opposition.

To recap, Turkey's nuclear program, albeit one of the oldest in the world, is also arguably among the most unsuccessful ones (Jewell & Ates, 2015; Şahin, 2011). Nearly every government since 1960s, regardless of their political stance (conservative or left-wing), has pursued the aspirations of building nuclear power plants, but failed to realise them due to financial constraints, lack of administrative or technical capacity, civil society opposition, or as some claim (Kibaroglu, 1997; Udum, 2010), due to the proliferation concerns of the western countries. Turkey seems to have overcome these problems by adopting BOO strategy through intergovernmental agreements with Russia and Japan. Although this strategy solves the challenges such as lack of financial and technical capacity, it creates new problems. Over the years, the proponents of nuclear energy have based their arguments on the much-needed energy security and energy independence. Especially, the increasing dependence on Russia for natural gas imports in the recent years is presented as a strong argument in favour of NPP construction by the government. However, civil society opposition argues that the intergovernmental agreement will not reduce the overall dependence on Russia: if anything, it will only exchange the dependence on gas imports (to the Russian gas company GazProm), for the dependence on nuclear power (to the Russian nuclear power company Rosatom).

In order explore further the decision-making problem over nuclear energy in Turkey, the following chapter will present a multi-criteria/multi-scale framework, laying out the debate over nuclear energy in Turkey, by identifying the relevant stakeholders, policy alternatives and governance issues. Next, the judgements of each stakeholder, in each policy alternative, and across all governance issues will be presented in the three dimensional **Deliberation Matrix** (O'Connor et al., 2006) with the aim to understand and eventually to introduce steps to assuage the nuclear conflict in Turkey.

Chapter 5: .Positioning the nuclear decision problem within a scale perspective using multi-criteria decision aid tools

Deciding in favour of or against nuclear energy is a laborious task since doing so entails addressing the controversies inherent in the decision-making process such as the impacts on environment and health, waste management, and risks of nuclear accidents, which are associated with issues of ecological complexity, uncertainty, and irreversibility. Reaching a decision that serves environmental justice gets further complicated due to the complex interactions and linkages between scales as well.

This chapter uses the debate over nuclear energy to show that the multi-criteria/multi-scale framework presented in **Chapter 2** may offer conflict governance mechanisms that serve environmental justice better. Towards this end, this chapter is divided into three: First, a qualitative and textual exploratory analysis of the nuclear debate in Turkey is presented to identify the relevant stakeholders, policy alternatives and governance issues at hand. Next, the judgements of each stakeholder, in each policy alternative, and across all governance issues are presented in the three dimensional **Deliberation Matrix,** devised by O'Connor et al. (2006). Finally, the main types of scale-related conflict sources identified between scales are presented, to show i) how and to what extent scale matters in governing ecological distribution conflicts and ii) how a multi-criteria framework offers pathways to address such conflicts.

a) Nuclear debate in Turkey: Stakeholders, policy alternatives, and governance issues

On October 10, 2016, the general assembly of Mersin metropolitan municipality became a scene of intense debate; Akkuyu Nuclear Power Plant was in the focus of the discussion. The city mayor, Burhanettin Kocamaz from Nationalist Movement Party (MHP in Turkish acronym), who had previously declared his opposition to the nuclear project in Akkuyu, was now surprisingly defending the enactment of a city level environmental and spatial plan which would allow the construction of the nuclear plant in Akkuyu. In fact, earlier in 2015, the municipality had enacted another environmental plan in which the Akkuyu project site was marked as reforestation area. However, the Ministry of Environment and Urbanisation rejected this plan, stating that it failed to comply with the higher-level plan enacted by the Ministry back in 2013, where the Akkuyu area had been marked as a nuclear power plant site. Not being able to implement any other projects in the city without an environmental and spatial plan, Mayor Kocamaz had to resort to a solution with a new plan where the nuclear site was marked as empty, neither approving nor rejecting the nuclear power plant project. The new plan was accepted despite the protests by the members of other opposition parties and citizens (Yağmur, 2016).

This event alone illustrates well the extent to which top-down planning predominates decision-making mechanisms in Turkey. That is, although the local municipality was initially against the nuclear power project, it was somehow "forced" to pass an environmental plan allowing (or at least not outright preventing) the

nuclear power plant project. This authority conflict between the local and national decision-makers is only one aspect of the problem in Turkey, however. The other aspect consists of the ongoing conflicts between the governments and the civil society: the proponents and the opponents of a nuclear power plant. As mentioned previously in **Chapter 4**, the anti-nuclear movement in Turkey is as old as the plans for the nuclear power plants themselves. Hence, the anti- and pro-nuclear camps have been in a long-standing conflict since the early 1970s, with the governments and other supporters pushing the project forward with arguments of modernisation and economic growth, and civil society (national and local actors and stakeholders) opposing it with arguments of accident risk and potential environmental and health impacts.

Of course, while making a decision regarding nuclear energy, critical matters such as long-term environmental and health impacts, waste management, and the possibility of nuclear accidents have to be weighed up with utmost care, since overlooking any one of these aspects might end in unprecedented and irreversible catastrophes. But, apart from this, the issue of scale has also a significant impact on the decision over nuclear energy since it has a quite large scope in both spatial (e.g., nuclear accidents affect large areas) and temporal scales (e.g., nuclear waste remains toxic for centuries). As discussed in **Chapter 2**, further complexities arise when the nature of reality (i.e. how the world works) and the practice of science (i.e. how the reality is perceived) are heavily affected by the scale of choice (Wilbanks & Kates, 1999). That is, focusing on a single scale tends to favour the processes, priorities and stakeholders at *that particular scale* and hence raises the possibility of overlooking other relevant processes that operate at a different scale. Moreover, the relationships between the processes in different scales may be too complex to trace at any scale beyond the local: The interactions between scales may be quite complex, since they may consist of positive and negative feedback loops (Wilbanks & Kates, 1999).

Overall, such cases call for an analytical framework that addresses multiplicity in a non-reductionist manner with a process of stakeholder participation, and recognises the interactions between different scales. Indeed, multi-criteria evaluation techniques (presented in **Chapter 2**) provide such set of tools that systematizes problem formulation, addresses multiple dimensions, enhances transparency and facilitates participation (Munda et al., 1994; O'Connor et al., 2006; Stagl, 2006). Here the three dimensional **Deliberation Matrix** designed by O'Connor et al. (2006) and presented in **Chapter 2**, will be utilized to frame the decision-making problem for nuclear power in Turkey. Such an exercise will help us to show how the judgements of each stakeholder, in each policy alternative or scenario, and across all governance issues, differ in relevant scales.

In an attempt to frame the decision-making problem at hand, first, an institutional analysis was carried out and nine different stakeholder groups were identified, as presented in **Table 5.1**. Next, a qualitative and textual exploratory analysis was conducted, covering news, press releases, reports, books, newsletters, websites, position papers and videos in public sphere, where these local and national scale pro- and anti-nuclear stakeholders expressed their views about the construction of a nuclear power plant, either in Akkuyu, or in Sinop. Five hundred arguments, stated by the representatives of these nine different stakeholder groups, were collected in total. The list of arguments is presented in **Annex 1**, together with the affiliations and respective information sources, where each argument is associated with a unique argument ID (ArgID).

Table 5.1 The list of stakeholders whose views were collected for the case study

National Stakeholders	Local Stakeholders
• Academics / Scientists / Experts • Anti-Nuclear NGOs / Activists / Journalists • Pro-Nuclear NGOs • Business Groups • Central Government Agencies	• Members of the Parliament • Local residents • Local NGOs and activists • Local government

Once the arguments of the above listed stakeholders over nuclear energy were collected, a discourse analysis was conducted to identify the alternatives and options offered by these stakeholders. Overall, the alternatives were categorised into seven different groups, as presented in **Table 5.2** with short descriptions. It should be noted at this point that these are the alternatives mentioned by the stakeholders while discussing electricity production through the nuclear energy option; however, not all of them are directly about electricity production per se. In particular, the local stakeholders from Sinop and Akkuyu compare the nuclear power plant project not with an energy alternative but rather with other local development alternatives such as tourism or agricultural production.

Table 5.2 Alternatives mentioned by the stakeholders

Investment Alternatives	**Acronym**	**Short Description**
Business as usual	BAU	Keeping up with the current energy portfolio
Nuclear	Nuke	Increasing the installed capacity of electricity generation by incorporating nuclear energy into the current energy portfolio
Non-renewable sources	NonRenw	Increasing the installed capacity by increasing the amount of electricity produced from coal and natural gas in the energy portfolio
Renewable sources	Renw	Increasing the installed capacity by increasing the amount of electricity produced from geothermal, solar, wind and hydro in the energy portfolio
Technical fixes	TechFix	Instead of increasing the installed capacity, using means such as demand management, efficiency improvement, energy storage, infrastructure improvements, smart grids, and other technical solutions
New imaginaries	NewImg	Instead of increasing the installed capacity, focusing on democratisation and decentralisation of energy production methods through means such as establishing energy cooperatives
Local development	LocDev	Focusing on options other than electricity production projects; on local development alternatives such as mass or eco-tourism, agricultural production, investments in fishery developments

After identifying the alternatives, a further analysis was carried out to pinpoint the governance issues raised by the stakeholders. For that purpose, the arguments put forward by the stakeholders were categorised under the six environmental justice dimensions proposed by Douguet et al. (2016) as *ecological distribution, economic distribution, participation, recognition, subsistence* and *creation* (as presented in **Figure 1.1** in **Chapter 1**). After a careful analysis of all arguments, a number of issues were identified under each of these six dimensions, as displayed in **Table 5.3**[35]. The complete categorisation of all the arguments according to these six justice dimensions and issues is presented in **Annex 2**.

[35] One should note that, of course, such classifications are always fuzzy and never clear cut. Alternative classifications can be put forward using different dimensions.

Table 5.3 Governance issues under each environmental justice dimensions

Environmental Justice Dimension	Governance Issues
1. Ecological Distribution	i. Ecological impacts, ii. Health impacts iii. Impacts on climate change iv. Intergenerational equity concerns v. Land use impacts vi. Risk and safety concerns
2. Economic Distribution	i. Affordability ii. Employment iii. Energy independence iv. Energy security v. Impacts on the trade balance vi. Impacts on local economy vii. Impacts on national economy viii. Social equity concerns
3. Participation	i. Local participation in decision-making ii. Informed political choice iii. Power inequality in decision making
4. Recognition	i. Appropriateness of the existing legal framework ii. Implementation of the existing legal framework iii. Respect for rights
5. Subsistence	i. Impacts on livelihoods
6. Creation	i. Cultural impacts ii. Human capital iii. National hegemony iv. Peace v. Technological progress

These governance issues are presented below in more detail, with short descriptions and argument examples, in order to lay out the debate over the electricity production alternatives in Turkey, and in particular, over the decision for nuclear energy.

1. Ecological Distribution

i. Ecological Impacts: This aspect is an indispensable part of any nuclear energy debate, be it in favour or against nuclear power. All stakeholders put forward issues related to ecological impacts of nuclear energy, such as impacts on biodiversity and ecosystem, air pollution, soil contamination, potential leakages from waste disposal or decommissioning, and emissions of harmful gases other than CO2, such as sulphur dioxide or nitrogen oxide. Both camps provide arguments on the ecological impacts of nuclear energy; however, the perspectives from which they viewed such impacts differed greatly. Unsurprisingly, the pro-nuclear camp is more likely to highlight how nuclear energy does not harm the environment, unlike the

coal-fired thermal power plants. For instance, a document by TAEK states that "*Nuclear energy does not cause acid rains … (in contrast, it) plays an active role in the reduction of sulphur dioxide and nitrogen oxide emissions"* (**ArgID 205**)*,* underlining the fact that it is the fossil fuels that are more likely to cause such emissions. On the other hand, the opponents rest their arguments heavily on ecological concerns such as loss of habitats, and large-scale soil contamination. To illustrate, an activist from the Anti-Nuclear Platform argues that, "*The nuclear power plant to be installed in Akkuyu will have adverse effects on the natural habitats as well as on the protected areas, forest areas and agricultural areas*" (**ArgID 240**).

ii. Health impacts: The impacts on human health such as exposure to radiation, cancer risk, or respiratory diseases are also among frequently raised issues in discussions. Again, the opponents of nuclear power underline all the health hazards nuclear power plants may entail, whereas the proponents have almost diametrically opposite claims. For instance, a medical doctor from Mersin claims that they "*should not have to deal with all the ailments caused by the nuclear plant such as thyroid cancer or childhood leukaemia. Instead,* [they] *should put up a fight so that they do not construct the plant in the first place*" (**ArgID 86**). On the other hand, an academic favouring the nuclear option over thermal power plants states that "*there is an undeniable increase in the number patients suffering from emphysema and upper respiratory diseases, inhabiting in the residential areas around the thermal power plants*" (**ArgID 162**).

iii. Impacts on climate change: The impact of a proposed policy option on climate change is another widely discussed issue among stakeholders. For instance, a sentence in a TAEK document compares nuclear energy to fossil fuels and claims that "*unlike fossil-based energy production, nuclear energy does not lead to greenhouse gas emissions*" (**ArgID 204**). On the other hand, a national anti-nuclear NGO compares the nuclear option to renewable energy and suggests: "*for a dollar deposited, renewable energy provides 7 times less carbon emissions than nuclear energy*" (**ArgID 268**).

iv. Intergenerational equity concerns: The issue of intergenerational justice, be it related to the longevity of nuclear waste or the irreversibility of nuclear damage, is particularly pronounced by the anti-nuclear stakeholders. For instance, an academic emphasizing the issue of the long lifetime of nuclear waste, states that "*no technician or bureaucrat should go overboard and try to be a guarantor for 250 thousand years or even a thousand years"* (**ArgID 137**). Likewise, a national NGO from the Anti-Nuclear Platform stresses the problem of irreversibility and states: "*We are strongly opposed to nuclear energy because we do not want to bear the irreversible costs of environmental damage*" (**ArgID 284)** the nuclear power plant may lead to.

v. Land use impacts: The issue of land use is mentioned most frequently in the statements of pro-nuclear stakeholders, and is presented as a disadvantage associated with the renewable energy sources for the most part. That is, instead of presenting outright what they think are the benefits of nuclear power plants, the nuclear proponents bolster their arguments by drawing attention to (what they think are) the issues of the other energy sources, which is the great size of land used by the renewable sources in this case. To illustrate, TAEK states that "*Nuclear energy does not require a large area for production: Energy resources that require large areas such as hydropower, solar and wind energy can lead to some environmental and social problems, such as the destruction of large forest areas, or the loss of fertile land and the displacement*

of the people living there" (**ArgID 206**). Similarly, the web site of a pro-nuclear NGO contains the following statement about the negative impacts of hydropower on land use: *"In the construction of the Birecik dam, thousands of families lost their gardens and agricultural land. Many historical monuments were flooded"* (**ArgID 409**).

vi. Risk and safety Concerns: At the aftermath of both Chernobyl and recent Fukushima accidents, the issues of accident risk, together with earthquake and tsunami risks, have come up in many arguments put forward by stakeholders from both camps. While the pro-nuclear camp states that the planned power plants in Turkey will have the best safety standards and the risks will be minimal, the anti-nuclear camp, both at national and local scales, claims that disasters may and do happen despite strict safety measures, pointing to the Fukushima disaster. For instance, a local resident in Sinop states: "*I stand against nuclear because the accident risk can never be zeroed in*" (**ArgID 99**).

2. Economic Distribution

i. Affordability: The matters of electricity price and lifetime cost of the alternatives are expressed by many stakeholders from both camps. The pro-nuclear stakeholders claim that the electricity generated from a nuclear power plant will be available for lower prices, compared to other alternatives. However, the anti-nuclear camp draws attention to the unforeseen costs of future waste disposal and maintains that options such as solar energy or wind power generate electricity at competitive prices too. For instance, a journalist and long-time anti-nuclear activist states that *"Turkey will receive electricity from Akkuyu NPP at 12.35 dollar-cents per kWh. Right now, Turkey is paying 7.3 dollar-cents per kWh for electricity from wind or hydroelectric power plants, 10.5 dollar-cents per kWh for electricity generated at geothermal sources, and 13.3 dollar-cents per kWh for electricity generated at solar and biomass power plants"* (**ArgID 43**). In contrast, the Ministry of Energy and Natural Resources claims that for nuclear energy "*the operation lifetime is longer than other plant types*" (**ArgID 374**) and "*the cost of nuclear fuel and, as a result, the price of electricity produced from NPPs are at a considerably stable level*" (**ArgID 370**).

ii. Employment: One of the major arguments underlined by the pro-nuclear camp is that the nuclear power plant will create jobs, both at local and national scales, during both construction and operation stages. For instance, the ex-governor of Sinop claims that "*20 thousand people will work in the construction phase, which will last until 2023,* [and when the NPP starts operation] *7 thousand qualified staff will come to Sinop*" (**ArgID 107**). On the other hand, anti-nuclear camp argues that the number will not be as high as advertised. To support this claim, an academic opposed to the nuclear energy states: "*Based on the world average, 1000 to 2000 skilled workers will work in the construction phase, which will take 10 years. When nuclear power plant in Sinop is established, 200 to 400 Japanese / French skilled nuclear technicians and approximately 100 to 200 local technical staff and unskilled workers will continue to work*" (**ArgID 34**).

iii. Energy independence: Since imported natural gas and oil constitute a large share of Turkey's energy mix, the issue of energy dependence frequently comes up in the energy-related discussions. The pro-nuclear camp argues that nuclear power will substitute the imported natural gas used for electricity production and hence "*will reduce our* [Turkey's] *dependence on external sources of energy*" (**ArgID211**). However, those on the anti-nuclear camp assert that nuclear energy will create a false sense of independence since the

country will still be dependent on nuclear fuel provided by the Russians and add that energy independence in the truest sense would only be possible by using renewable sources. For instance, an anti-nuclear NGO representative emphasises the role of energy cooperatives and states "*…we can re-establish the long forgotten cooperatives and build these* [renewable] *energy plants together… we can produce the electricity from whichever source … (and) can thus become truly independent in terms of energy*" (**ArgID 186**).

iv. Energy security: The issue of a secure supply of energy is touched upon by several stakeholders when referring to topics such as the ability to meet the (increasing) demand for energy, base load, reliability, capacity factor, portfolio diversity, energy intensity, capability for decentralised production, and availability of proper infrastructure. For instance, the documents published by the Ministry of Energy and Natural Resources contain statements such as "*the energy that will be generated from nuclear energy will diversify the country's energy production portfolio*" (**ArgID 372**). Similarly, stressing the ability of NPPs to store energy, these documents put forward that "*Nuclear power plants make an important contribution to the provision of energy supply security in that they allow easy and economical storage of nuclear fuels, which will be needed for many years to come*" (**ArgID 375**). Renewable energy sources are referred to as "*safe, but not reliable*" (**ArgID 354**) by the Ministry of Energy, emphasising the fact that these resources depend on the sun shining and the wind blowing, which implies that they cannot always generate electricity. On the other hand, a representative of the solar energy industry argues: *"As for solar energy, the time of heaviest need (in the summer months-noon) coincides with the time period when the highest amount of energy is produced (when the weather is at its hottest), thus meeting the peak demand naturally. This is not dependence (on sun); rather, it is making efficient use of it. With the development of electricity storage technologies, all the wind, solar energy power plants will become base load power plants within 10 years, producing electricity 7/24"* (**ArgID 197**).

v. Impacts on the trade balance: Related with energy independence, the impact of the energy production projects on the current account deficit and their ability to attract foreign direct investment is discussed extensively by both the opponents and proponents for nuclear energy. The pro-nuclear camp stresses the dependence of the country on the imported natural gas and claims that "*with Akkuyu and the nuclear power plant to be established in Sinop, we will save 16 billion cubic meters of natural gas imports and therefore pay $7.2 billion less for natural gas annually*" (Ministry of Energy, **ArgID 357**). Furthermore, a representative of the Nuclear Industry Association claims that "*when Turkey possesses nuclear technology, it will establish a nuclear supply chain and increase its exports to G-20 countries*" (**ArgID 465**). In a similar vein, another industry and business representative from Ankara argues that "*the capacity to be developed for nuclear power plants will also penetrate into high value-added industries such as energy (…), mining, iron and steel, maritime, aviation, space, defence and automotive. Positive developments in these sectors will increase the exports of our country and decrease the imports, hence reducing the current account deficit"* (**ArgID 462**). On the other hand, a representative of the Mersin Anti-Nuclear Platform argues that agricultural production in the region is an important export item and "*after the nuclear power plant is built, the EU countries or the countries where the products are exported to will introduce radiation-related standards for these products. In the event of a minor accident, they will send the goods back and prohibit*

further purchase. Even the rumour of an accident will be enough, because nobody would want to consume such goods [produced in an area near a leaking NPP]" (**ArgID 60**).

vi. Impacts on local economy: The impacts of energy projects on local development and the current local economic activities are discussed extensively by both national and local stakeholders, proponents and opponents alike. Particularly for the case of the nuclear power plant, proponents argue that the new employment opportunities will help the local economy to thrive and the local industry will develop thanks to high technology of nuclear power plants. Furthermore, an academic known for her pro-nuclear views argues that the "*nuclear power plant will prompt quality migration to the region*" (**ArgID 33**). For instance, a local resident and owner of a barbershop in Mersin claims that his business is doing better since "*the Russians working at the plant construction come to have a shave*" (**ArgID 72**) in his shop. However, opponents claim that "*even the rumours of a radioactive leakage will end the local tourism*" (**ArgID 62**) and "*… a nuclear power plant in Akkuyu would bring about (…) the end of the production of vegetables and fruits in the region*" (**ArgID 110**). As a response to these arguments, the Ministry of Energy and Natural Resources cites examples from countries such as France and the USA. To exemplify the impacts of NPPs on agricultural production, the Ministry says "*it is known that the US, which has the highest number of nuclear power plants, is the country with the largest agricultural exports in the world, with an agricultural export of 42.8 billion dollars*" (**ArgID 392**). As for the impacts on tourism, the Ministry uses a similar argument: "*there are 14 nuclear power reactors on the Loire River in France, which is on the world cultural heritage list, and boating on this river is a very common tourist activity*" (**ArgID 360**).

vii. Impacts on national economy: The discourse of national growth and development is used heavily in the discussions over the energy production alternatives. The argument that nuclear power will enable national development is frequently brought up by the proponents while advocating nuclear power. For instance, a representative of Rosatom argues that "*large industrial investors will easily install their facilities in the regions where they are guaranteed 50-60 years of electricity energy. This will provide a significant advantage for Turkey's industrial development*" (**ArgID 377**). Similarly, the Ministry of Energy claims that "*Turkey has no other option but to build a nuclear power plant that supplies continuous energy, if it wants to achieve 500 billion dollar exports, to have a GDP per capita of 25,000 dollars and to be among the world's top 10 economies with 2 trillion dollars of national income until 2023*". (**ArgID 364**) On the other hand, opponents claim that, "*if desired, growth in the economy can be achieved with less energy consumption. (…) With efficiency measures, growth can be achieved by consuming less electricity, as in the case of some developed countries*" (**ArgID189**). Some further assert that economic growth is not dependent on the type of energy production investment. A lawyer and expert in environmental law states that the discussion about development should not be focused on the investment types, and argues, "*if you are not discussing the development policies of a country and instead are focusing on the type of investment to be carried out, you cannot get a real debate here*" (**ArgID 4**).

viii. Social equity concerns: Concerns over the distribution of the social costs associated with the energy production projects or displacement and migration caused by land appropriation and loss of livelihoods are raised by several stakeholders, regarding both the nuclear energy and other alternatives. For instance, the

documents published by TAEK put forward the following statement that draws attention to the displacement of the local communities: "*Energy resources that require large areas such as hydropower, solar and wind energy can lead to some environmental and social problems, such as (…) the displacement of the people living there*"(**ArgID 206**). On the other hand, the anti-nuclear camp claims that "*current energy policies will further deepen social inequality*" (**ArgID 180**) and "*although it seems that there is a small profit when considering the initially visible costs, it is obvious that these structures* [nuclear power plants] *are harmful, unsustainable and unacceptable, considering all the social costs they incur*" (**ArgID 429**). Another academic endorses solar energy as the most equitable alternative by stating that it "*reaches everyone equally. It does not kill anyone. When talking about renewable energy, we are talking about equality, freedom and peace*" (**ArgID 331**).

3. Participation

i. Local participation in decision-making: As mentioned earlier in **Chapter 4**, the top-down decision-making tradition in Turkey creates discontent, especially among the local citizens and communities. Therefore, not surprisingly, local residents and NGOs in particular express concerns over the local participation in the decisions over energy production alternatives. Regarding nuclear energy in particular, a local resident and shop owner from Sinop states that she resents the project "*because the residents of Sinop have not been consulted*" (**ArgID 100**) about it. Similarly, a journalist reports, "*Decisions were made behind closed doors, and many people in Sinop were left in the dark about them*" (**ArgID 87**). Even a prominent scientist, known for her pro-nuclear views, argues that "*when a nuclear power plant decision is made, it is necessary to pay attention to the locals in the region and certainly not approach the subject as 'I wished it, so I did it, and that is all there is to it*" (**ArgID 38**).

ii. Informed political choice: The argument that a decision about a nuclear power plant is a matter of informed political choice and not mere technicalities is raised by many, especially by anti-nuclear stakeholders. While some stakeholders express concerns over transparency or ignorance of ignorance, other stakeholders propose a referendum mechanism for the decision over a nuclear power plant. For instance, the then spokesperson for the Anti-Nuclear Platform expresses her concerns, saying, "*We do not know what to do with the nuclear waste as yet, nor do we know for how many centuries it will remain. Considering the far-reaching impacts of nuclear power, a government who will only run for 5 years cannot decide on the matter* [to build a NPP] *alone. It is only the citizens that can decide on it but nobody bothers to ask their opinion on the matter."* (**ArgID 304**). On a different note, a national NGO from the anti-nuclear camp raises concerns about the transparency problems inherent to nuclear power and argues that, "*even long before the Chernobyl accident, the nuclear industry was experiencing very serious accidents. The implementation of the secrecy principle in civilian nuclear programs prevented them from getting publicized*". (**ArgID 281**).

iii. Power inequality in decision-making: Many anti-nuclear stakeholders, more particularly local residents, voice their concerns about the disregard for their views by the decision-makers in governmental agencies. A journalist reports that many local residents "*have been fighting for years but nobody bothers to ask [their] opinion*" (**ArgID 96**). Similarly, as a prominent lawyer in the grass root ecological movements in Turkey puts forward, "*the experts have repeatedly said that many questions were left answered in the EIA*

report and that much of the information presented was misleading. Warnings and objections were made repeatedly, but political will, determined to inflict a nuclear threat on us, did not heed any of them" (**ArgID 194**). Such disregard for the opposing views eventually instilled in the local residents a sense of incapability and lack of power to change or even slightly affect the decisions made at national scale. As another lawyer and local resident reports, villagers near Akkuyu site "*feel helpless, thinking what is done is done and cannot be reversed*" (**ArgID 81**).

4. Recognition

i. Appropriateness of the existing legal framework: As an academic suggests, "*the legislation on nuclear energy applications must be thoroughly enacted before the start of the transition to nuclear energy*" (**ArgID 166**). Yet, there is an unsettled disagreement between the pro-nuclear and anti-nuclear stakeholders about the appropriateness of the current legislation. For instance, the opponents argue that, "*the government does not really know how to deal with nuclear waste because no plan or legislation has been drafted yet. The law does not exist anyway*" (**ArgID 10**). Yet, the Ministry of Energy states that the project will be conducted within the legal limits set forth by the legislation, and that "o*btaining the electricity generation license from EPDK (Energy Market Regulatory Authority) necessitates a positive decision by the Ministry of Environment for Environmental Impact Assessment* [for the construction of the NPP]" (**ArgID 388**). For instance, the spokesperson of the Anti-Nuclear Platform claims that the current EIA legislation is not thorough enough and that the legal limits it sets forth seem arbitrary. To illustrate, he says "*the same EIA company may praise thermal power and bad mouth nuclear in an EIA report prepared particularly for a thermal plant, and bad mouth thermal power and praise nuclear when they are working on an EIA report for a nuclear plant"* (**ArgID 303**). Furthermore, opponents raise concerns over the current organisational structure of TAEK, which was originally designated as an independent supervision body. However, currently, TAEK works as an affiliated entity of the Ministry of Energy, which, according to an academic (a prominent nuclear physicist) is inappropriate, since "*TAEK is responsible for supervising the Ministry of Energy in the atomic energy business; thus, it cannot become a subordinate* [of the Ministry of Energy]" (**ArgID 19**).

ii. Implementation of the existing legal framework: As mentioned in **Chapter 4**, the implementation of the environmental legislation is deemed quite inefficient by many. Such concerns are also present for the construction of the nuclear power plants in both Akkuyu and Sinop. For instance, an anti-nuclear activist and journalist states that the agreement with Japan for the construction of Sinop Nuclear Power plant is unacceptable since the site in Sinop has still not been granted a license yet. He then asks the following question: *"How can you make a deal with a country without knowing whether Sinop is a suitable place for a nuclear power plant, and without obtaining this permit?"* (**ArgID 88**). A different implementation concern is raised by many about the precedence principle. This principle stipulates that the reactor type to be built in Turkey should be tested and should already be in operation somewhere else. For instance, a large national environmental NGO points out the plans of using the VVER1200 model reactor in Akkuyu nuclear power plant and emphasizes that "*this condition violates the 'precedence' clause*" (**ArgID 239**). A similar concern is also expressed for the previously untested Atmea I reactors to be built in Sinop. Against these

arguments, nuclear proponents state that *"VVER-1200 type reactors are the improved models of VVER-1000 type reactors with regard to current operating life, power, thermal efficiency and safety systems, (…and) TAEK accepts new designs with improvements on an existing design, as included in the 'Directive on the Licensing of Nuclear Power Plants'"* (**ArgID 397**).

iii. Respect for rights: The reservations about how the electricity production projects will affect the rights of people and nature are voiced by a few stakeholders, particularly by opponents of the nuclear power projects. A national NGO, for instance, states that, "*when large investments are conducted (…) the right to life of all living beings should be respected*" (**ArgID 238**), stressing "all living beings" as the operative phrase. The NGO further argues that the agreement on the Akkuyu project "*constitutes a restriction and violation against the basic rights and freedoms that are protected by the Constitution and set forth by international agreements signed by Turkey*" (**ArgID 236**). From a rather different perspective, a representative of the Anti-Nuclear Platform talks about the right to energy, as follows: "*Just like the right to education, energy is a right too. After privatization, our country has lost control of our energy resources and the domain of energy has been left to the free market and to the greed of the capital. Cheap, high quality and uninterrupted energy could not be provided"* (**ArgID298**).

5. Subsistence

i. Impacts on livelihoods: As the Akkuyu and Sinop sites have similar characteristics; stakeholders from both sites have voiced their concerns over the potential impacts of the nuclear power plant projects on the subsistence farmers and small-scale fishermen living the neighbouring small villages. As a journalist reports, "*Particularly in Sinop, where fishing is the main livelihood source, the whole nuclear power plant debate revolves around fishing*" (**ArgID 14**). Similarly, a local resident from Mersin voices her reservations about the impacts of the Akkuyu project as follows: "*When I used to live in the village, people were engaged in farming: very good tomatoes, peanuts were grown. Right now, there is no agriculture in the village: people do not even cultivate the land for their own consumption anymore"* (**ArgID 84**).

6. Creation

i. Cultural impacts: Many local stakeholders raise concerns about the impacts of the Akkuyu and Sinop projects on the natural beauty of the sites, with which they identify themselves. For instance, a fisherman from Mersin talks about the sea and the nature in Akkuyu in a possessive manner: "*We all stand against the nuclear plant, for the sake of our sea and our nature*" (**ArgID 74**). Similarly, a local resident from Sinop says that, "*it is treasonous to build a nuclear power plant in this paradise which God has bestowed on people*" (**ArgID 97**). Many other local stakeholders build their arguments on how beautiful the nature is, and how important it is for them (see for instance arguments **69, 76,** and **87**). Clearly, there is a cultural sense of place associated with the beauty of the landscape, threatened by the nuclear power projects. On the other hand, from a different perspective, pro-nuclear stakeholders claim that the nuclear technology will *"contribute to the safety and quality culture of the country"* (Ministry of Energy, **ArgID 375**). Similarly, an industry representative claims that since "*safety and quality requirements are at the highest level in the nuclear sector*", it will help the Turkish companies to "*gain the habit of working in international safety standards and with quality management systems*" (**ArgID 461**).

ii. Human capital: Particularly pro-nuclear stakeholders claim that "*nuclear power plants are not only electricity generation facilities, but they also contribute to employment, human capital, and technology"* (Ministry of Energy, **ArgID 344**) and hence nuclear technology "*will increase the potential of qualified workforce of the country"* (**ArgID 154**). On the other hand, a national NGO approaches the issue from a different perspective and claims that Turkey currently lacks the necessary human capital for the construction and operation of these plants. Hence, it argues that *"it is a suicide attempt to insist on nuclear, knowing that most of the nuclear accidents are caused by personnel error and there is lack of qualified personnel* [in Turkey]*"* (**ArgID 283**).

iii. National hegemony: Although it is denied by the nuclear proponents, the aspiration for owning nuclear technology is often associated with proliferation and hence with establishing national hegemony and becoming a global or regional superpower. Consequently, anti-nuclear stakeholders often express their reservations about the possibility of Turkey developing nuclear bombs. For instance, a Member of Parliament and Mersin deputy argues that the government "*wants to become a member of the nuclear club. It aims to have the resources to make atom bombs. It intends to establish arms and gain regional dominance*" (**ArgID 430**). As a response to such claims, nuclear proponents argue that "[h]*aving nuclear energy does not necessarily entail having nuclear bombs. The opposite is not true either*" (**ArgID 324**) and that they "*are all against the nuclear bomb. Turkey should not have it either. We should not engage in such activities*" (**ArgID 337**).

iv. Peace: Many stakeholders put forward arguments establishing links between the energy policy and peace. Although it seems closely related to the arguments of nuclear proliferation, not all arguments on this issue are about nuclear bombs. For instance, suggesting demand management as a viable energy policy, an activist and journalist argues: "*if energy demand has come to the point of threatening life, then we must overturn the entire production process, except for the necessities for survival. This could be done by making a radical move, like stopping the weapons industry"* (**ArgID 199**). Alternatively, putting forward the renewable energy as a means to end oil related wars and hence achieve peace, an academic states "*when talking about renewable energy, we are talking about equality, freedom and peace*" (**ArgID 331**).

v. Technological progress: The argument that transferring nuclear technology will help the country advance in other types of technologies is frequently expressed by the nuclear proponents. For instance, a statement by TAEK is as follows: "*The facilities to be established for nuclear energy production will make important contributions to the development of science and technology infrastructure in our country"* (**ArgID 216**). Similarly, an industry representative claims that nuclear energy has the advantage of "*enhancing the competence in advanced technology and development of material science in our country*" (**ArgID 459**). On the other hand, opponents claim that having a turnkey delivered nuclear power plant that will be owned by Russia or Japan will not necessarily create technological transfer. As a prominent nuclear scientist claims, *"You do not automatically have nuclear technology by buying nuclear reactors. You only have a turnkey delivered nuclear reactor when you buy a nuclear reactor*" (**ArgID 112**).

This extensive list of issues raised by the different stakeholder groups points to the complexity of the debate

about the nuclear energy in Turkey. As the examples provided above illustrate, the stakeholders have been standing in conflict for a wide variety of reasons. For instance, two stakeholders may be expressing opposite views about the same issue, since they hold different values. Alternatively, while a particular issue is ignored by a stakeholder, it may be highly valued for another stakeholder. Next section will display a more transparent and structured presentation of this debate, by making use of a three dimensional Deliberation Matrix (O'Connor et al., 2006)

b) Mapping stakeholders' judgements regarding nuclear energy in Turkey with a multi-criteria framework

Having established the relevant stakeholders, the alternatives and governance issues that they set forth, it is now possible to map the views of each stakeholder group with Kerbabel Deliberation Support Tool (KerDST). Here, the mapping is conducted based on whether the argument presented by a stakeholder contains a (negative or positive) judgement about an alternative, with respect to a specific governance issue. For instance, an argument by the Ministry of Energy and Natural Resources states the following: "*[t]he cost of nuclear fuel and, as a result, the price is at a considerably stable level*" [**ArgID 370**]. In this argument, Ministry of Energy makes a positive judgement about the nuclear energy alternative, with respect to the issue of *affordability*.

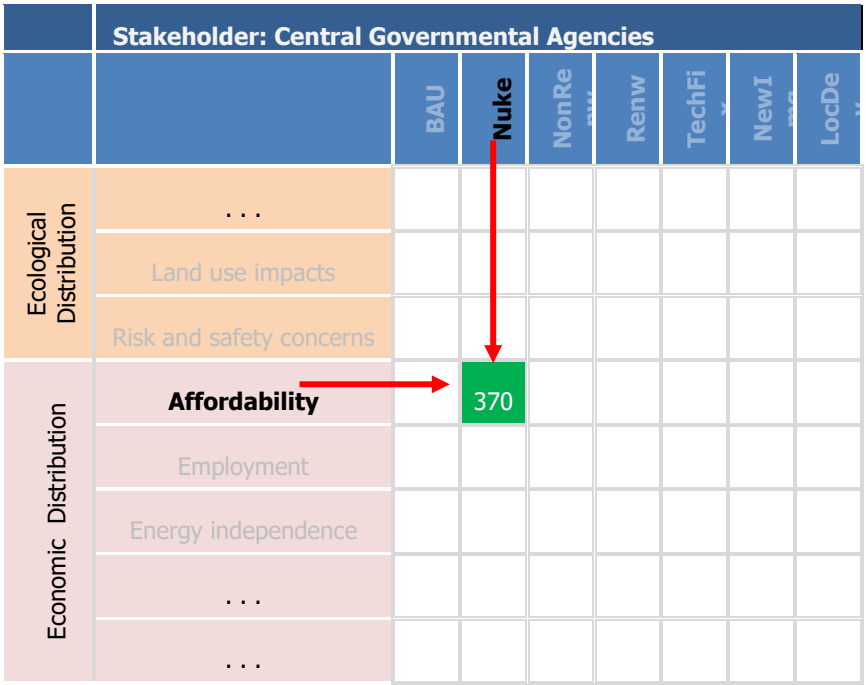


Figure 5-1 An example for mapping the judgements of stakeholders

Mapping all the arguments by a specific stakeholder group for each alternative, across each governance issue results in a two dimensional matrix for each stakeholder group, as represented in **Figure 5.1** above, where positive or negative judgements are presented by colour codes. (Detailed matrices displaying stakeholders' views expressed in each separate issue are presented in **Annex 3**). As such, the constructed matrix provides a snapshot of the views of a stakeholder group by presenting in a very concise manner an otherwise long list of complex arguments. It helps to better visualise the specific positions of each stakeholder group against each alternative. The matrices mapping and presenting the stakeholders' judgements across environmental justice dimensions are presented below:

Central Government Agencies

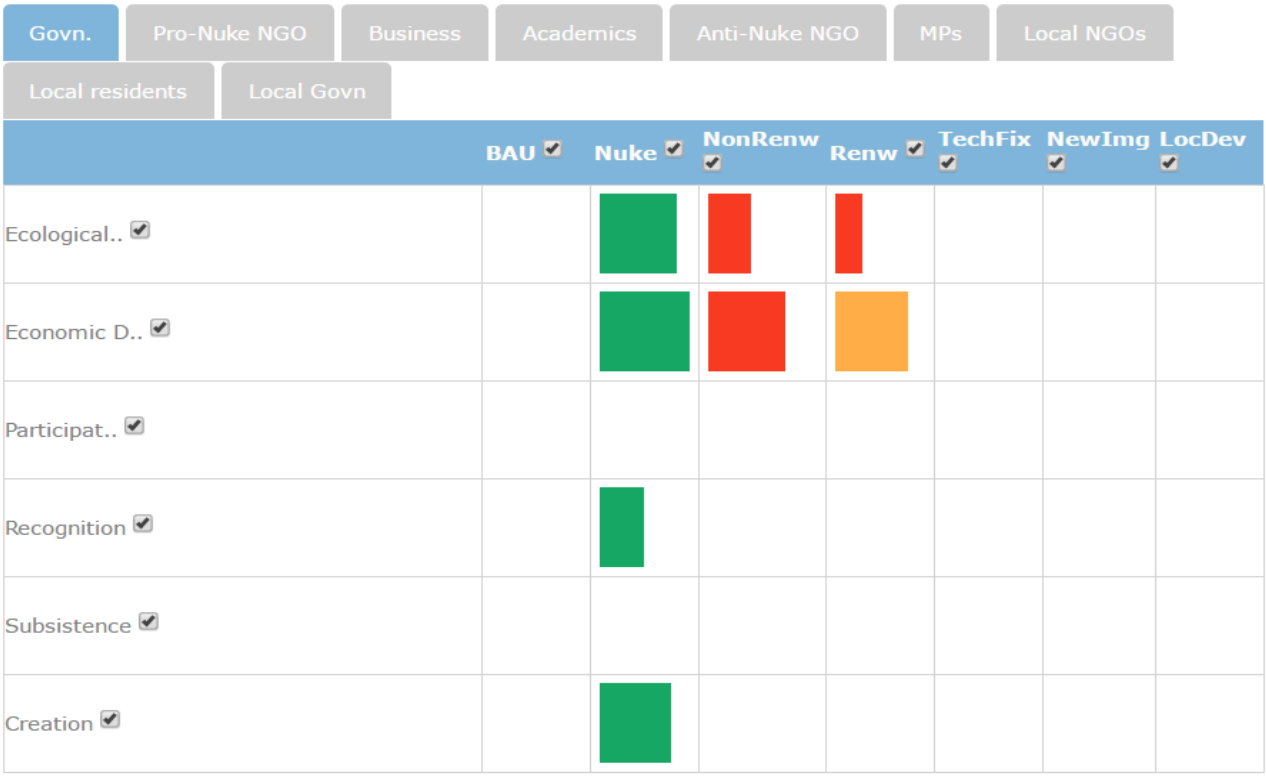


Figure 5-2 The views expressed by governmental agencies regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[36]

As shown in **Figure 5.2**,[37] while discussing the nuclear energy option, governmental agencies express positive views about the nuclear power and negative views about non-renewable and renewable energy sources. In addition, although the ecological distribution and economic distribution dimensions are effectively touched upon, participation and subsistence dimensions are mostly neglected for nuclear, non-renewables, and renewables, with views in recognition and creation dimensions only expressed for the nuclear energy. Moreover, as the table makes it clear, governmental agencies attribute more significance to the economic distribution dimension. Finally, given that the current energy policy of Turkey incorporates plans about expanding the coal-fired power plant fleet and renewable energy capacity (as mentioned in **Chapter 3**), coming across negative views for these two options is unexpected. One conclusion this figure points to is that the governmental agencies look at the decision problem from a rather narrow perspective. It seems that when bolstering their arguments for nuclear power, the governmental agencies tend to dwell on the negative aspects of fossil fuel and renewable energy alternatives as an anchor.

[36] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[37] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.1** in **Annex 3**

Pro-Nuclear NGOs

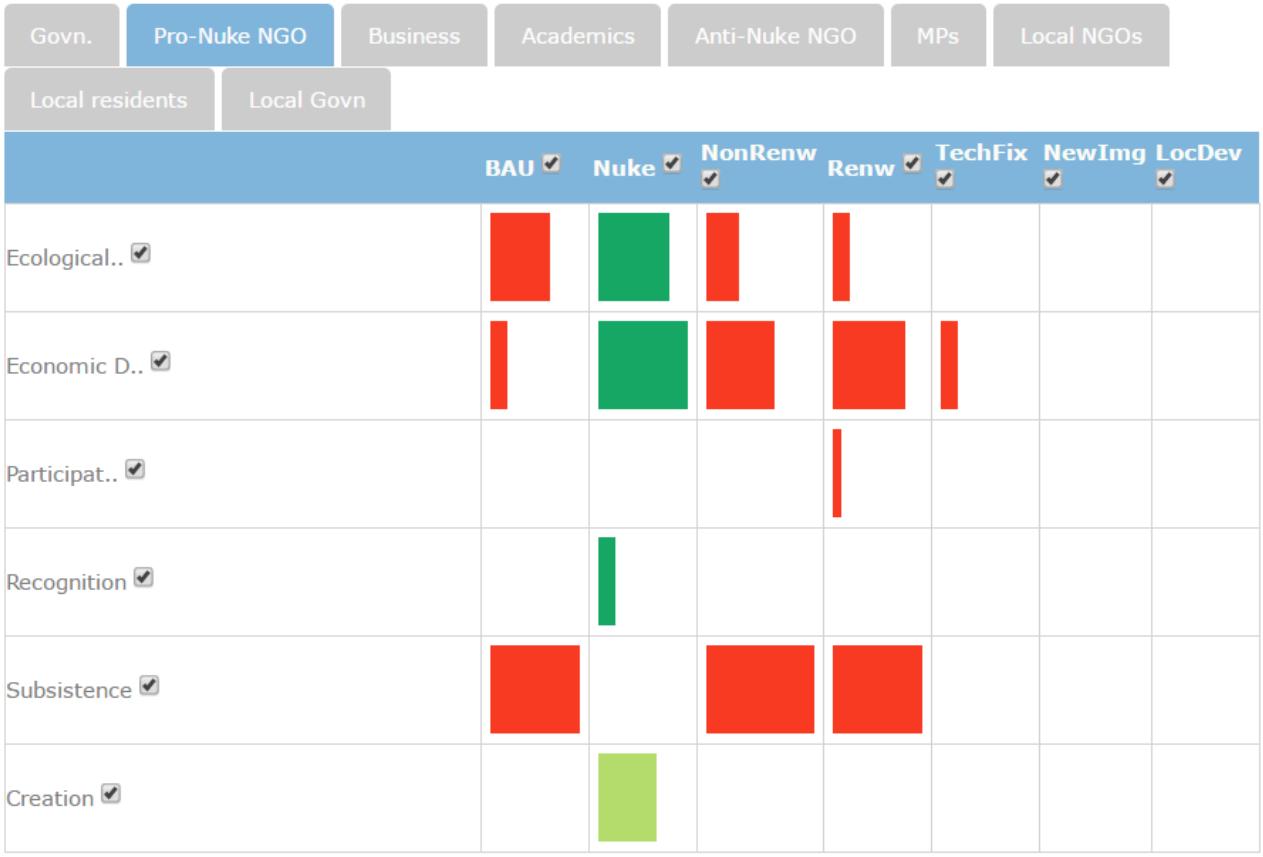


Figure 5-3 The views expressed by pro-nuclear NGOs regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[38]

The **Figure 5.3**[39] above illustrates the views expressed by the pro-nuclear NGOs and their representatives for each option, across the environmental justice dimensions. A quick comparison of **Figure 5.3** with **Figure 5.2** demonstrates that the views of the pro-nuclear NGOs on nuclear power are closely parallel to those of the governmental agencies. That is, both stakeholder groups frequently refer to the issues of ecological distribution, economic distribution, recognition and creation dimensions, while disregarding participation and subsistence dimensions. Again, similar to the governmental agencies, the economic distribution dimension seems to be prioritised by the pro-nuclear NGOs too. However, one aspect in which pro-nuclear NGOs differ from the governmental agencies is that the former expresses views for a greater number of alternatives, thus adopting a wider perspective on the matter.

[38] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[39] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.2** in **Annex 3.**

Business Groups

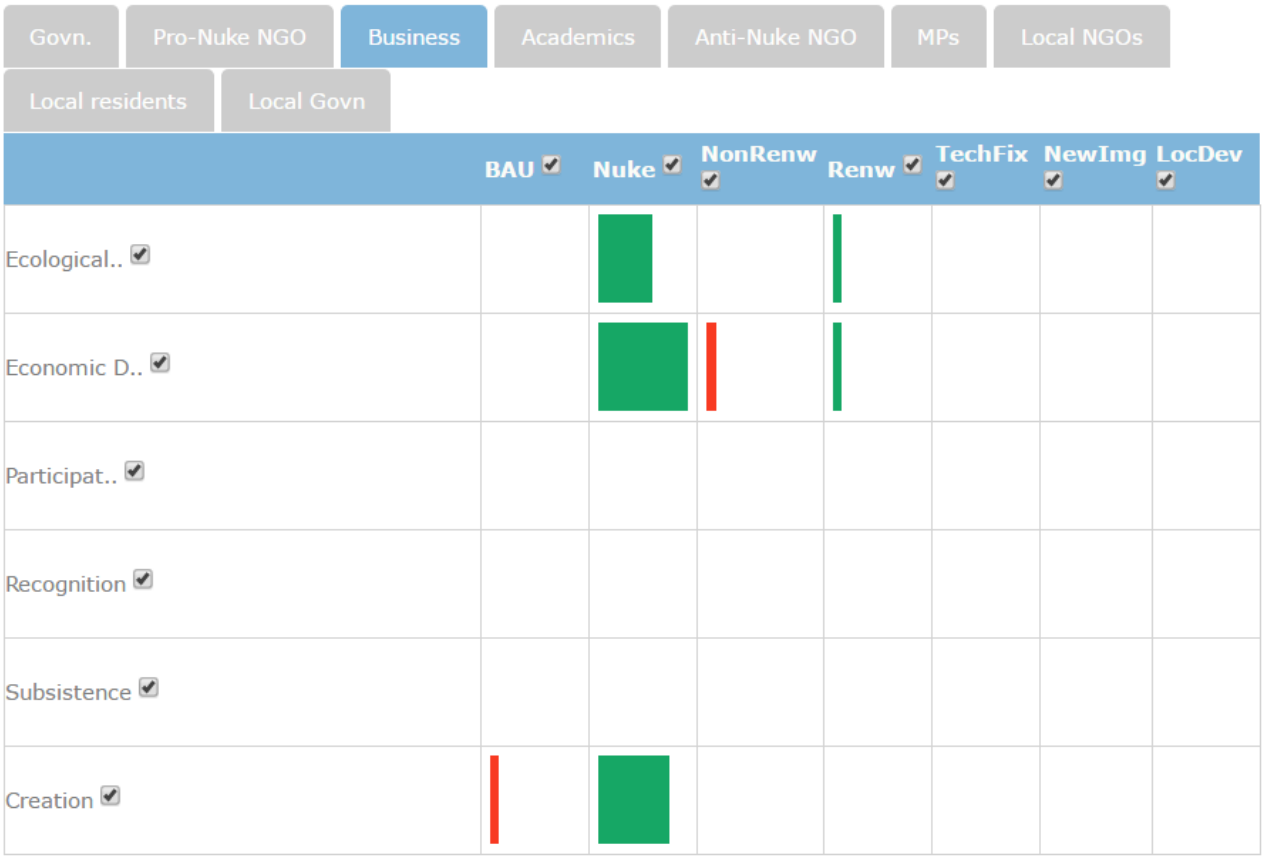


Figure 5-4 The views expressed by business representatives regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[40]

Figure 5.4[41] above demonstrates that the stakeholders in business evaluate the decision-making problem again from a narrow perspective, mostly resting their arguments on the ecological distribution, economic distribution and creation aspects of the nuclear energy, and only briefly mentioning other alternatives. While they seem to attribute more significance to the economic distribution dimension (which is rather expected of the business sector), they neglect the participation, recognition and subsistence dimensions completely for all alternatives. Furthermore, when the **Table A3.3** in **Annex 3** (which displays the views expressed for each separate governance issue) is examined in detail, it is seen that the business sector concentrates on the positive impacts that the nuclear energy could bring on the overall technological progress of the country. Considering that technological progress is closely linked to prospective economic growth, it is no surprise to see that business sector's focus lies in this particular issue.

[40] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[41] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.3** in **Annex 3.**

Academics, Scientists, and Experts

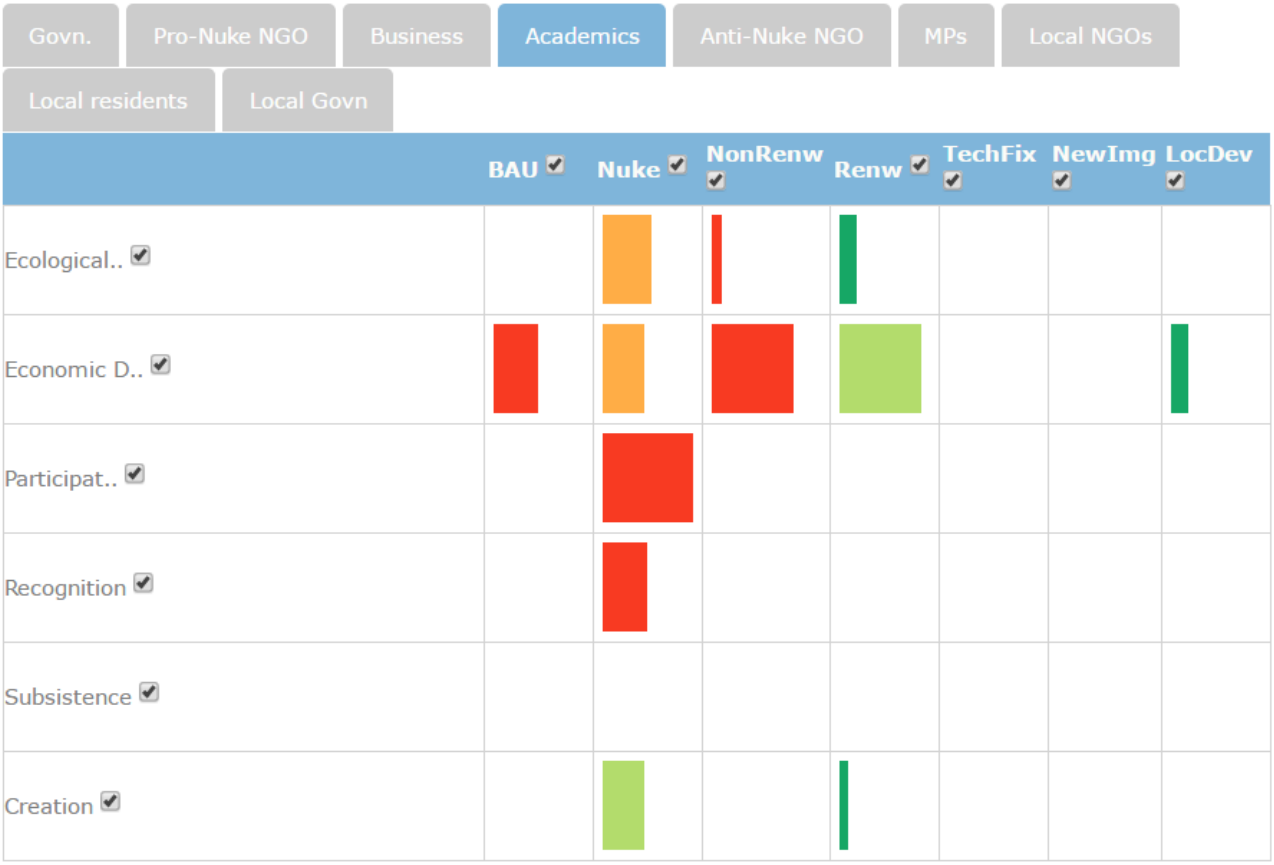


Figure 5-5 The views expressed by scientists and experts regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[42]

Figure 5.5[43] above illustrates the views expressed by the academics, scientists, and experts working in the nuclear technology and science, and shows that, different from the previous stakeholders, they express both positive and negative views on nuclear energy, and in many instances, there is no consensus among them. While they refer to the recognition and participation dimensions, they seem to set aside the subsistence dimension altogether, similar to the governmental agencies and business groups. This figure seems to suggest that academics compare the alternatives largely based on their performance in economic distribution dimension, as they expressed judgments for as many as five alternatives in this particular dimension.

[42] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[43] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.4** in **Annex 3.**

Anti-Nuclear NGOs, Activists, and Journalists

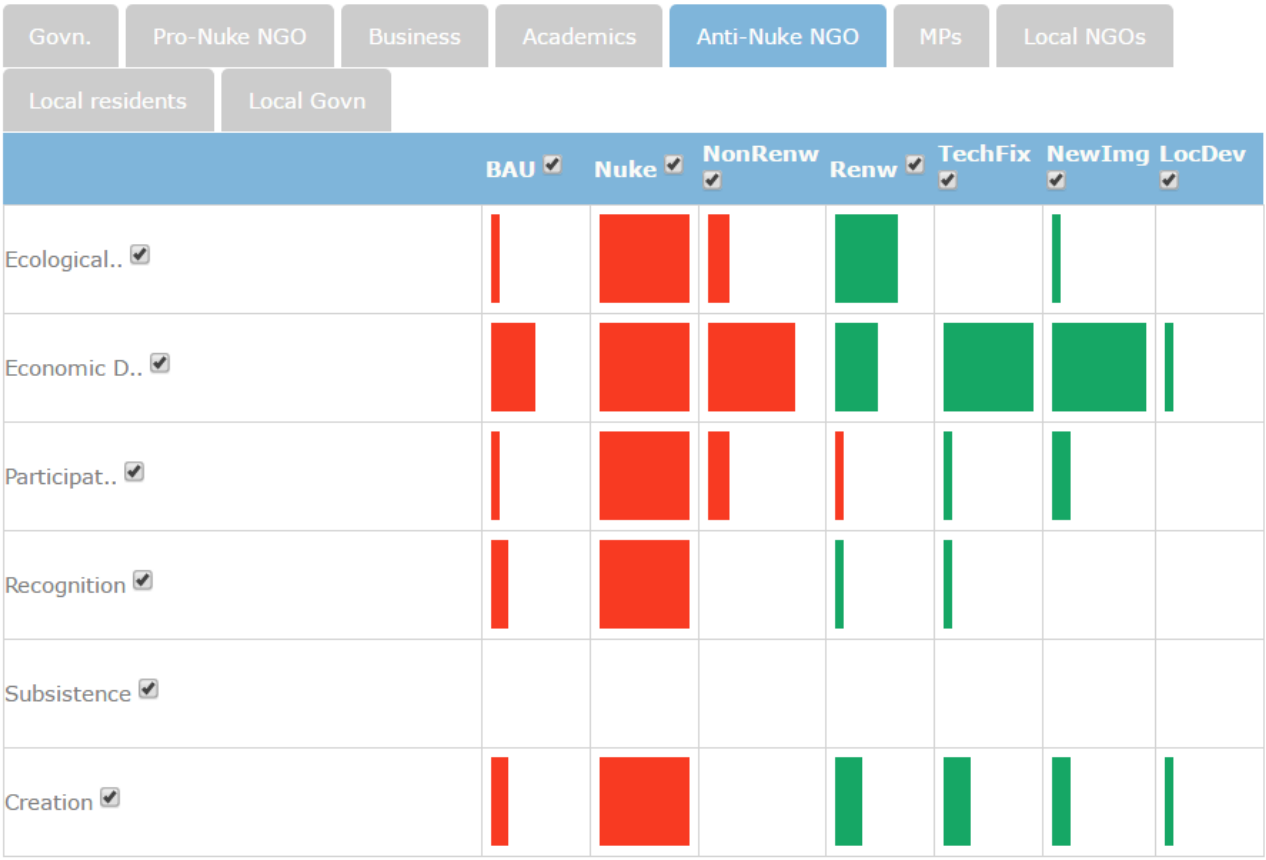


Figure 5-6 The views expressed by anti-nuclear NGOs regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[44]

Figure 5.6[45] displays the views of the anti-nuclear NGOs and activists. Studying the figure alone gives an idea as to the width of perspective from which the anti-nuclear NGOs view the decision-making problem. That is, the anti-nuclear NGOs express judgements about nuclear power across all dimensions except subsistence and state their views for each alternative. While they put forward negative arguments for business as usual, nuclear and non-renewables alternatives, they provide positive views for renewables, technical fixes, new imaginaries, and local development alternatives. It seems that they mostly compare the alternatives according to their economic distribution performance, yet unlike the government, they also make comparisons in other dimensions and for other alternatives. Moreover, pro-nuclear NGOs present arguments about the new imaginaries alternative, showing that they have an alternative vision for energy policy. In addition, they provide views for local development alternatives, showing that their focus is not restricted merely to energy policy.

[44] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[45] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.5** in **Annex 3.**

Members of the Parliament

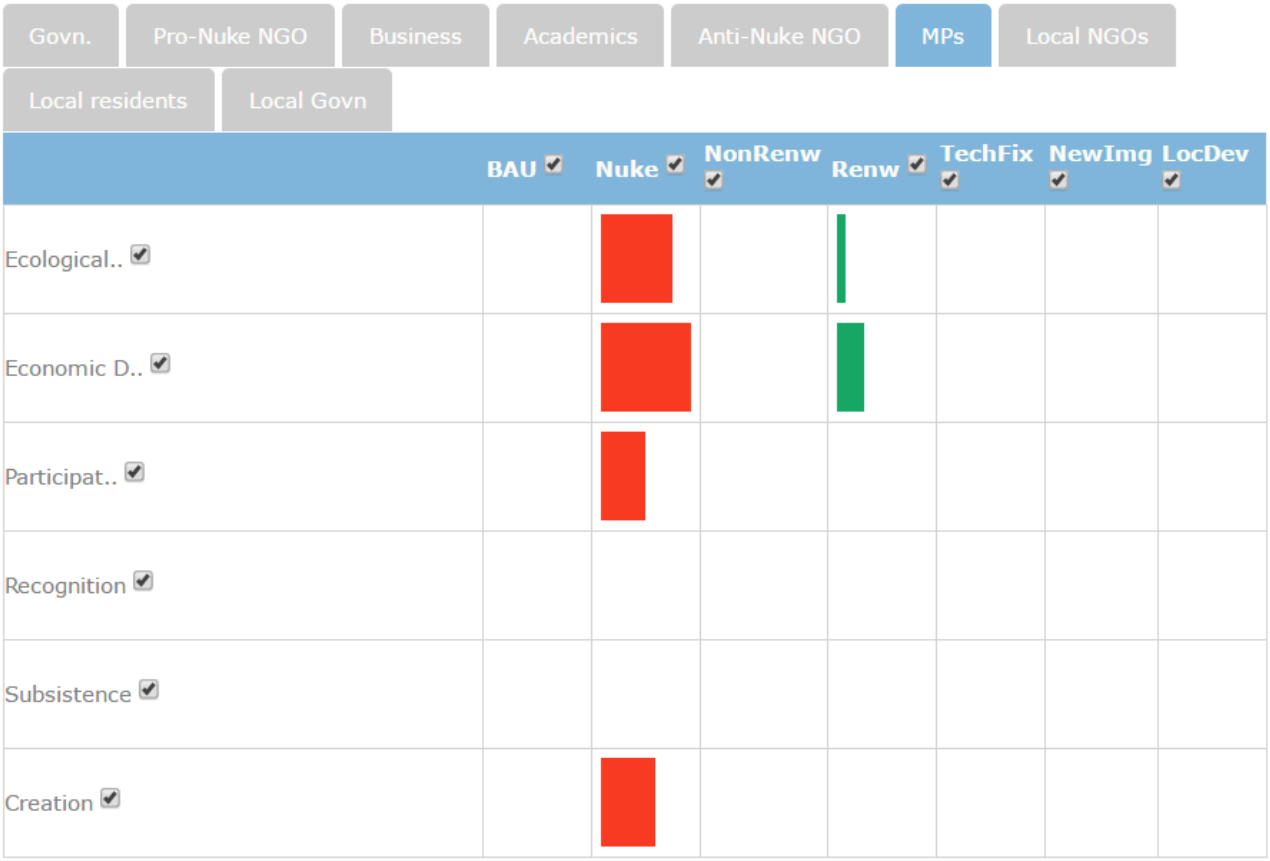


Figure 5-7 The views expressed by members of parliament regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[46]

Figure 5.7[47] above illustrates the views expressed by the members of parliament elected from Mersin and Sinop and shows that they focus mostly on the negative aspects of the nuclear energy in ecological distribution, economic distribution, participation, and creation dimensions. Yet, they seem to overlook the recognition and subsistence dimensions. They also offer arguments in favour of renewables in the ecological distribution and economic distribution dimensions. The fact that they express opinions on the nuclear and renewable alternatives exclusively implies that they adopt a rather limited perspective when discussing the decision problem.

[46] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[47] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.6** in **Annex 3.**

Local NGOs and Activists

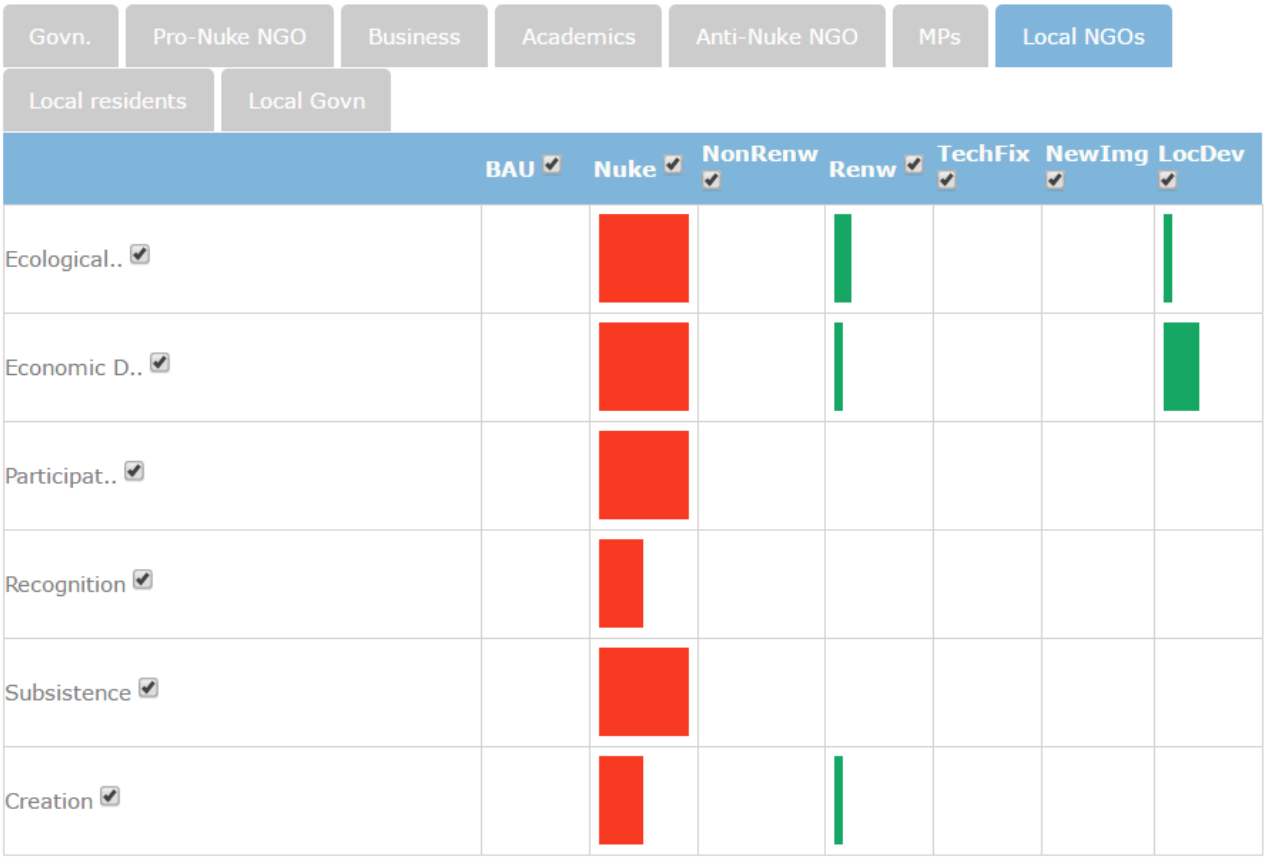


Figure 5-8 The views expressed by local NGOs regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[48]

Figure 5.8[49] above presents the views expressed by the local NGOs from Mersin and Sinop, and reveals that local NGOs provide arguments against nuclear power in all environmental justice dimensions and in favour of renewable energy in ecological distribution, economic distribution, and creation dimension. Another relevant observation is the positive views expressed for the local development alternatives, especially in the economic distribution dimension. This may imply that local NGOs perceive the decision-making problem in a holistic manner and make comparison of the projects by taking account of the local economic impacts, and not as a pure energy policy inquiry.

[48] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[49] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.7** in **Annex 3.**

Local Residents

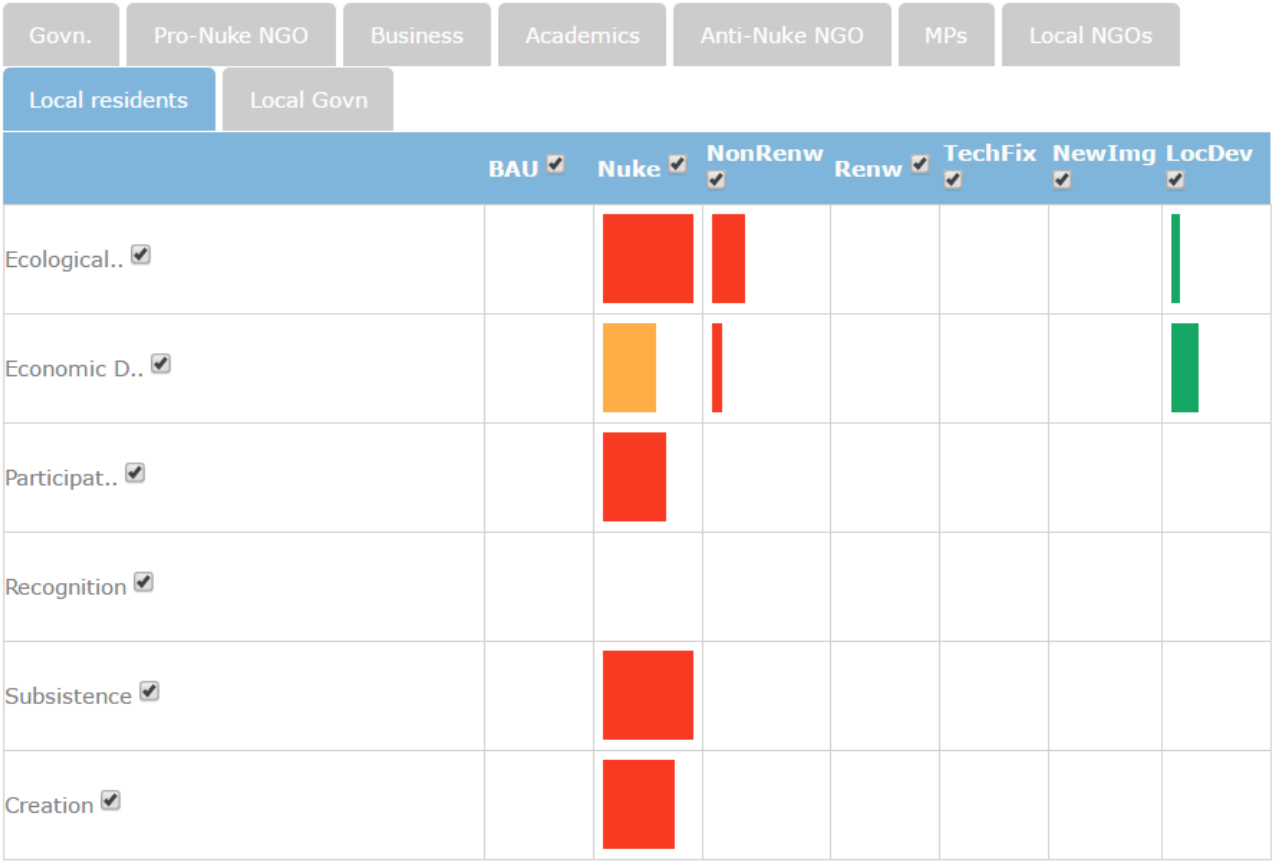


Figure 5-9 The views expressed by local residents regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[50]

Figure 5.9[51] above exhibits the views of the local residents from Mersin and Sinop, and is informative in that local residents express predominantly negative views for nuclear power, with some positive views limited to the economic distribution dimension only. Closer inspection of **Table A3.8** (displaying views expressed in each separate governance issue) in **Annex 3** reveals that local residents express positive views for the specific issues of employment, impacts on local economy, and impacts on national economy. The focus on employment and local economy issues may indicate that some local residents see the nuclear power plant as a project with local development prospects. The focus on the local economy is also evident in the arguments in favour of the local development alternatives. Again, similar to the local NGOs, local residents perceive the project not as an energy policy decision but rather as a local development project, and hence make the comparisons accordingly.

[50] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[51] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.8** in **Annex 3.**

Local Governments

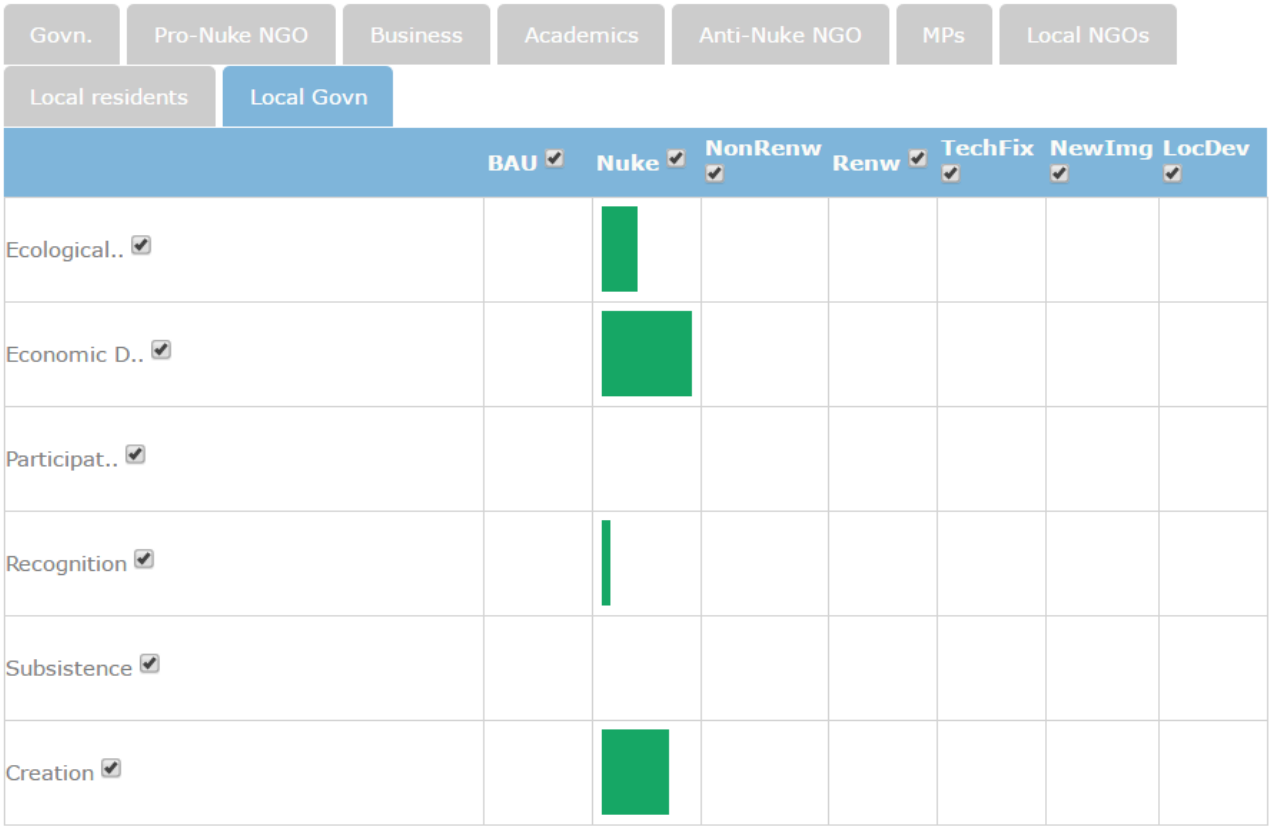


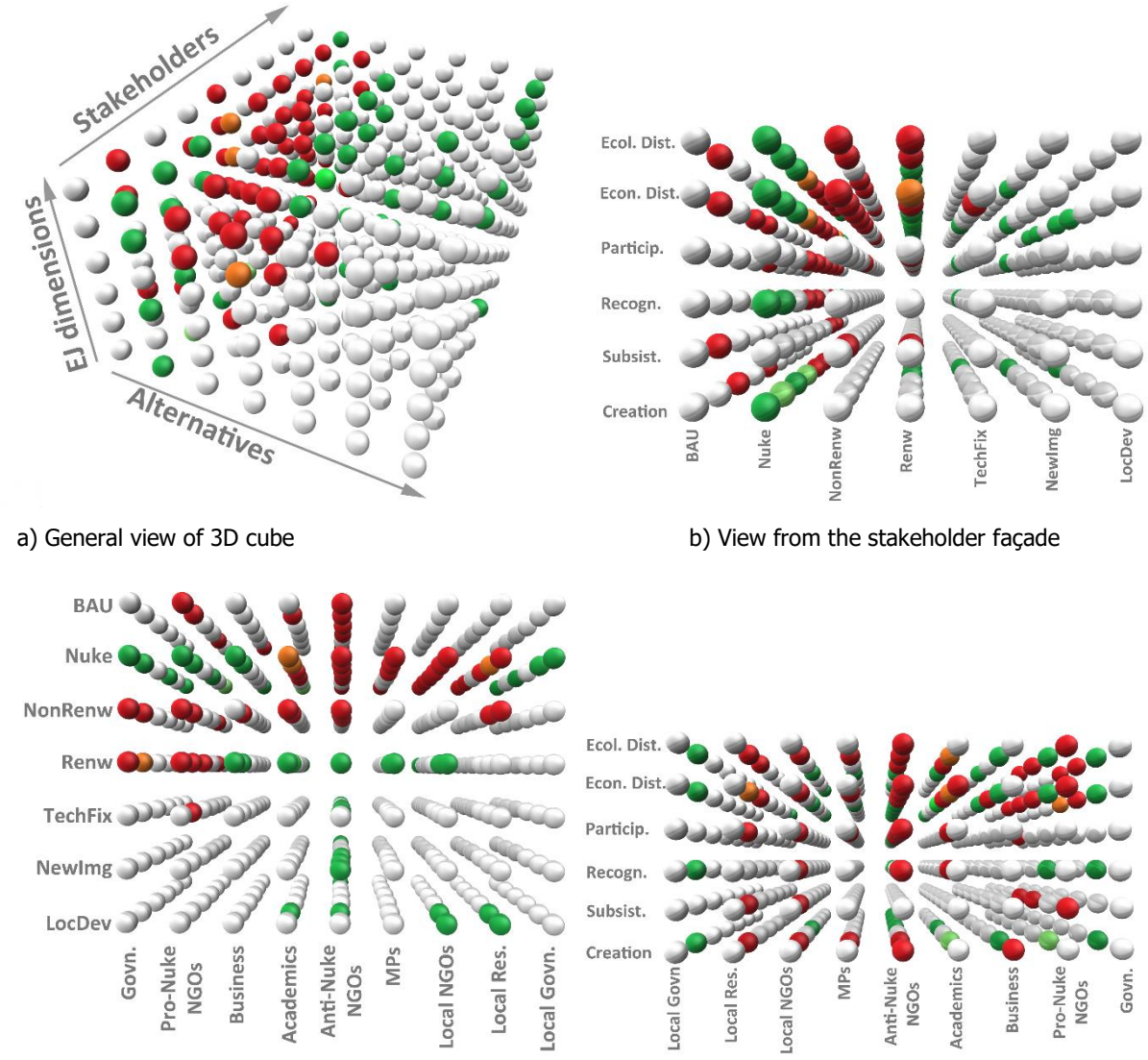
Figure 5-10 The views expressed by local governments regarding electricity generation alternatives
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[52]

Figure 5.10[53] above displays the views of the representatives of local governments and municipalities from Mersin and Sinop. What is particularly interesting about this figure is that, unlike any other stakeholder, local governments is the only group to express views for only one alternative. That is, they present arguments solely in favour of nuclear power plants, not making any statements or comparisons about any other alternatives. A comparison of the views of the local governments in **Figure 5.10** with those of the national government in **Figure 5.2** reveals a considerable overlap between the local governments' views about nuclear energy and those of the national government, the former possibly influenced by the latter. Both groups of stakeholders provide arguments in ecological distribution, economic distribution, recognition, and creation dimensions, while setting the participation and subsistence dimensions aside. This result seems to confirm the association between the centralized, top-down state structure in Turkey and local governments. That is, since local governors are appointed by the national governments, their views are in line with those of the national government.

[52] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[53] The detailed version of this table displaying views expressed in each separate issue is presented in **Table A3.8** in **Annex 3.**

3D visualisation of the deliberation matrix

The matrices displayed above all permit a clear presentation of judgments by each category of stakeholder for each alternative, with reference to each environmental justice dimension. The compilation of all these two dimensional matrices forms a three-dimensional cube, facilitating the comparison between stakeholders, alternatives and dimensions to a great extent. With the aid of a visual representation, the sources of conflicts between the stakeholders can be explored in a more systematic way.



a) General view of 3D cube

b) View from the stakeholder façade

c) View from EJ dimensions façade

d) View from alternatives façade

Figure 5-11 The three dimensional (3D) KerBabel™ Deliberation Matrix and views from different façades
Colour significations: Bad Mostly bad Inconclusive Mostly good Good

Analysing the 3D cube as a whole (as in **Figure 5.11.a**) and concentrating on the two-dimensional layers obtained from the cross-sections of this cube are learning exercises in themselves. For instance, the cube can

be viewed from the EJ dimensions façade as in **Figure 5.11.c** and one can create layers where the judgments by each stakeholder for each alternative is represented for a particular governance issue. As such, the similarities and contrasts between these judgments can be seen clearly. Similarly, viewed from the alternatives façade as in **Figure 5.11.d**, one can obtain for each alternative, layers of two-dimensional matrices that present the judgements of each stakeholder across the governance issues. For instance, **Figure 5.12** below is such a layer that displays the particular matrix for nuclear energy.

Figure 5-12 Stakeholders' views on Nuclear Energy across each EJ dimension
Colour significations: Bad Mostly bad Inconclusive Mostly good Good[54]

Simple graphical descriptions such as the one above prove quite useful in identifying the disagreements between stakeholders, by bringing together multiple perspectives into a common ground and allowing a fair comparison between relevant options, stakeholders, and governance issues in a transparent way. **Figure 5.12**, for instance, demonstrates the respective positions of the stakeholders on the nuclear energy and lends support to the distinction of two main camps in the nuclear debate, as follows:

- Pro-nuclear stakeholders: Government, pro-nuclear NGOs, business groups, and local government.
- Anti-nuclear stakeholders: Anti-nuclear NGOs, members of parliament, local NGOs, and local residents[55].

In addition, **Figure 5.12** helps to pinpoint on which dimensions the stakeholders may disagree with each

[54] The sizes of the colours are proportional to the number of arguments presented by the stakeholders, and not to the relative importance of arguments.
[55] Representatives of the academia (i.e. scientists and experts) have put forward both positive and negative views in different dimensions, therefore they were not categorised under these groups.

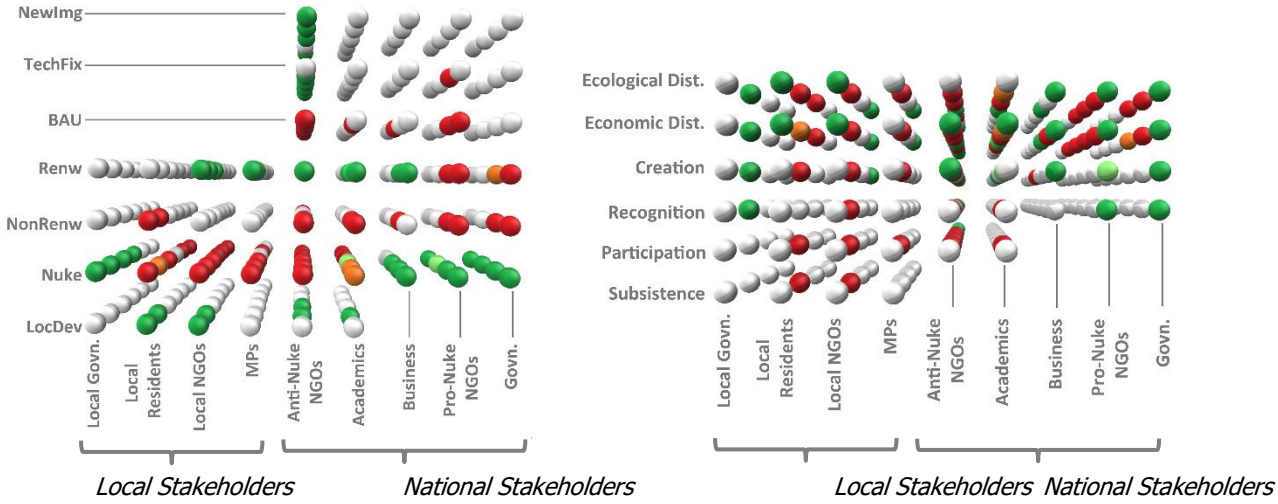
other and hence to identify the sources of the conflict.

The reasons for such discord seem twofold: First, stakeholders disagree since they evaluate the nuclear energy differently in a particular dimension. For instance, while the government provides positive views about nuclear energy in the economic distribution dimension, anti-nuclear NGOs provide negative views in the same dimension. Second, some stakeholders do not prioritise and hence not address a particular issue that another stakeholder does. For instance, while all anti-nuclear stakeholders raise concerns over the participation dimension, none of the pro-nuclear stakeholders addresses this dimension.

In addition to these useful features, the multi-criteria framework enables one to explore the inter-linkages between the local and national scales, and the interaction of the local and national stakeholders with each other. The following section will use this framework to identify the scale-related challenges that contribute to the environmental justice conflict at hand.

c) Identifying sources of conflict related to scale

As presented in **Chapter 2**, it is possible to rearrange the Deliberation Matrix presented in **Figure 5.11** by taking out alternatives and dimensions ignored either by local or national stakeholders, and to obtain the following presentation in **Figure 5.13**. This new representation helps to better visualise how local and national stakeholders operate in different decision-making frameworks, which form two separate cubes that intersect with each other.



a) View from EJ dimensions façade **b)** View from alternatives façade

Figure 5-13 The re-arranged three-dimensional matrix, where non-prioritised a) alternatives, b) dimensions are discarded from the presentation.

The above visualisation in **Figure 5.13** facilitates the identification of scale-related conflict sources between local and national stakeholders. For instance, **Figure 5.13.a** lends support to the deduction that while local residents and NGOs present local development alternatives as relevant options for comparison, national scale pro-nuclear stakeholders (namely the government, business, and pro-nuclear NGOs) perceive this social choice

problem exclusively as an energy policy issue, and hence offer options only related to electricity production. From a similar standpoint, one can see from **Figure 5.13.b** that national scale pro-nuclear stakeholders set aside the subsistence and participation dimensions and do not raise any arguments in those dimensions.

Overall, a multi-criteria/multi-stakeholder framing of the decision problem points to the identification of at least three types of scale related conflict sources between national and local stakeholders that contribute to the environmental justice conflict at hand.

i) *Scales does matter when offering different sets of alternatives for comparison*

The first important point where the scale of the stakeholders matters is when local and national stakeholders frame the decision-making (or option comparison) problem differently. For instance, as shown in **Figure 5.14** below, local stakeholders formulate the problem from a local development perspective. As highlighted in yellow, against the alternative of nuclear energy, they offer other non-energy alternatives such as mass or eco-tourism, investments in agricultural production or development of fisheries. For instance, a local resident and tourism operator from Sinop argues that "*Sinop's salvation lies not in nuclear but in tourism. With a $ 10 million investment in tourism, instead of a $ 22 billion investment in the nuclear power plant, Sinop could become Turkey's tourism paradise for Europe, creating real employment"* (**ArgID 93**). This argument is particularly against the framing imposed by the national government that nuclear energy will create employment opportunities. According to locals, if the decision-making problem is reduced to a sole employment criterion, then other local development alternatives such as tourism may achieve this aim better. In sum, it is evident that for local stakeholders, the priority is not generating electricity but enabling local development.

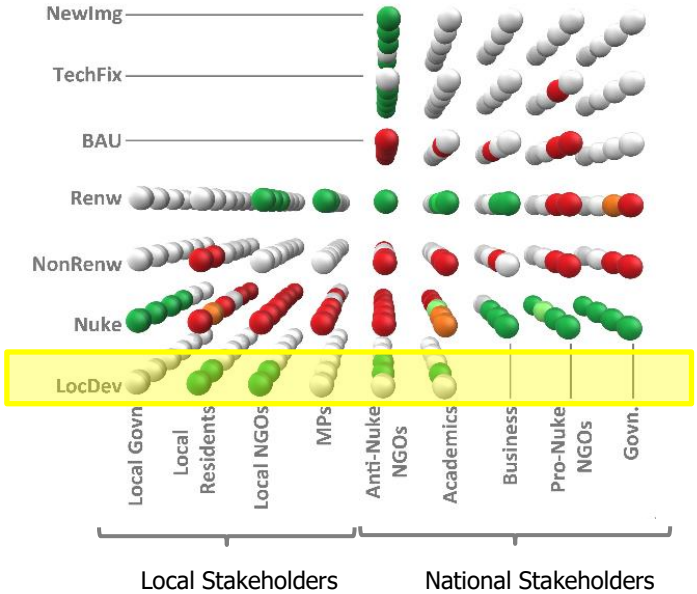


Figure 5-14 The re-arranged three-dimensional matrix, where non-prioritised options are discarded from the presentation.

On the other hand, since the decision-making problem at the national scale is framed around energy production, where Akkuyu and Sinop are selected as suitable sites for nuclear power plants, going for a

tourism alternative in these provinces is counterproductive for the national decision makers. Locals claim that the national government intentionally keeps these zones out of the tourism development plans. For instance, a local NGO representative from Mersin, claims that "*the motorway between Mersin-Antalya was left untouched, knowing that a nuclear power plant would be built*" (**ArgID 418)**, allegedly with the intention of hindering tourism development in Akkuyu. The examples above hint at a tension between the local stakeholders and national government about the distribution of economic benefits. That is, while locals wish for a local development alternative which they hope will create more revenues that will be retained at the local scale, national government pushes forward an energy production project (the larger benefits of which will be taken away from the locals) in favour of the national actors.

ii) *Scale does matter in defining priorities: Local and national stakeholders differ in governance issues they prioritise*

As **Figure 5.15** below displays, there are several instances where a dimension or issue addressed by a particular stakeholder is set aside or ignored altogether by other stakeholders. For instance, while anti-nuclear stakeholders raised concerns over the participation and subsistence dimensions, they are ignored by the pro-nuclear stakeholders. Having such different priorities is a source of conflict not only between the pro- and anti- nuclear stakeholders, but also between local and national stakeholders, although for different reasons. Local stakeholders' priorities differ considerably from those of the national stakeholders, since the scale that they belong to affect their perceptions.

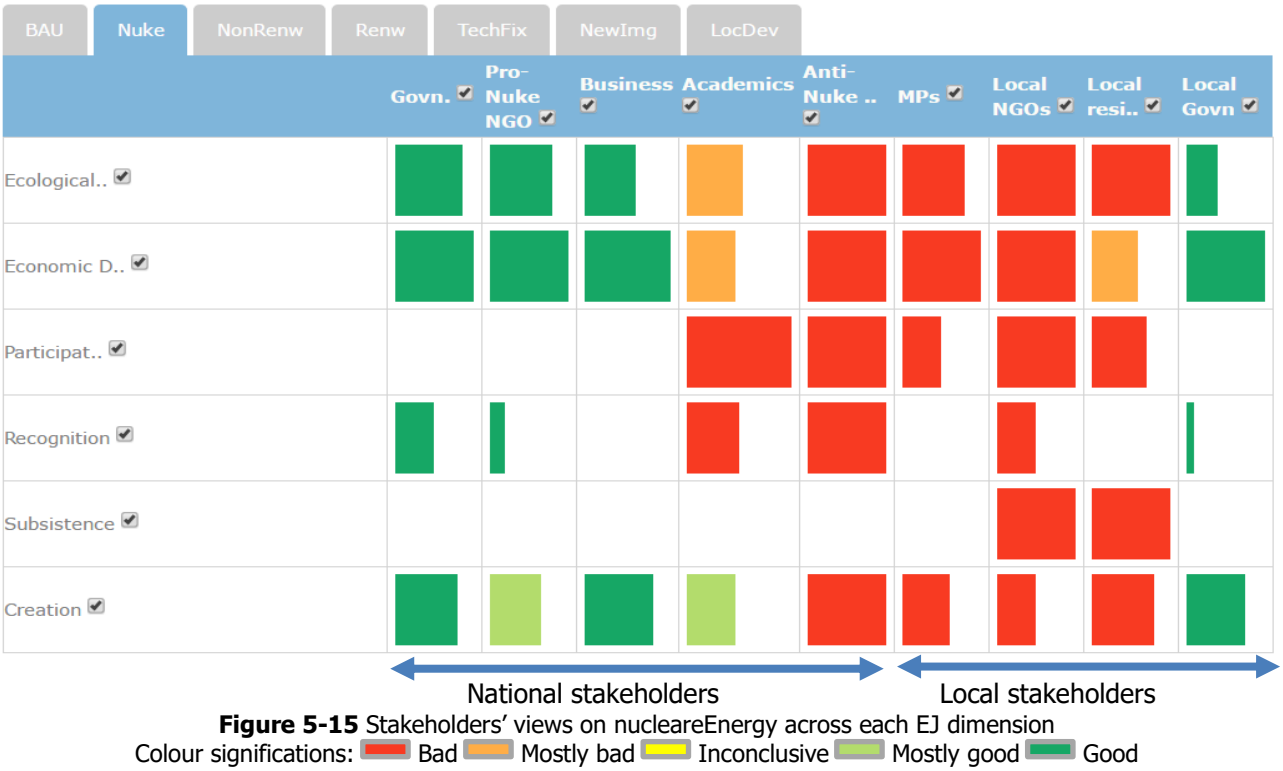


Figure 5-15 Stakeholders' views on nucleareEnergy across each EJ dimension
Colour significations: Bad Mostly bad Inconclusive Mostly good Good

For instance, the arguments in the subsistence dimensions are mainly raised by the local NGOs and local residents, since the potential negative impacts of nuclear power projects on the livelihoods of the people are particularly a disturbance for the local stakeholders. A journalist, for instance, reports that the question of whether fish die around the nuclear power plants is "*the most frequently asked question by locals and one whose answer frightens people the most. Particularly in Sinop, where fishing is the main livelihood source, the whole nuclear power plant debate revolves around fishing*" (**ArgID 14**). Similarly, a local resident from Mersin states that when she "… *used to live in the village, people engaged in farming: very good tomatoes, peanuts were grown. Right now, there is no agriculture in the village; people do not even cultivate the land for themselves*" (**ArgID 84**). Such concerns are exclusively raised by local stakeholders, and no national stakeholder raises similar concerns related to subsistence farming or small-scale fisheries.

Another case in point can be observed for the arguments related to the impacts on climate change. **Figure 5.16** below displays once again the judgements of the stakeholders regarding the nuclear energy for all the governance issues in the ecological distribution dimension. As emphasized by blue squares, national stakeholders present arguments about the climate change. However, as emphasized by the purple squares, local stakeholders seem to be setting this issue aside, since the relationships underlying such a global environmental change may be too complex and difficult to keep grounded in direct observations for the local stakeholders (Wilbanks & Kates, 1999).

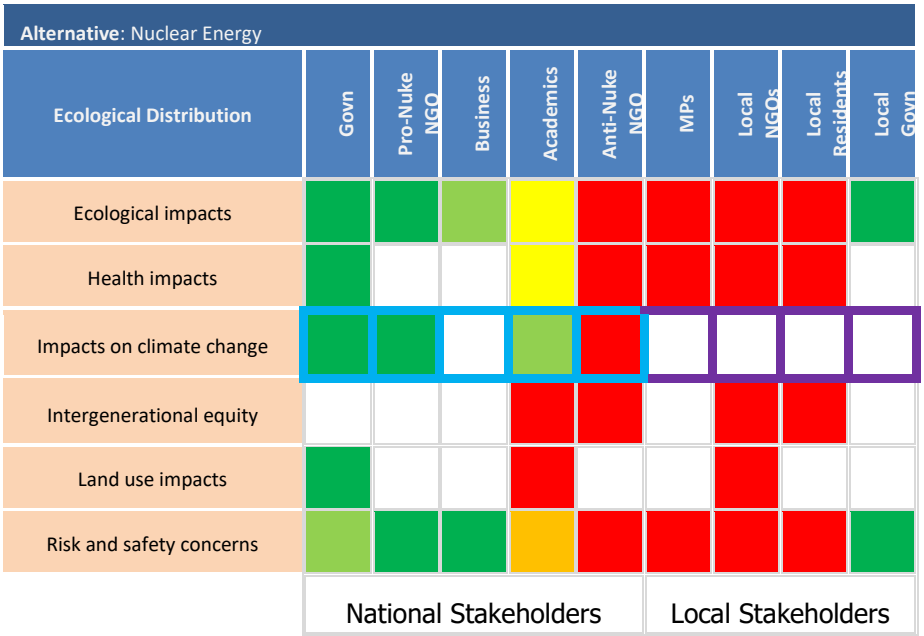


Figure 5-16 Stakeholders' views on nuclear energy in the ecological distribution dimension
Colour significations: Bad Mostly bad Inconclusive Mostly good Good

iii) *<u>Scale does matter in the perception of an EJ dimension or a particular governance issue</u>*

The scale that a stakeholder belongs to may considerably affect how this stakeholder perceives a particular issue. In the nuclear energy case presented above, local and national stakeholders may have different evaluations for the same environmental justice dimension or a particular governance issue, and this is a

frequently observed conflict source identified during the multi-criteria exercise. In order to better illustrate this conflict source, **Figure 5.17** below displays the judgements of the stakeholders regarding nuclear energy for all the governance issues in the ecological distribution dimension. For instance, as emphasized by blue squares, local NGOs and the government express totally opposite judgements regarding the land use impacts of the nuclear energy alternative: while according to the governmental agencies, nuclear energy performs well in terms of the land use impact, local NGOs think that nuclear energy has adverse impacts on the land use.

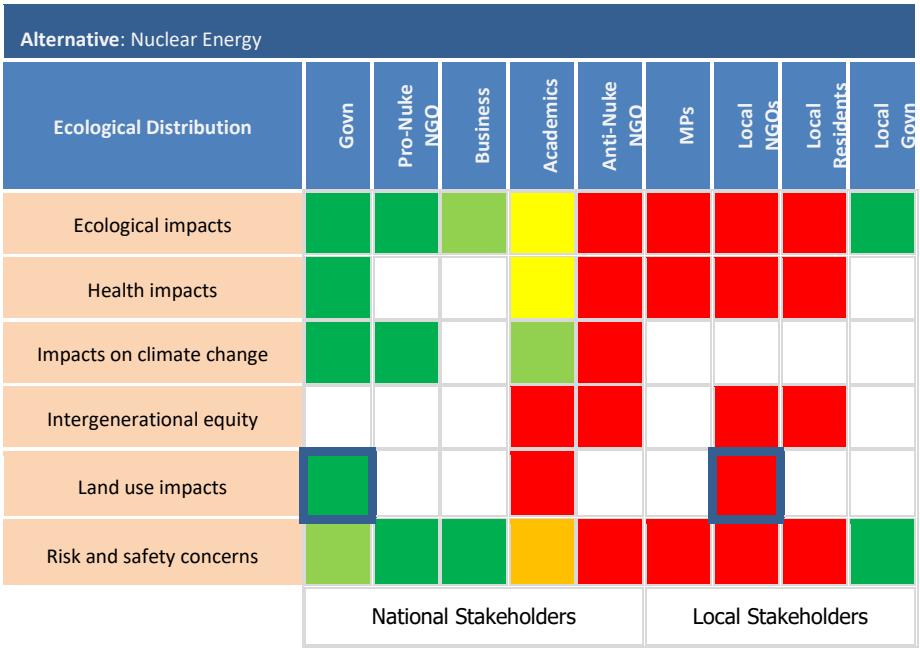


Figure 5-17 Stakeholders' views on nuclear energy in the ecological distribution dimension
Colour significations: Bad Mostly bad Inconclusive Mostly good Good

A closer investigation of this figure reveals that these opposite judgements emerge indeed due to the differences in perceptions of stakeholders at different scales – namely between the local and national stakeholders. Such a discrepancy between stakeholder perceptions gives rise to two main conflicts: the first one arises from the differences in perceptions about the size and scope of the project and the second one is about different values attributed to local beauty. As for the former, from the local stakeholders' perspective, the size and scale of the transformation of the natural site into a built environment is large and hence quite important. In that regard, a local NGO representative from Mersin criticises the Akkuyu project by saying "*Roads are being built; green is taken over by grey concrete all around*" (**ArgID 47**). In contrast, from the national stakeholders' standpoint, the area used for the nuclear power plant is small compared to other alternatives (and hence dispensable or negligible). To exemplify, according to the governmental agencies *"nuclear energy does not require a large area"* (TAEK, **ArgID 206**). Or, as Ministry of Energy states, "*if we were to set up wind turbines instead of Akkuyu NPP, the wind panels would have to cover the entire land of Yalova, or if we were to set up a hydroelectric power plant, the whole city of Düzce would be submerged*" (**ArgID 356**). Moreover, national stakeholders seem to be indifferent to or unaware of the beauty of the landscape, since they perceive that issue from a larger and top-down

perspective. However, such a view is in contradiction with the opinions of the local stakeholders, who (identifying with their surroundings) are more likely to place more emphasis on the local beauties. For instance, a local resident from Sinop argues as follows: "*This is a place like paradise ... We all stand against the nuclear plant, for the sake of our sea and our nature"* (**ArgID 74**). Unlike the national stakeholders, the local stakeholders associate a sense of place and beauty to the natural site to be transformed.

Overall, the three types of conflict sources identified through this multi-criteria exercise aptly present the great extent to which perceptions, values and priorities of people are affected by the scale they are located in, and how a single set of solution offered by stakeholders in a particular scale creates ineffective and/or undesired outcomes in other scales. While currently the decision of building a nuclear power plant is made considering only the issues relevant at national scale, the action is taken at the local scale, which then ignites the conflict described above. Yet, it will not be completely correct to say that a total opposite of the current situation, that is, a bottom-up decision scheme, would create a better outcome. For instance, as presented in the first type of conflict source, the local development alternatives such as tourism development put forward by the locals may be useful in creating benefits that are retained mostly at the local scale. However, the aggregate impact of such alternatives, focused entirely at the local scale, may not create effective outcomes at the national scale either.

The multi-criteria exercise above conducted from a scale perspective is helpful in identifying and exploring the sources of tensions, divergences, and conflict of interests between stakeholders, by enabling a transparent organisation of a variety of categories of information. It further helps in understanding which conflicts arise due to scale, which ones arise due to value plurality etc. (O'Connor et al., 2006). The identification of the inter-linkages and interactions between the local and national stakeholders is a necessary step for finding pathways to mediating a specific ecological distribution conflict. Such a framing of the problem helps addressing, if not completely resolving, the three types of scale-related conflict sources identified above, as follows:

i) First, thanks to the multi-criteria exercise, a more complete set of policy options can be identified – these options may come from different scales. The first type of the conflict source occurring due to stakeholders putting forward different sets of alternatives can be addressed if a deliberative multi-criteria framework is used. As such, stakeholders may become aware of the policy options that they have not thought of before, or may be required to frame the social choice question from a different angle.
ii) Next, the social choice problem can be handled using a larger set of governance issues, put forward by both national and local stakeholders. That is, while local stakeholders become more aware of the national stakeholders' priorities, their own priorities are now known better by the national stakeholders. As such, the problems related to the second type of conflict source described above can be better addressed.
iii) Lastly, if conducted in a participatory and deliberative manner, the multi-criteria exercise brings together the members of the different stakeholder groups and the exercise itself becomes a collaborative learning process. That is, the participants become able to exchange views among themselves, learn from each other and hence get involved in a negotiation process that may lead to modifications in their previously declared

judgements about particular options and governance issues, which may lead to a compromise solution (O'Connor et al., 2006). In a way, through active interaction, stakeholders learn from each other why they have different evaluations for the same issues. Such mutual awareness, in turn, may help addressing the issues related to the third type of scale related conflict sources described above, and in a way, the multi-criteria framework opens avenues for a more effective multi-scale governance mechanism.

While the first two types of sources are about the representation of the social choice problem at hand, the third conflict source is about the society's capability of finding a compromise solution. The multi-criteria framework is particularly useful in the representation of the problem, and hence, addressing the first two types of conflict source; however, addressing the third type is more complicated. That is because, as O'Connor (2006) puts forward, even if there is a consensus on the representation of a social choice problem (i.e., there is a well-identified performance indicator set and good quality data is available), finding a societal consensus on a potential alternative may not be possible in some cases. Such situations are what Funtowicz and Ravetz (1994) call "post-normal", Rittel and Webber (1973) call "wicked problems", or O'Connor, (2002) calls "impossible social choice dilemmas". It is difficult to formulate simple rules for policy selection for such cases where especially the distribution of benefits (or costs) of a certain policy action is at stake.

The framework presented above provides a snapshot of the current the decision-making problem for introducing nuclear energy into Turkey's energy portfolio, and it is possible to deduce that this may also be considered a wicked problem. As O'Connor et al. (2006) argues, the policy or decision-making problems such as the one presented above suffer from the lack of a single desired objective sought by all stakeholders. That is, none of the currently presented alternatives by the stakeholders satisfies all the needs and expectations of all stakeholders at the same time. While some focus on the objective of maximising the net benefit (in monetary terms), others may choose the objective of minimising the risk (and hence adopting a precautionary principle) or reduce the ecological impact (that is, stay within the ecosystems carrying capacity). However, there is no single aggregate indicator measuring these different objectives at the same time. Framing a wicked problem as presented above in a multi-criteria fashion shows that the decision making process is a complex and complicated one and trying to simplify it through aggregate measure will create reductionism, which, in turn, will create further problems related to the participation and recognition, and will deepen the environmental justice conflicts.

All in all, it is now evident that framing a conflicted decision-making problem through multi-criteria / multi-stakeholder framework is helpful in identifying the challenges resulting from the cross-scale interactions between stakeholders and presenting them in a transparent and comprehensible manner. Even though it may not suggest an immediate solution to a wicked problem, it is still useful to identify how and why the problem is indeed wicked. The full characterisation of a wicked problem helps the understanding of "the way things are" (O'Connor et al., 2006). If the current set-up does not lead to an acceptable solution for all stakeholders, then it may be useful to re-think the fundamental assumptions and reasons behind this particular policy and look for a new set-up, with a new frame. For instance, in the case of nuclear energy, while the national stakeholders frame the problem as a comparison of different energy sources (which are necessary for the

national development), local stakeholders define the set-up as a comparison of local development alternatives. At this point, questioning why the national or local development is desired may lead into a new social choice set-up where the problem becomes the discussion of new imaginaries, or search for a collectively decided imaginary that may create a pathway to a solution desired by each stakeholder.

Conclusion

Ecological distribution conflicts are encountered at different places in the world, and often at multiple (spatial and temporal) scales – with impacts at different scales and/or causal relations ranging from local to global. In the face of challenges like value plurality, incommensurability, uncertainty, and participation surrounding these conflicts, this thesis argued that deliberative and multi-stakeholder multi-criteria evaluation frameworks might open new avenues for environmental governance mechanisms for the conflicts with cross-scale interactions by underlining scale related perceptions/issues that drive part of such conflicts.

In this context, the thesis first provided a theoretical and empirical overview of ecological distribution conflicts and presented concrete examples of cross-scale linkages by making use of the *Global Atlas of Environmental Justice* (EJAtlas). Next, it offered a cross-scale deliberative multi-criteria framework by drawing on the existing cross-scale governance and multi-criteria evaluation literatures. Subsequently, it applied this framework to a real world problem - the decision of adding nuclear energy to the energy portfolio of Turkey. Towards this end, first it contextualised the decision problem at hand by presenting a brief account of the environmental mobilisations, environmental governance and energy-related ecological distribution conflicts in Turkey and then recounted the historical development of the nuclear power in the world and in Turkey respectively. Lastly, it framed the debate over nuclear energy in Turkey using the multi-criteria/multi-scale framework it has established earlier, attempting to show that it may offer viable conflict governance mechanisms that serve the principles of environmental justice better.

As part of the application of the multi-criteria/multi-scale framework, first a qualitative and textual exploratory analysis of the nuclear debate in Turkey was presented to identify the relevant stakeholders, policy alternatives and governance issues at hand, forming the three axes of the three- dimensional deliberation matrix, devised by O'Connor et al. (2006). Next, the judgements of each stakeholder, in each policy alternative, and across all governance issues were presented in this three dimensional matrix, facilitating the identification of the main scale related conflict sources between stakeholders in different scales, showing how and to what extent scale matters in governing ecological distribution conflicts. Overall, at least three types of scale related conflict sources between national and local stakeholders that contribute to the environmental justice conflict at hand were identified. These are as follows:

i) *Scales does matter when offering different sets of alternatives for comparison*

The multi-criteria exercise reveals that local and national stakeholders frame the decision-making (or option comparison) problem at hand differently. Some local stakeholders formulate the

problem from a local development perspective, and hence, against the alternative of nuclear energy, they offer other non-energy alternatives (e.g. mass or eco-tourism, investments in agricultural production or development of fisheries). However, the decision-making problem at the national scale is framed around energy production, with Akkuyu and Sinop being selected as suitable sites for nuclear power plants, and compared options are policies about energy production (such as renewable energy or fossil fuels). Such mismatch between the local and national option sets reveals the tension between the local stakeholders and national government about the distribution of economic benefits. That is, while locals wish for a local development alternative which they hope will create more revenues that will be retained at the local scale, national government pushes forward an energy production project (the larger benefits of which will be taken away from the locals) in favour of the national actors.

ii) *Scale does matter in defining priorities: Local and national stakeholders differ in governance issues they prioritise*

The applied multi-criteria framework revealed that local stakeholders' priorities differ considerably from those of the national stakeholders, since the scale they belong to affects their perceptions to a great degree. In fact, there are several instances where a dimension or issue addressed by a particular stakeholder is set aside or ignored altogether by other stakeholders. While some of such differences are due to the differences in perceptions affected by the scales of the stakeholders, some other are due to differences in values and beliefs. As an example of such a mismatch between national stakeholders, for instance, the multi-criteria framing reveals that the concerns raised by the anti-nuclear stakeholders over the participation and subsistence dimensions were totally ignored by the pro-nuclear stakeholders. However, the multi-criteria exercise also showed that while the arguments in the subsistence dimension are mainly raised by the local NGOs and local residents, (since the potential negative impacts of nuclear power projects on the livelihoods of the people are a disturbance particularly for the local stakeholders. On the other hand, arguments related to the issue of climate change are only presented by national stakeholders, while local stakeholders seemed to be setting this particular issue aside. This finding supports the argument put forward by Wilbanks and Kates (1999), that is, the relationships underlying global environmental change such as climate change, may be too complex and difficult to keep grounded in direct observations for the local stakeholders.

iii) *Scale does matter in the perception of an EJ dimension or a particular governance issue*

The scale that a stakeholder belongs to may considerably affect how this stakeholder perceives a particular issue. In the nuclear energy case presented in this thesis, local and national stakeholders presented different evaluations for the same environmental justice dimension or particular governance issue, and this is a frequently observed conflict source identified during the multi-criteria exercise. For instance, in the context of Turkey, local and national stakeholders had different perceptions about the size and scope of the nuclear power plant project. While the local stakeholders perceived the size and scale of the transformation of the natural site into a built

environment as being large and hence quite important, the national stakeholders perceived the area used for the nuclear power plant as small (and hence dispensable or negligible), compared to the space needed for the construction of other alternatives. Moreover, national stakeholders seemed to be indifferent to or unaware of the beauty of the landscape, since they perceive that issue from a larger and top-down perspective, whereas local stakeholders associated a sense of place and beauty to the natural site to be transformed.

The three types of conflict source identified through the multi-criteria exercise aptly present the great extent to which perceptions, values and priorities of people are affected by the scale they are located in, and how a single set of solution offered by stakeholders in a particular scale creates ineffective and/or undesirable outcomes in other scales. Furthermore, the multi-criteria exercise above, conducted from a scale perspective, is helpful in identifying and exploring the sources of tensions, divergences, and conflict of interests between stakeholders, by enabling a transparent organisation of a variety of categories of information (O'Connor et al., 2006). It helps in understanding which conflicts arise due to scale, and which ones arise due to value plurality.

In that regard, following the argument put forward by Zermoglio et al. (2005), the multi-scale framework for framing the conflict over nuclear power plants in Turkey, provides substantial information and impacts benefits as follows, to name a few:

i) *Better problem definition:* Assessing the problem from both local and national stakeholders' perspectives contributed to a fuller understanding of the issues at hand.
ii) *Improved analysis of scale-dependent processes:* The multi-criteria exercise showed that the perceptions and perspectives of the stakeholders are dependent on their scale.
iii) *Better understanding of causality:* Studying multiple scales simultaneously helped to a great extent in understanding the implications of changes at a given scale and the cross-scale relationships between environmental, social, and economic processes.
iv) *Potential for improved policy alternatives:* Now that policy-makers are more aware that the key issues identified by the local stakeholders are different from those identified by national stakeholders, policy alternatives have a greater potential to incorporate different perspectives from different scales.

Overall, the multi-criteria framework presented in this thesis enables a better understanding of the cross-scale relationships between environmental, social and economic processes, and there is a greater potential to incorporate different perspectives from different scales into the policy-making process. Although the better understanding of a problem may not necessarily mean that a better policy decision will be made, "it does provide a sound basis for making better decisions and for holding decision makers accountable" (Reid et al., 2006, p. 1) and the information and impact benefits above help finding pathways to mediating ecological distribution conflicts. In that sense, framing the problem in this manner helps addressing, if not completely resolving, the three types of scale-related conflict sources identified above, as follows:

i) First, thanks to the deliberative multi-criteria exercise, a more complete set of policy options can be identified – these options may come from different scales. As such, stakeholders may become aware of the policy options that they have not factored in before, or they may be required to frame the social choice question from a different angle, which provides a remedy for the first type conflict source presented above.

ii) Next, the social choice problem can be handled using a larger set of governance issues put forward by both national and local stakeholders. That is, local stakeholders become more aware of the national stakeholders' priorities, and vice versa, their own priorities will be known better by the national stakeholders, too. As such, the problems related to the second type of conflict source described above can be better addressed.

iii) Lastly, if conducted in a participatory and deliberative manner, the multi-criteria exercise brings together the members of the different stakeholder groups and the exercise itself is transformed into a collaborative learning process. Once the problem at hand is represented in a multi-criteria structure and different initial positions are identified, the framework can be transformed into a tool for social expression (Gamboa, 2008). That is, the participants become able to exchange views among themselves, learn from each other and hence get involved in a negotiation process that may lead to modifications in their previously declared judgements about particular options and governance issues, which may lead to a compromise solution (O'Connor et al., 2006). In a way, through active interaction, stakeholders learn from each other why they have different evaluations for the same issues. Such mutual awareness, in turn, may help addressing the issues related to the third type of scale related conflict source described above, and in a way, the multi-criteria framework opens avenues for a more effective multi-scale governance mechanism.

Although the multi-criteria exercise is quite useful for a transparent organisation of different categories of information and stakeholders, it is not without limitations. For instance, in many conflicted cases, including the conflict over nuclear energy in Turkey presented in this thesis, it is difficult to bring all the stakeholders together. Some stakeholders may be unwilling to participate in such processes due to distrust in governments or governments/decision makers may not heed the arguments of the other stakeholders such as civil society, and choose not to run a participatory procedure (Gamboa, 2008). Furthermore, power relations between stakeholders may be quite problematic during the deliberation exercises since (economically, politically, or institutionally) powerful actors may influence the judgments of less powerful actors. Lastly, the differences of level of knowledge between stakeholders is another important issue to overcome, since "equal distribution of knowledge is a fundamental prerequisite for deliberation and learning" (Gamboa, 2008, p. 142).

The multi-criteria exercise presented in this thesis provides only a snapshot of the decision-making problem for introducing nuclear energy into Turkey's energy portfolio. It presents the current (initial) positions of different stakeholder groups and tries to provide a pathway where stakeholders leave these initial positions and move toward a societal consensus. As O'Connor et al. (2006) argue, the policy or decision-making problems such as the one presented above suffer from the lack of a single desired objective sought by all

stakeholders. Even if there is consensus on the representation of a social choice problem (i.e., there is a well-identified performance indicator set and high quality data is available), reaching a societal consensus on a potential alternative may not be possible in some cases. Hence, although the information benefits that the multi-criteria exercise delivers are quite substantial, impact benefits depend highly on the willingness (and ability) of the stakeholders to participate and to make compromises.

All in all, this thesis aimed at contributing both to the cross-scale environmental governance and to the deliberative multi-criteria/multi-stakeholder evaluation literatures, particularly in framing and understanding cross-scale conflicts. The constructed deliberation framework tried to improve cross-scale linkages from local to global and to provide pathways for generating legitimate outcomes that recognise environmental as well as socio-economic needs, with the hope to initiate a focus shift in environmental policies from technocratic *environmental management* to *participatory environmental governance*. Clearly, such transformation will not be achieved overnight (or after a single PhD thesis) since it requires a willingness and commitment for participation, collaboration, and consensus seeking from actors and stakeholders at different scales of decision-making.

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Annexes

Annex 1: List of arguments put forward by stakeholders used in the case study analysis and sources, and translations in English

ArgID	Argument	Translation	Who	Role	Source
1	…nükleer enerji bir zorunluluk olmaktan çıkmıştır; dünyada olduğu gibi ülkemizde de 'siyasi bir tercih' konusu olmuştur	Nuclear energy is not a necessity anymore; it is a political choice in our country as it is in the world.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması s. 59
2	Nisan 2011'de Greenpeace'in yaptırdığı ankete göre katılımcıların yüzde 64'ü nükleer santrallerle ilgili olası bir referandumda "hayır" diyeceğini söyledi, yüzde 86.4'ü nükleer santrale yakın bir yerde yaşamak istemediği yönünde görüş bildirdi.	According to a poll conducted by Greenpeace in April 2011, 64 per cent of respondents said they would say "no" in a possible referendum on nuclear power plants, 86.4 per cent said they do not want to live near the nuclear power plant.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Türkiye'nin %64'ü nükleere hayır diyor 29 Nisan 2011, [Accessed 15.01.2017]
3	Görülmesi gereken şu ki, teknik boyutlar, siyasetin şemsiyesi altından gelişiyor ve yönleniyor (…) Nükleer enerjiye karşıysanız da, nükleer reaktörlerin kurulması için kararlı çabalar harcıyorsanız da son toplamda siyasi bir tavır alıyorsunuzdur	What you need to see is that technical dimensions are developed and directed from under the umbrella of politics (...) Whether you are striving to build nuclear reactors or if you are against nuclear energy, at the end of the day, you are taking a political stance	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması s. 59
4	Bir ülkedeki kalkınma politikalarını tartışmayıp meseleyi yapılacak yatırımın cinsine odaklıyorsanız buradan gerçek bir tartışma çıkaramazsınız. Egemen siyasetin dili ve rengiyle nükleer karşıtı mücadele ya da ekoloji mücadelesi cenahında yürütülen tartışmalarda çok ciddi bir paralellik var.	If you are not discussing the development policies of a country and are focusing on the type of investment to be carried out, you cannot get a real debate here. There is a very serious parallelism between the language and colour of sovereign politics and the debate on the fight against nuclear or the struggle for ecology.	AntiNukeNGO8	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p30
5	(Özgür) Gürbüz, iki turlu; ilki yerellerde, ikincisi Türkiye genelinde yapılacak halkoylaması öneriyor	(Özgür) Gürbüz proposes a two-stage referendum: first at local level, and then at national level.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p33
6	Kaza riski hiçbir zaman yüzde 100 yoktur denilemez, milyonda 1 de olsa böyle bir tehlike, böyle bir kaza olabilir. Bunları da görmemezlikten gelmek mümkün değil. Onun için de biz şu anda böyle bir nükleer enerjinin olması gerektiğine inanıyorsak, bu adımı atarız	The risk of an accident can never be said to be 100 percent, and such a risk, albeit 1 percent, could lead to an accident. It is not possible to ignore this fact. So if we need nuclear energy at this point, we will take this step.	Govn1	Governmental Agency	Türkiye ve Japonya "Stratejik Ortak", 30.10.2013, [Accessed 15.01.2017]
7	Ortalama 1000 Mwe gücündeki bir reaktör yılda yaklaşık 27 ton yüksek seviyeli atık üretirken, orta seviyeli atıkların miktarı 250 tonu, düşük seviyelilerinki ise 450 tonu buluyor.	A reactor with an average power of 1000 MWe produces about 27 tons of high-level waste per year, with 250 tons of medium-level waste and 450 tons of low-level waste.	AntiNukeNGO6	Anti-Nuclear NGOs / Activists / Journalists	PLANLANAN NÜKLEER SANTRALLER TÜRKİYE'Yİ TEHDİT EDİYOR, 26.12.2011, [Accessed 15.01.2017]
8	Türkiye daha nükleer santrale sahip olmadan nur topu gibi bir atık sorununa sahip olduğunu öğrendi (Gaziemir atık meselesi)…	Before even having the nuclear power plant, Turkish people found out that they already have a nuclear waste problem at hand.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p75
9	Gaziemir meselesi ilk değildi. Çevre Mühendisleri Odası (ÇMO) Genel Başkanı Baran Bozoğlu, İstanbul İkitelli'de 1999'da meydana gelen olayla Türkiye'nin "dünyanın en önemli 20 radyoaktif kazası" listesine girdiğini söylüyor	The issue of Gaziemir was not the first. Baran Bozoğlu, Chief of the Chamber of Environmental Engineers (ÇMO), says that Turkey entered the list of "the 20 most important radioactive accidents in the world" with the event that took place in 1999 in İkitelli, Istanbul.	AntiNukeNGO4	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p76
10	…hükümet de aslında nükleer atıklarla nasıl başa çıkacağını bilmiyor. Zira henüz bu konuyla ilgili bir plan ya da mevzuat bile oluşturulmadı. Yasa zaten yok.	… even the government does not really know how to deal with nuclear waste because no plan or legislation has been drafted yet. The law does not exist anyway.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p77

ArgID	Argument	Translation	Who	Role	Source
11	Hükümet nükleer silah yapamayacağını biliyor ama milliyetçi kesimin desteğini alabilmek için ortalıkta "yapabilirmiş" gibi dolaşmayı tercih ediyor.	The government is aware that it cannot make nuclear weapons, but it prefers to go around as if it actually could, to get support from the nationalist voters.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p80
12	Nükleer teknoloji geliştiren ülkelerden Kanada'nın nükleer silahı yokken nükleer santrali olmayan İsrail'in nükleer silahı olduğu bilinmektedir. Teknik olarak bakıldığında da nükleer santrale sahip olmak, nükleer silah yapmak için bir koşul değildir. Uluslararası arenada nükleer silah yapımı girşiminde bulunulması oldukça zor bir süreçtir.	While countries like Canada develop nuclear technology and do not have nuclear weapons, other countries, like Israel, have nuclear weapons without nuclear power plants. Technically, having a nuclear power plant is not a precondition for making nuclear weapons. Attempting to make nuclear weapons is a very difficult process in the international arena.	Scientist17	Academics / Scientists / Experts	Fizil Mühendisleri Odası Nükleer Enerji Raporu, Ankara 2011, s.112
13	Bu nükleer denemeler bugüne kadar 60'tan fazla noktada ve genellikle yerel halkların ya da azınlıkların yaşadığı bölgelerde yapıldı	These nuclear tests have been made in more than 60 locations today, and often in regions where local populations or minorities live.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p84
14	Nükleer santralin olduğu yerde balıklar ölür mü? Yerellerde en çok sorulan ve cevabından en çok korkulan soru bu. Hele hele başlıca geçim kaynağı balıkçılık olan Sinop'ta bütün nükleer santral tartışması balıkçılık üzerinden dönüyor. Nükleer santralden bütün deniz canlılarının ve su ekosisteminin etkileneceği konuşuluyor dost meclislerinde, çay bahçelerinde, rakı masalarında.	Do fish die around the nuclear power plants? This is the most frequently asked question by locals and one whose answer frightens people the most. Particularly in Sinop, where fishing is the main livelihood source, the whole nuclear power plant debate revolves around fishing. Everyone in friendly assemblies, tea gardens, dinner tables talks about the fact that the nuclear power plant will have a negative impact on all the sea creatures and the water ecosystems.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p87
15	Radyasyon kümülatif bir olgudur. Radyasyonda güvenli doz yoktur, her alınan radyasyon kanser riskinin artması anlamına gelir	Radiation is a cumulative phenomenon. There is no safe dose of radiation; any exposure to radiation means an increase in the cancer risk.	AntiNukeNGO7	Anti-Nuclear NGOs / Activists / Journalists	EMO Nükleer Enerji Raporu, 2013, s.49
16	…biz reaktörlerin sağlıklı bir şekilde çalıştıklarını düşünürken (…) buralarda birtakım aksilikler, küçük kazalar ve sızıntılar meydana geliyor. Süreçler şeffaf olmadığı için bunlardan kimsenin haberi olmuyor.	While we think that reactors work in a healthy way (...) some setbacks, small accidents and leaks do occur. Nobody knows about these because the processes are not transparent.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın p95
17	Belki bir kaza yaşanmıştır ama onun da tespit edilememesine olanak yok. Ancak kasten saklanması gerek ki; tespit edilemesin.	There may have been an accident, but there is no way it can go undetected. Accidents must be deliberately hidden for people not to find out.	Scientist4	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın p95
18	Türkiye'de nükleer santralleri denetleyecek bağımsız bir kurum var mı? …Türkiye'nin elbette bununla ilgili bir kurumu var; Türkiye Atom Enerjisi Kurumu, yani TAEK. 27 Kasım 2002'de bu kurum Enerji ve Tabii kaynaklar bakanlığına bağlandı	Is there an independent institution in Turkey to supervise nuclear power plants? ... Of course, Turkey has an institution for it, namely Turkish Atomic Energy Authority, or TAEK, in short. On November 27, 2002, it was affiliated with the Ministry of Energy and Natural Resources.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p97
19	TAEK, Enerji Bakanlığı'nı atom enerjisi işlerinde denetlemekle yükümlüdür, onun maiyeti kılınamaz	TAEK is responsible for supervising the Ministry of Energy in the atomic energy business; thus, it cannot become a subordinate	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması s. 15
20	Nükleer enerjiye sempati duyan siyasetçiler (…) nükleer santrallerin istihdam sağlayacağından dem vurur örneğin. Nükleer karşıtları ise buna karşılık nükleerin istihdam sağlamayacağını ispatlamaya çalışır	Politicians who are sympathetic to nuclear energy (...) argue for nuclear power plants, claiming that they will provide the much needed employment. Nuclear opponents, on the other hand, try to prove that nuclear will not provide employment	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p103
21	Siyasetçiler nükleer olmazsa elektriksiz kalırız der, Antinükleercilerden bu argümana karşı iki kelime gelir: Yenilenebilir Enerji	Politicians say that if we do not build the plants, we will be left without electricity. Nuclear opponents oppose this with only two words: Renewable Energy	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p103

ArgID	Argument	Translation	Who	Role	Source
22	Siyasetçiler (…) yenilenebilir enerjinin Türkiye'nin enerji ihtiyacını karşılamaya yetmeyeceğini iddia eder, nükleer karşıtları ise yeteceğini	Politicians (...) claim that renewable energy will not be enough to meet Turkey's energy needs, while nuclear opponents claim that it will.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p103
23	Kaza riski bir türlü sıfırlanamayan ve atık sorununa bir türlü çözüm bulunamayan nükleer santraller gelecek kuşakların yaşamı dahil olmak üzere yaşamımızı ve doğayı tehdit (ediyor)	Nuclear power plants, where accident risk cannot be fully avoided in any way and there is no solution to the problem of waste, threaten our lives and nature, including the life of future generations,	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p104
24	Hal böyleyken nükleer karşıtlarının bir an önce yapması gereken (…) nükleer enerji kararının bir demokrasi meselesi olduğunu hatırlayıp başka bir dünya tahayyülünün nasıl şekilleneceğine dair program üretmek olmalı	It is then necessary for nuclear opponents to recall that nuclear energy decision is a matter of democracy, and come up with a program of how to create a better world	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p104
25	Nükleer santral kurarsak nükleer teknolojimiz olur	If we build a nuclear power plant, we will have nuclear technology.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p104
26	Nükleer teknoloji bir şeydir, nükleer reaktör işletmeciliği başka bir şeydir. Üstelik santrali bir çalıştırsak bile nükleer teknoloji ithal etmiş olmayız ama santrali biz bile çalıştırmayacağız, Akkuyu'da Ruslar çalıştıracak.	Nuclear technology is one thing nuclear reactor operation is another. Moreover, even if we run the plant, we will not be importing nuclear technology; and we will not even be in charge of runnning the plant in Akkuyu, Russians will.	Scientist19	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p105
27	Nükleer santrale sahip ülke sayısı 30 iken, nükleer teknolojisine sahip ülke sayısı 11	While the number of countries with a nuclear power plant is 30, the number of countries with nuclear technology is 11.	ProNukeNGO1	Pro-Nuclear NGOs	Beni Akkuyu'larda Merdivensiz Bıraktın, p105
28	Eskiden uzaya gönderilecek reaktörle ilgili ya da üretken reaktörlerle ilgili çalışmalar yapardık. Nükleer santral gündemde olmadığından ülkenin ihtiyacı olmayan işlerdi yani bunlar. Ama artık daha gerçekçi projeler yapıyoruz; yakıt zarf üretimiyle, AFAD ile radyolojik nükleer etkilerle ilgili projeler örneğin. Akademik olarak biz bunu daha net hissetmeye başladık. Teknolojik olarak da hissedilecek.	In the past, we used to work on productive reactors or reactors that would be sent to space. Since the nuclear power plant was not on the agenda, these projects were not really needed by the country. But now we are making more realistic projects; projects involved in the production of fuel envelopes, radiological nuclear effects with DEMP(Disaster and Emergency Management Presidency), for example. Academically, we started to see it more clearly. It will also be seen technologically.	Scientist4	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p106
29	Teknoloji transferi, nükleer silah, enerji bağımsızlığı gibi doğru olmayan bilgilerle nükleer santrallerin pazarlaması yapılıyor.	Nuclear power stations are being marketed with inaccurate information such as technology transfer, nuclear weapons, and energy independence.	Scientist13	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p106
30	Nükleer Enerji İstihdam Yaratır: Sıkça dillendirilen ve yerellerde halkı ikna etmek için bir araç olarak kullanılan bu argüman, kullanana göre değişkenlik gösterse de vaat edilen istihdam aralığı 3500-15000 kişi. İnşaat aşamasında, doğal olarak daha fazla kişinin çalışacağı, orada çalışan kişilerin hizmet sektörünü tetikleyeceği ama nükleer santral çalışmaya başladığında da bu kadar yüksek olmasa bile istihdamın devam edeceği iddialar arasında	Nuclear Energy Creates Employment: Although this argument, which is frequently voiced and used as a means to persuade the public at the local level, varies from employer to employer, the promised employment range is from 3500 to 15000. There are claims that in the construction phase, more people will work, and the people working there will invite in the service sector, but when the nuclear plant starts operation, employment will continue although it will not be as high as in the beginning.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p106-107
31	Nükleer santral yapımı ülkeye sınıf atlatır. Zira istihdamın, inşaat aşaması ve nükleer teknoloji için gerekli olan parçaların üretimi olmak üzere iki boyutu vardır.	The country will become more developed with nuclear power plant construction. Because such employment has two dimensions, namely the construction phase and the production of the parts required for nuclear technology.	ProNukeNGO1	Pro-Nuclear NGOs	Beni Akkuyu'larda Merdivensiz Bıraktın, p107
32	Akkuyu'da bahçıvan ve güvenlik dahil tüm çalışanları sayınca ünite başına 1000 kişi, toplamda 4000 kişi olacak. Dört kişilik bir aile üzerinden düşünülürse 16 bin kişi eder--annamadım. Ama bu,	In Akkuyu, all employees including the gardeners and security make 1000 people per unit, making a total of 4000 people. If it is thought of as a family of four, it makes 16 thousand people. But that does	Scientist4	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p107

ArgID	Argument	Translation	Who	Role	Source
	Büyükeceli'de herkes iş bulacak anlamına gelmiyor. Çünkü nükleer santralde çalışacak insanlar nitelikli olmalı.	not mean that everybody in Büyükeceli will find a job. Because people who work in a nuclear power plant must be qualified.			
33	Nükleer santral bölgeye kaliteli göçler sağlayacak	Nuclear power plant will provide quality migration to the region.	Scientist4	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p107
34	Dünya ortalamasından yola çıkarak inşaat aşamasında, 10 yıl boyunca 1000 ila 2000 arasında vasıflı işçinin, örneğin Sinop'taki nükleer santral kurulduğunda ise 200 ila 400 Japon/Fransız vasıflı nükleer teknik elemanının ve 100-200 civarında yerel teknik elemanının ve vasıfsız işçi çalışacak	Based on the world average, 1000 to 2000 skilled workers will work in the construction phase, which will take 10 years. When nuclear power plant in Sinop is established, 200 to 400 Japanese / French skilled nuclear technicians and approximately 100 to 200 local technical staff and unskilled workers will continue to work	Scientist14	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p107
35	(Ermenistan'daki Metzamor Santrali ile ilgili) "Bu santralleri bahane ederek, Türkiye'ye santral inşa etmek yerine, bu santrallerin kapatılması için uluslararası girişimde bulunulması gerekmektedir	(Regarding the Metzamor Power Plant in Armenia) "Instead of constructing a power plant in Turkey by using these power plants as a pretext, an international initiative must be made to shut down these power plants.	AntiNukeNGO6	Anti-Nuclear NGOs / Activists / Journalists	PLANLANAN NÜKLEER SANTRALLER TÜRKİYE'Yİ TEHDİT EDİYOR, 26.12.2011, http://www.cmo.org.tr/genel/bizden_detay.php?kod=85691&tipi=68&sube=0#.UxM3nLuXSJc
36	Türkiye nükleer enerjiye mecbur: Siyasetçilerin en sevdiği ve tekrarlamaktan asla yorulmadığı argümanların başında bu geliyor.	Turkey is in dire need of nuclear energy: this is one of the most popular and most frequently repeated arguments of politicians.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p109
37	Özellikle siyasilerin "Biz nükleer enerjiye mecburuz" söylemine kesinlikle karşıyım. Mecbur kaldığınız için nükleer santral yapmayın. (…) Nükleer santral kararı insan kaynakları değerlendirmesini, altyapınızın hazırlanmasını, elektrik şebekenizin hazırlanmasını, sosyal etki değerlendirmesini ve çevre etki değerlendirmesini gerektirir. Nükleer santrali mecbur olduğunuz için yaparsanız bunun projelendirilmesini ne kadar yapabilirsiniz.	I am absolutely against politicians' statements such as "We are in dire need of nuclear energy." Do not construct a nuclear plant because you are in dire need. (...) The decision of nuclear power plant requires the assessment of human resources, preparation of your infrastructure, preparation of your electric network, social impact assessment and environmental impact assessment. How much of all of this can you successfully achieve, if you build it just because you have to?	Scientist4	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p110
38	Nükleer santral kararı verilirken yöre halkına kulak vermek ve kesinlikle konuya "ben yaptım oldu" şeklinde yaklaşmamak gerek	when a nuclear power plant decision is made, it is necessary to pay attention to the locals in the region and certainly not approach the subject as 'I wished it, so I did it, and that is all there is to it'	Scientist4	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p110
39	(Nükleere) Mecburuz. (…) Enerji konusunda ülke gerçekleri maalesef iç açıcı değil; su kapasitemiz yetersiz ve kömürler düşük kalorili. Tüm su kaynakları ve kömür kaynaklarını kullansak bile açığımız olacaktır.	We are in dire need of nuclear. The current state of energy in the country is far from promising; our water capacity is insufficient and our coals are poor quality. Even if we utilize all water and coal resources, there will still be a deficit.	ProNukeNGO2	Pro-Nuclear NGOs	"Türkiye'nin Nükleer Santral ihtiyacı yoktur" yalanının gerçeği nedir? 15.06.2007, [Accessed 15.01.2017]
40	Mersin'deki nükleer santral Türkiye'nin elektrik ihtiyacının yüzde 5'ini karşılayacak (…) Ancak Türkiye'de üretilen enerjinin yüzde 15 ila 20 kısmı, dağıtım şebekesi içinde zayi oluyor ya da ulaştığı yerde çalınıyor. Sadece kayıp kaçağı ve sistem kayıplarını önlesek iki tane Mersin santrali eder. 25 milyar dolarlık santral yapmaya gerek yok.	Mersin's nuclear power plant will meet 5 per cent of Turkey's electricity need (...) However, 15 to 20 per cent of the energy generated in Turkey is lost in the distribution network or is stolen in the place it has reached. Two Mersin plants would be saved if we could prevent theft and system losses. There's no need to build a $ 25 billion power plant.	Scientist10	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p110
41	Kendi yaptığı çalışmalardan yola çıkarak nükleer enerjinin ucuz olduğunu söyleyenlerden biri Şule Ergün	Grounding her ideas on her work, Şule Ergün claims that the nuclear energy is cheaper.	Scientist4	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p111
42	Türkiye'de nükleer enerjiyle üretilecek elektriğin fiyatını şu anki elektrik fiyatlarına kıyasla biraz daha ucuz hesapladık	We calculated the price of electricity produced by nuclear energy in Turkey to be slightly cheaper than current electricity prices.	Scientist3	Academics / Scientists /	Beni Akkuyu'larda Merdivensiz Bıraktın, p112

ArgID	Argument	Translation	Who	Role	Source
				Experts	
43	Türkiye, Akkuyu NGS'den üretilecek elektriğin kWh 12.35 dolar-sent üzerinden alacak. Bir rüzgar veya hidroelektrik santralinden üretilen elektriğin 1 kWh 7.3, jeotermale 10.5, güneş ve biyokütle santrallerinde üretilen elektriğe ise 13.3 dolar-sent ödüyor. Bu durumda devlet 1kWh elektriği rüzgardan alırsa devletin kasasından nükleere göre 5 sent daha az para çıkıyor	Turkey will receive electricity from Akkuyu NPP at 12.35 dollar-cents per kWh. Right now, Turkey is paying 7.3 dollar-cents per kWh for electricity from wind or hydroelectric power plants, 10.5 dollar-cents per kWh for electricity generated at geothermal sources, and 13.3 dollar-cents per kWh for electricity generated at solar and biomass power plants. In this case, if the state receives 1 kWh of electricity from the wind turbines, it costs 5 cents less than the nuclear.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Çernobil'in 28. yılında nükleer enerji -3 28.04.2014, [Accessed 15.01.2017]
44	Nükleer santralin çevreci olup olmadığı sizin kriterlerinize bağlı. Kriteriniz eğer ne kadar ormanın, ne kadar toprağın yok edildiği, ne kadar bölgenin gasp edildiği ise nükleer enerji çevreci değildir. Ama karbon salımıysa evet, nükleer çevrecidir.	Whether or not the nuclear plant is environmentally friendly depends on your criteria. If your criterion is how much forest, how much soil is destroyed, how much territory is seized, nuclear energy is not environmentally friendly. But if it's carbon emissions, then yes, nuclear is environmentally friendly.	Scientist4	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p113
45	Nükleer çevreci değil derken sadece radyasyonu kastetmiyoruz. Öncelikle ağaçlar kazınıp oraya kocaman bir tesis kuruluyor.	When we say nuclear is not environmentally friendly, we do not only refer to the radiation emitted. Trees are cut down and a huge plant is built in their stead.	Scientist15	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p114
46	Nükleer çevrimin her aşamasından atmosfere karbondioksit salınıyor	Carbon dioxide is released to the atmosphere at every step of the nuclear cycle.	Scientist14	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p114
47	Dinamit patlatıyorlar, canlıları öldürüyorlar. Yollar yapılıyor, her yer beton oluyor	They are blowing up dynamites, killing living things. Roads are being built, green is taken over by grey concrete all around.	LocalNGO6	Local NGOs and activists	Beni Akkuyu'larda Merdivensiz Bıraktın, p114
48	Madem enerji ihtiyacının çoğu istanbul'da, İstanbul'un çatılarını güneş panelleriyle kapla. Akkuyu'dan İstanbul'a enerji taşınır mı?	If most of your energy need is concentrated in Istanbul, cover the roofs of Istanbul with solar panels. Does it make sense to transport energy all the way from Akkuyu to Istanbul?	Scientist9	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p114
49	Rüzgardan elektrik üretimi ucuzluyor. Yenilenebilir enerji devrimi başladı	Electricity production from the wind is getting cheaper. Renewable energy revolution has begun.	Scientist18	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p115
50	Türkiye'de enerjinin etkin kullanılması gerek	Energy should be used efficiently in Turkey.	Scientist18	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p115
51	Türkiye'nin enerji yoğunluğu rakamları 1990'dan beri hemen hemen hiç iyileşmeye gitmemiş. Bu rakam şimdi 250 kg'larda. Diğer ülkelerin hepsinde aşağı düşmüş.	Turkey's energy intensity figures have hardly improved since 1990. The figure now stands at 250 kg. However, in all other countries numbers have decreased.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p116
52	Türkiye, hesaplanan nükleer enerjinin payını rahatlıkla karşılayacak enerji verimliliği potansiyeline sahip.	Turkey has an energy efficiency potential that will easily meet the share of the calculated nuclear energy.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p116
53	Herkes sonsuz enerji kullanmak istiyor, kimse enerji verimliliği yapmaya yanaşmıyor. Kimse arabasız, klimasız yaşamak istemiyor. Konforunu enerjiyle sağlıyor ama enerjinin nasıl geldiği onu ilgilendirmiyor. Bu durumda Akkuyu'da nükleer santral istemeyince, rüzgar elektrik santralleri kuş yollarına yapılsın, termik santral olsun demiş oluyorsun. Burada çok yaman bir çelişki var. (...) Benim ön bahçeme nükleer kurma, git arka bahçemde termikten enerji üret anlayışından vazgeçmeliyiz.	Everyone wants to use infinite energy, but nobody wants to cut down on the energy they use. No one wants to live without a car or without air conditioning. Everyone finds comfort thanks to energy but they do not care how it is generated. In this case, when you say that you do not want a nuclear power plant in Akkuyu, they think you opt for wind power plants that will be built on bird migration routes, or you are ok with a thermal power plant. There is a contradiction here. (...) We have to give up on the thought that it is ok to generate energy from coal in my backyard, as long as you do not build a nuclear power plant in my front yard.	AntiNukeNGO3	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p116-117

ArgID	Argument	Translation	Who	Role	Source
54	Yenilenebilir enerji nükleerin alternatifi değildir. Bu alternatif kaynaklar, elektrik tasarrufu sağlayan önemli kaynaklardır ama ama bunlar hidroelektrik, termik ve nükleer gibi ana enerji kaynaklarının yerini tutmaz	Renewable energy is not an alternative to nuclear. These alternative sources are important sources of electricity saving but they cannot be a substitute for the main energy sources such as hydraulic, thermal and nuclear.	ProNukeNGO2	Pro-Nuclear NGOs	Beni Akkuyu'larda Merdivensiz Bıraktın, p117
55	…nükleer karşıtı bir birey neden nükleer enerjinin alternatifini önermek zorunda olsun?	Why would a nuclear opponent have to offer an alternative to nuclear energy?	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p118
56	(Akkuyu yer lisansı ile ilgili) …1976'da nükleer güvenliği daha çok sorgulatan ve dünya genelinde kaza riskini artıran Three Mile Island, Çernobil ve Fukuşima nükleer kazaları meydana gelmemiştir	(Regarding Akkuyu site permit) ...Back in 1976, Three Mile Island, Chernobyl and Fukushima nuclear accidents, which caused people to question nuclear safety more and increased the risk of accidents worldwide, had not happened.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması
57	Nükleer pahalı bir enerji çeşidi. Dolayısıyla Rusların verdiği fiyat, verdikleri tarihte bile yurtdışındaki birçok rakamla kıyaslandığında düşüktü. Hükümet, biz nasılsa alım garantisi verdik, elektriği bu fiyattan alacağız, bu onların sorunu, diyor. Ama hayır, tam tersi. Nükleer enerjide asıl maliyeti yapının kendisi ve güvenlik önlemleri oluşturuyor. (...) Eğer bütün dünyanın 20 dolar sente mal ettiği elektriği 12 dolar sente mal edeceklerini söylüyorlarsa güvenlik önlemlerinden bu fiyat farkını kapatıyorlar demektir.	Nuclear is an expensive type of energy. The price offered by the Russians was already low compared to many figures abroad, even at the time the offer was made. The government says, "We have made an agreement to get the electricity from this price, it's their problem," But no, just the opposite. The construction itself and the security measures constitute the real cost of nuclear energy. (...) If they say that they will generate electricity for 12 dollar cents while everyone around the world does it for 20 cents, that means they are cutting back on the security costs.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p136
58	TAEK kriterlerine göre Türkiye'ye denenmemiş bir teknoloji kurulamaz ama VVER1200, tıpkı Sinop için düşünülen ATMEA1'in olduğu gibi, ilk kez Türkiye'de yapılacak.	According to the TAEK criteria, an untested technology cannot be established in Turkey, but the VVER1200 will be established in Turkey for the first time, just like ATMEA1, which they consider building in Sinop.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p136
59	Bölge'deki önemli geçim kaynaklarından biri tarım ve seracılık. 2012 TÜİK verilerine göre bölgede 13740 kişi seracılık yapıyor.	One of the important livelihood resources in the region is agriculture and green housing. 2012 According to TURKSTAT data, 13740 people in the region engage in green housing.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p138
60	Zaman zaman ilaç kalıntıları nedeniyle ihraç edilen ürünlerin geri gönderildiği oluyor. Nükleer santral yapıldıktan sonra ürünlerin ihraç edildiği ülkeler ya da AB, bu ürünler için radyasyonla ilgili standartlar da getirecek. Küçük bir kaza durumunda dahi malları geri gönderecek, alımı yasaklayacaklar. Kazanın söylentisi bile yeter hatta çünkü o malları kimse tüketmek istemeyecek.	Sometimes exported products are returned due to drug residues. After the nuclear power plant is built, the EU countries or the countries where the products are exported to will introduce radiation-related standards for these products. In the event of a minor accident, they will send the goods back and prohibit further purchase. Even the rumour of an accident will be enough, because nobody would want to consume such goods	LocalNGO6	Local NGOs and activists	Beni Akkuyu'larda Merdivensiz Bıraktın, p138-139
61	Olası bir nükleer felaketten doğrudan etkilenecek başta Adana, Konya, Karaman, Hatay, Antep olmak üzere Mersin'in çevresindeki illerin 2011 yılı TÜİK verilerine göre hayvansal ve bitkisel üretimden kazandıkları toplam miktar aşağı yukarı 20 milyar dolar. (...) Olası bir nükleer kazada en az 20 milyar dolar zarara uğratacak 20 milyar dolarlık bir yatırıma değer mi?	Adana, Konya, Karaman, Hatay, Antep –all the cities surrounding Mersin- have a total income of approximately 20 billion dollars from animal and plant production, according to TURKSTAT data in 2011. (...) These are the cities that will be primarily affected by a possible nuclear disaster. Is it worth making an investment of 20 billion dollars which might hit at least 20 billion dollar worth production in a possible nuclear accident?	LocalNGO6	Local NGOs and activists	Beni Akkuyu'larda Merdivensiz Bıraktın, p140
62	Radyasyon dedikodusu bile turizmi bitirir.	Even the rumours of a radioactive leakage will end the local tourism	LocalResident25	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p140
63	Tam da santralin kurulacağı, yöre halkının "İncekum" olarak andığı plaj IUCN kriterlerine göre nesli tehlikede olan caretta carettaların yumurtlama alanı.	According to IUCN criteria, Incekum beach, on which the plant will be established, is a spawning ground for the caretta caretta, which is a species facing extinction.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p140

ArgID	Argument	Translation	Who	Role	Source
64	Sürüngenlerin çoğunda cinsiyet kromozomu olmadığı için sıcaklık cinsiyet belirlenmesinde önemli rol oynamaktadır. Yuva sıcaklığının 32 derece civarında olması durumunda yavruların tamamı dişi, 28 derece civarı olması durumunda tamamı erkek olurken 26 derece civarında olursa cinsiyet dağılımı yarı yarıya olur. Bu durumda sıcaklığın artışıyla yavruların çoğunun dişi olması ve cinsiyetin popülasyon içinde orantısız dağılımı söz konusu olacağından deniz kaplumbağalarının nesillerinin devamını riske sokacaktır.	Since reptiles do not have sex chromosomes for the most part, temperature plays an important role in gender determination. If the temperature of the nest is around 32 degrees, then all pups are female, if it is 28 degrees, then it is all male, if it is around 26 degrees, the sex distribution is half for each sex. In this case, with the increase in temperature, the majority of the offspring will be female and the disproportionate distribution of the sex within the population will risk the continuation of the generation of sea turtles.	AntiNukeNGO1	Anti-Nuclear NGOs / Activists / Journalists	Nükleer Santrale Akademik Veto, Gazete Imece, 12.06.2012 [Accessed 15.01.2017]
65	Bizim elimizden tutan yok. Zaten bizi dinleyen de yok. Diktatörlük gibi bir sistem var, biz karşı çıksak ne olacak. Devlet bundan vazgeçmeyecek.	Nobody supports us. There is no one who listens to us anyway. We have a system like dictatorship, and it is futile to oppose it. The state will not give up.	LocalResident15	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p146
66	Gelişmiş ülkelerde hep nükleer santral var. Basından takip ediyorum ben, (Türkiye de gelişmiş) öyle olacak.	All developed countries have nuclear power plants. I follow news from the press, Turkey will, too (be developed when it builds nuclear power plants.)	LocalResident11	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p147
67	Gitsinler Karadeniz'e yapsınlar, bence Sinop'a nükleer santral yapma kararı olumlu. Hatta beş-on tane yapsınlar. Sinop'un 50 km etrafında yaşam yok. (Yaşam olmaz olur mu yorumu sonrası) yahu burası gibi değerli değil o zaman. Tarlanın dönümü burada 300 bin orada olsa olsa 10 bindir.	Let them build it in the Black Sea, I think it is good that they plan to build the nuclear plant in Sinop. They should even build 5-10 if they can. There is no life around 50 km radius of Sinop. (After people oppose the claim that there is no life in the surroundings) Well, it is not as valuable as here then. An acre of land costs 300 thousand TL here and at most 10 thousand TL there.	LocalResident16	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p147
68	Ben doğmadan önce bu atom işi varmış, hala var. Yürüyüşlere bile gittik. Daha ne yapabiliriz ki? Baksanıza kuruyorlar bile.	This talk of nuclear was present before I was born, and it still is. We have joined parades to protest. What else can we do? Look, they are already building it.	LocalResident13	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p148
69	Bizim cennet gibi yerimiz batacak, biz hiç ister miyiz? Ama elimizden bir şey gelmedi, yapıyorlar işte. Bizim dediklerimiz varmadı bir yere. Kim ister toprağını vermeyi. Belki de ileride başımızı alıp çekip gideceğiz.	Would we ever want our heavenly place to be destroyed? But we could effect no change, they have already started to build it. Nobody cared for what we had to say. Who would want to give up on his land? Maybe we will just take our leave from this place too, one day.	LocalResident17	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p148
70	Nükleer bizi öldürürmüş. Ben o yüzden nükleer santrale karşıyım. (Santral inşaatında çalışan) Kocam da karşı ama ne yapsın, ekmek parası.	They say nuclear may kill us. That is why I am against it. My husband (who works at the construction of the plant) is against it too, but what can we do? That is how we earn our livelihood.	LocalResident4	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p148
71	Nükleere karşı çıkalım ama o zaman da termik santral yapacaklar. Biz termik santral hiç istemiyoruz. Nükleer için zaten yapabilecek bir şey yok artık. Biz çok uğraştık. Teknemizle protesto ettik ama şimdi o alana yaklaştırmıyorlar bile.	I will stand up against the nuclear, but then they will build a thermal power plant. We do not want a thermal power plant at all. There's nothing we can do for nuclear now anymore. We have worked very hard. We protested with our fishing boats, but now they do not even let us get close to it.	LocalResident1	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p149
72	Berber Süleyman Yaman ise nükleer santralin kurulmasından yana. Santralde çalışan Ruslar gelip tıraş oluyorlarmış, işleri açılmış.	Hairdresser Suleyman Yaman favours the establishment of a nuclear power plant. He says the Russians working at the plant construction come to have a shave, and his business is doing better than ever.	LocalResident29	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p149
73	Termiğe düşmanız ama nükleer enerjide yorum yapmayalım. O bizi aşar, o ilerleyen zamanlarda görüşülür.	We all stand against thermal power plants, but we do not have a say on nuclear energy. That is beyond our understanding, it will be discussed in the future.	LocalGovn4	Local Government	Beni Akkuyu'larda Merdivensiz Bıraktın, p149
74	Cennet gibi bir yer burası… Denizimiz ve doğamız için nükleer santrale karşıyız. (Halihazırda denizden çıkan türlerin sayısının azalmasından şikayet ediyor. Korkusu, nükleer santralin balıkların hepsini yok etmesi.)	This is a place like paradise ... We all stand against the nuclear plant, for the sake of our sea and our nature. (He complains about the reduced number of species already present in the sea. He fears that the nuclear plant will destroy all fish around it.)	LocalResident8	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p149
75	Hava kirliliği tarımı olumsuz etkileyecek (Termik santralden bahsediyor)	Air pollution will have a negative impact on agriculture. (He refers to thermal power plant.)	LocalResident23	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p149-150

ArgID	Argument	Translation	Who	Role	Source
76	Milleti iş imkanı diye kandırıyorlar. Ama iş imkanı olsa bile biz karşıyız. Akdeniz'in en güzel yeri burası.	They fool people by saying the plant will provide employment. Even if it does provide employment, we are still against it. This is the most beautiful spot of the Mediterranean.	LocalResident20	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p150
77	Sıdıka Yılmaz insan sağlığını ve doğayı tehdit ettiği için nükleer santrale karşı olduğunu söylüyor ve ekliyor: "Çocuklarım ve torunlarım doğal ortamda büyüsün istiyorum"	Sıdıka Yılmaz says she is against the nuclear plant because it threatens human health and nature and adds: "I want my children and grandchildren to grow up in a natural environment".	LocalResident27	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p150
78	Nükleer santrale karşıyım. Bizi öldürmesine gerek yok ki; doğayı mahvedecek	I am against the nuclear power plant. It may not kill us directly, but it will destroy our nature.	LocalResident21	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p150
79	Nükleer santrale karşıyım. Radyasyon saçacak, radyasyon zehir demek. Akkuyu turistik bir yer, oraya nükleer santral yapılmasın.	I am against the nuclear power plant. It will emit radiation, and radiation means poison. Akkuyu is a touristic spot, they should not build the plant there.	LocalResident6	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p150
80	Tayyip Bey'e hürmetim var. Onun kafası bizden daha iyi çalışıyor. Kendisinden Allah razı olsun, yurt için ne iyi o daha iyi biliyor. (Kaza olursa? Diye soruyorum. "Kader" diyor.	I have respect for Mr. Erdoğan. He is smarter than us. May God bless him, he knows what is best for the country. (I ask: "What if there is an accident?" and he answers saying "Fate")	LocalResident30	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p150
81	1999 yılında Büyükeceli Beldesi, Yeşilovacık beldesi, Yanışlı Köyü, Kırmanlı köyü, Karadere köyü, Işıklı köyü, Akdere köyünün katıldığı oylamada nükleer santrale hayır sonucu çıkıyor. Bu köylerden Büyükeceli, Yanışlı, Babadıl, Kırmanlı ve Yeşilovacık nükleer santralin genişleme alanı içinde kalıyor ve gerektiğinde kamulaştırılabilecek. Köylüler olası bir durumda köylerini terk etmek istemiyor lakin hemen hemen hepsinde "olan oldu artık, elden ne gelir" psikolojisi hakim. Bu psikolojide, kırk yıldır süren tartışmalardan bir şey çıkmadığı için artık iyiden iyiye, burada bir şey yapamayacaklar düşüncesi yerleşmişken 2011'de şirketin elemanlarının araziye gelerek günden güne yerleşmesi büyük rol oynamış.	In 1999, residents Büyükeceli Town, Yeşilovacik town, Yanışlı village, Kırmanlı village, Karadere village, Isikli village, Akdere village hold an election and the result is "No" to nuclear power plants. These villagers living in the surrounding villages, namely, Büyükeceli, Yanlışlı, Babadil, Kırmanlı and Yeşilovacık will be expropriated if necessary. The villagers do not want to leave the villages. They feel helpless, thinking what is done is done and cannot be reversed. The reason underlying this psychology is that there were always the talk of constructing a plant in the area for 40 years but no real attempt was made, until 2011 when the staff of the company came to the area and settled there, gradually.	LocalResident5	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p150
82	Sanmasınlar ki nükleer santral orada çalışacak ve biz burada huzur içinde yaşayacağız. Denizimizi, toprağımızı, temiz havamızı, sağlığımızı kaybedeceğiz. Daha ne olsun? Özellike Büyükeceli ve Silifke arası hızlı kirlenmeye maruz kalacak ve öyle bir an gelecek ki Mersin'de yaşayanlar da bundan yırtamayacak. Umutsuzluğa kapılarak "Biz ne yapabiliriz ki hükümet karar vermiş" diyenler yanılıyor. Biz bu işi her an durdurabiliriz. Son dakikada bile durdurabiliriz.	They think that the nuclear plant will operate there and we will live here in peace. We will lose our water, our soil, our clean air, our health. What more? Particularly the area between Büyükçeki and Silifke will be exposed to rapid pollution and there will come a time when those living in Mersin will not be able to protect themselves from harm. It is wrong to say, "What can we do, now that the government has decided" in despair. We can stop this at any moment. We can stop it even in the last minute.	LocalResident9	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p151
83	ÇED süreci başlayınca nükleer karşıtları Mersin Büyükşehir Belediyesi ve merkezdeki dört büyük belediye olan Akdeniz, Mezitli, Toroslar ve Yenişehir başta olmak üzere yaklaşık 200 belediyenin meclisinden ve il özel idaresinden, bu kurumların nükleer santrale karşı olduklarını beyan eden ilke kararları çıkarttı.	At the beginning of the EIA process, approximately 200 municipal councils including the Mediterranean, Mezitli, Toroslar and Yenişehir, the four major municipalities in the center of the Mersin Metropolitan Municipality, and the provincial private administrations have issued resolutions declaring that these institutions are against the nuclear power plant.	LocalGovn5	Local Government	Beni Akkuyu'larda Merdivensiz Bıraktın, p154
84	Benim köyde yaşadığım dönemde tarım yapılıyordu; çok iyi domatesler, fıstıklar yetiştiriliyordu. Şu anda köyde bir şey ekilip dikilmiyor, insanlar kendileri için bile bir şey ekip dikmiyorlar. Çünkü umutlarını santrale bağlamışlar. Ruslar 1 dönüm yere 100 bin lira verecek diye bekliyorlar.	When I used to live in the village, people were engaged in farming: very good tomatoes, peanuts were grown. Right now, there is no agriculture in the village: people do not even cultivate the land for their own consumption anymore because their hopes lie in the nuclear plant. They expect the Russians to pay 100 thousand liras per acre.	LocalResident9	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p155
85	Benim birisi 1, birisi 7 yaşında iki tane torunum var. Ben bu mücadeleyi onlar için veriyorum. Ailelerimiz tedirgin, çocuklarım, dostlarım arkadaşlarım başımıza bir şey gelecek diye korkuyor. Ama ben inanıyorum ki; bizim birlikte dünyaya yayacağımız enerji onların	I have two grandchildren, one is 1 year old and the other one 7. I fight for them. Our families are anxious, my children, my friends, my friends are afraid that something bad will happen to us. But I believe that the energy we spread as a unity will destroy their nuclear	LocalResident25	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p156

ArgID	Argument	Translation	Who	Role	Source
	nükleer enerjisini yok edecek.	energy.			
86	Hem insan hem de hekim olarak (nükleere) karşıyım. Nükleer santral olduktan sonra biz hekimler olarak tiroit kanseriyle, çocukluk çağı lösemileriyle uğraşmamalıyız. Biz nükleer santralin yapılmasını engellemeliyiz.	I am against (nuclear) both as a citizen and as a doctor. We should not have to deal with all the ailments caused by the nuclear plant such as thyroid cancer or childhood leukaemia. Instead, we should put up a fight so that they do not construct the plant in the first place	LocalResident10	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p160
87	Sinop'un başı bir hayli belada. Kimileri kentin doğal güzelliklerini koruma, kimileri eko-turizmi geliştirme, kimileri ise kenti turizme açma hayallerini kurarken, Sinop'un başkalarının hayallerinin tam da göbeğinde olduklarını bilemezlerdi elbette. Kararlar kapalı kapılar ardında alınmıştı, Sinop'ta pek çok kişi olacaklardan habersizdi.	Sinop is in a great deal of trouble. While some people dreamed of protecting the natural beauty of the city, developing eco-tourism, and making the city more touristic, they did not know that other people were working towards a different end. Decisions were made behind closed doors, and many people in Sinop were left in the dark about them.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p161-162
88	Siz TAEK'ten yer lisansını niye alıyorsunuz? Burası nükleer santral kurmaya uygun bir yerdir demek için. Peki, o halde bu lisansı almadan, yani Sinop'un nükleer santral için uygun bir yer olup olmadığını bilmeden bir ülkeyle nasıl anlaşma yapabiliyorsunuz?	Why do you take away TAEK's site permit? To say this is a place suitable to build a nuclear power plant. So how can you make a deal with a country without knowing whether Sinop is a suitable place for a nuclear power plant, and without getting this permit?	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p163
89	İstanbul'da siz nükleer santralin olduğu yerden çıkarılan kalkan balığını alır ve yer misiniz? Ben olsam yemem.	In Istanbul, would you pick up the turbot fish from the place where there is a nuclear power plant, and would you eat it? I would not.	LocalResident7	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p167
90	Kaza olmasa dahi nükleer santralden radyasyon sızıntısının olduğu yolundaki bir söylenti bile Sinop'taki balıkçılığı bitirecek.	Even if there is no accident, a simple rumour that there is radiation leakage from the nuclear power plant will end fishery in Sinop.	LocalResident3	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p167
91	Nükleer santral meselesinde tek ölçüt enerji açığı değildir, doğa ve turizm de çok önemlidir. Bu iki ölçüt de Sinop için hayati değer taşıyor. Zira doğal güzelliklerin paralelinde gelişen bilinçli bir turizm politikası, Sinop'un potansiyelini rahatlıkla açığa çıkarabilir.	Energy is not the only criterion in the matter of nuclear power plants, nature and tourism are very important too. These two criteria are vital for Sinop. Because, a conscious tourism policy that develops parallel with natural beauties can easily reveal the true potential of Sinop.	Scientist19	Academics / Scientists / Experts	Beni Akkuyu'larda Merdivensiz Bıraktın, p170
92	İnsanlar nükleer santralin etrafındaki alanda denize girmeyi tercih etmez. Çünkü nükleer santral ciddi bir tehdittir.	People would not prefer to swim in the area around the nuclear power plant. Because nuclear power plant poses a serious threat.	LocalNGO3	Local NGOs and activists	Beni Akkuyu'larda Merdivensiz Bıraktın, p170
93	İnşaat sırasında kent hareketlenebilir, esnaf, restoranlar ve oteller kısa vadede iş yapabilir. Kısa vadede hepimiz bu hareketlilikten yararlanırız ancak uzun vadede nükleer santral Sinop'a zarar verir. Sinop'un kurtuluşu nükleerde değil, turizmdedir. Nükleer santrale yapılacak 22 milyar dolarlık yatırım yerine turizme yapılacak 10 milyon dolarlık yatırım sayesinde Sinop, değil Türkiye'nin, Avrupa'nın turizm cenneti olur ve böylelikle gerçek istihdam sağlanır	During the construction, the city can do well in terms of business, local shops, restaurants and hotels can work with higher capacity for a short while. In the short term, we all benefit from this activity, but in the long run the nuclear power plant will damage Sinop. Sinop's salvation lies not in nuclear but in tourism. With a $ 10 million investment in tourism, instead of a $ 22 billion investment in the nuclear power plant, Sinop could become Turkey's tourism paradise for Europe, creating real employment	LocalResident2	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p170-171
94	Nükleer santral kurulması planlanan İnceburun Yarımadası ekosistem çeşitliliği açısından dünyada ender görülebilecek alanlardan biri	The ecosystem diversity in the İnceburun Peninsula, where there is a plan of constructing a nuclear power plant, is a rare thing to find all around the world.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p171
95	Nükleer santralin en küçük sızıntısı bile her yerde olduğu gibi Sinop'ta da tarım ve hayvancılığı doğrudan etkileyecek. Sinoplu balıkçıların, radyasyon sızıntısı olduğu yolunda çıkması muhtemel söylentilerle ilgili kaygısı çiftçiler için de geçerli.	Even the smallest leakage from the nuclear power plant will directly affect agriculture and animal husbandry in Sinop, as is the case everywhere. The farmers, as well as the fishermen, share the same concern about the possible rumours that there might be a radiation leakage.	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p172
96	Nükleere karşı olduğunu söyleyen pek çok kişiye rastladım ancak neredeyse herkes bıkkındı. "Yıllarca karşı çıktık ama zaten bize soran yok ki"	I ran into many people who said they were against nuclear, but almost everyone was weary of the situation. "We have been fighting for years but nobody bothers to ask our opinion"	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p172-173

ArgID	Argument	Translation	Who	Role	Source
97	Tanrı'nın insanlara bahşetmiş olduğu bu cennetin içine nükleer santral yerleştirmek bence vatana ihanettir. Ben diyorum ki bir mühendis olarak, nükleer santrali her yerde yapabilirsiniz ama Sinop'u Sinop dışında hiçbir yerde tesis edemezsiniz	I think it is treasonous to place a nuclear power plant in this paradise which God has bestowed on people. I say, as an engineer, that you can build a nuclear power plant anywhere but you do not have another city as naturally beautiful as Sinop.	LocalGovn1	Local Government	Beni Akkuyu'larda Merdivensiz Bıraktın, p173
98	Sinop'ta nükleer santral istemiyorum, başka yerde kurulsun demek bana saçma geliyor.	I think it is ridiculous to say "I do not want nuclear in Sinop, let them build it elsewhere".	LocalResident22	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p173
99	Kaza riskinin sıfırlanamamasından dolayı nükleere karşıyım	I stand against nuclear because the accident risk can never be zeroed in	LocalResident2	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p174
100	Sinoplulara danışılmamasından şikayetçiyim.	I resent it because the residents of Sinop have not been consulted	LocalResident26	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p174
101	Sinop halkı nükleer santral istemiyor. Böyle giderse on sene sonra herhalde balık yiyemeyecek durumda olacağız. Zaten Japonlarla karşılıklı olarak atılan bu imzalar benim iyice umudumu kırdı.	The people of Sinop do not want nuclear power plants. If we go this way, we will probably not be able to eat fish after ten years. These deals, which have already been mutually signed with the Japanese, are really disheartening.	LocalResident24	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p174
102	Doğamız, balıklarımız ölecek. Turizm bitecek. İnsan bile kalmayacak Sinop'ta. O yüzden sadece Sinop'ta değil hiçbir yerde nükleer santral istemiyorum.	Our nature, our fish will die. Tourism will cease. Even locals will leave Sinop. That's why I do not want nuclear power plants in Sinop or anywhere else.	LocalResident28	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p174
103	Avrupa ve Japonya nükleeri terk ederken sanayi gelişecek diye niye nükleer santral alalım.	Why do we buy nuclear power plants to improve the industry while Europe and Japan are busy abandoning it?	LocalResident12	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p174
104	Ben önce Türkiye'liyim. Nükleer santral için insanların az sayıda olduğu ve su kenarı bir yeri tercih etmek gerekli. O yüzden Sinop'un seçilmesini anormal karşılamıyorum. Bölgemizde süper güçlerin kurduğu bir küçük Ortadoğu devleti varken ben Türkiye'ye nükleer gücün girmesine taraftarım.	First of all, I am from Turkey. For a nuclear power plant, it is necessary to have a place around the water edge, and with little population. That's why I do not consider the choice of Sinop to be unusual. While there is a small Middle Eastern state in our region, established by super powers, I favour Turkey building nuclear plants.	LocalResident31	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p174-175
105	Nükleer santral Sinop'a katkı sağlayacak bence. Boşta gezen insanlarımız var, iş bulacaklar.	I think the nuclear power plant will contribute to Sinop. We have idle people, they will find work.	LocalResident14	Local residents	Beni Akkuyu'larda Merdivensiz Bıraktın, p175
106	Sinop'ta pek çok kişi nükleer ile ilgili fikir beyan ederken Çernobil'i anmadan geçemiyor. Sinop'taki ve hatta Karadeniz'deki ortak cümle "Şu kadar yakınım kanserden öldü, hâlâ evde en az bir tane kanser hastası var" oluyor	In Sinop, many people cannot help but mention Chernobyl while declaring an opinion about nuclear. The common sentence in Sinop and even in the Black Sea is "So and so many of my relatives have died from cancer, and there is still at least one cancer patient in the house".	AntiNukeNGO9	Anti-Nuclear NGOs / Activists / Journalists	Beni Akkuyu'larda Merdivensiz Bıraktın, p175
107	2023'e kadar sürecek inşaat aşamasında 20 bin kişi çalışacak, sonra da 7 bin kalifiye eleman Sinop'a gelecek	20 thousand people will work in the construction phase that will last until 2023, then 7 thousand qualified staff will come to Sinop.	LocalGovn7	Local Government	Vali değişince 'Çılgın Proje' rafa kalktı!, Radikal, 14.11.2013 [Accessed 15.01.2017]
108	"Bizim birinci önceliğimiz önümüzdeki 10 yılı planlamak. Önümüzdeki 10 yıl içinde Sinop'u ciddi bir değişim bekliyor. Önümüzdeki 18 aylık periyotta yapılacak sismik teknik ve oşinografik araştırmalar neticesinde ikinci nükleer santralin Sinop'a kurulması kesinleşirse, 2023 hedefleri arsında Sinop'a bir nükleer santral kurulacak. Sinop'a kurulacak santral 4Atatürkbarajının ürettiği enerjiyi üretecek hacimde bir nükleer santral tesisi olacak ve çalışmalara başlanacak. 2023'e kadar bu nükleer santral inşaat aşaması devam edecek. İnşaat aşamasında 20 bin kişiyi bulan çalışma iş gücü oluşacak. Nükleer santral tam kapasiteli çalışmaya başladığızaman7 bin kalifiye insan Sinop'a gelecek. Sinop şu anda 38 bin nüfusa sahip. Bu nükleer santralle birlikte 30 bin nüfus daha ilave edilecek.	Our first priority is to plan for the next 10 years. In the next 10 years, Sinop is expected to undergo a serious change. If the result of the seismic, technical and oceanographic surveys to be carried out over the next 18 months are positive, a second nuclear will be constructed in Sinop until 2023. The nuclear plant in Sinop will have the volume to produce the energy equivalent to the energy produced in 4 Atatürk dams. The construction phase of this nuclear power plant will continue until 2023. During the construction phase, 20 thousand people will be employed. When the nuclear power plant starts to operate at full capacity, 7 thousand qualified people will come to Sinop. Sinop now has a population of 38 thousand. With this nuclear power plant, 30	LocalGovn7	Local Government	Vali değişince 'Çılgın Proje' rafa kalktı!, Radikal, 14.11.2013 [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
		thousand more people will be added.			
109	Akkuyu'ya yer lisansı verilen 1976 tarihine göre koşullar çok fazla değişti. TMI ve Çernobil kazaları henüz olmamıştı. Turizm etki değerlendirme yoktu.	After 1976 site permit granted to Akkuyu, the conditions changed a lot. TMI and Chernobyl accidents had not happened then. There was no tourism impact assessment.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p7
110	Bugün Akkuyu'ya nükleer santral kurmak; turizmi, oradaki sebze meyve üretimini, son toplamda, ciddi bir şekilde baltalamak demektir.	To build a nuclear power plant in Akkuyu would bring about (…) the end of the production of vegetables and fruits in the region	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p9
111	…evvelce Türkiye'nin nükleer santral tesisi ne zaman söz konusu olsa ayağa kalkan Yunan Basını, bugün sus pus oturmuş, keşke yanılsam, pusuda bekliyor. Çünkü biliyor ki, oraya kurulacak bir nükleer santral, turizm rekabetinde bizi, sonuçta, fırlatıp, Yunanistan'ın çok arkasına atacaktır.	…The Greek press, which was very concerned when Turkey's nuclear power plant was in question, is now sitting in a haze, and I dare say, almost waiting in ambush. Because, you know, a nuclear power plant to be built there will throw us in the competition of tourism far behind Greece, after all.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p10
112	Nükleer reaktör satın alarak nükleer teknoloji sahibi olunmaz. Anahtar üstünde teslim nükleer reaktör sahibi olunur.	You do not automatically have nuclear technology by buying nuclear reactors. You only have a turnkey delivered nuclear reactor when you buy a nuclear reactor	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p27
113	[(Enerji Talebi) - (Alışılmış Kaynaklarla Sağlanabilecek Üretim)] farkını kapatacak yegâne kaynak = [Nükleer Enerji Üretimi]	[(Energy Demand) - (Output to be Supplied with Conventional Resources)] The only resource that will fill the gap in between = [Nuclear Power Generation]	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p35
114	Yeni bir enerji kaynağı: Verimlilik	A new energy source: Efficiency	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p37
115	(1970'lerdeki) …nükleer bilim adamları tahminlerinde yanılmış olacaklardı. Ne "dünya enerji talebi" öngörüldüğü gibi hızlı artacak, ne de nükleer enerjiye yüklenecek işlev sanıldığı kadar hacimli olacaktı. ... (TMI ve Çernobil sonrası) kamuoyunun nükleer enerjiye dönük korkusu ve tepkisi artacak; nükleer enerjiye bağlanan umutlar belirgin bir biçimde gerileyecekti.	(In the 1970s) ... nuclear scientists were wrong in their estimates. Neither the "world energy demand" increased as predicted nor the function of the nuclear energy was as voluminous as previously anticipated. ... (After TMI and Chernobyl) public fear and reaction towards nuclear energies increased. The hopes connected to nuclear energy declined significantly.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p44
116	Güneş enerjisinin büyük ölçeklerde kullanılmasına ilişkin olarak ortaya konulan haklı iki eleştiriden biri, bu enerjinin yeterince yoğun olmaması, bu arada meteorolojik koşullara göre değişkenlik göstermesi, diğeri de haliyle geceleri sağlanamayacak bir enerji biçimi olmasını işaret ediyordu.	One of the two justifiable criticisms of the use of solar energy on a large scale was that this energy, which was subject to meteorological conditions, was not intense enough, while the other was that it was a form of energy that could not be produced at night.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p45
117	…örneğin eğer "atom bombası" değil de "güneş bombası" yapılsaydı, yöneliş çok muhtemelen nükleer enerjiye değil, güneş enerjisine olacaktı.	... for example, if a "solar bomb" could be made instead of an "atomic bomb", the governments would most likely opt for solar energy, not nuclear energy.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p47
118	Siyaset zeminindeki denklemleri bilmeden, sırf teknik ve teknolojik akıl yürütmelerle enerji meseleleri konuşulamaz. Emek verip, dirsek çürütüp, meselenin belirleyici siyasal özelliklerini araştırmalısınızdır, öğrenmelisinizdir.	One cannot talk about the energy issue from a technical or technological perspective, without knowing what is going on behind doors in politics. You must learn, work hard, and strive to investigate the defining political characteristics of matter too.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p48
119	(Türkiye olarak) … kalkınmak zorundayız.	We have to develop… (as the Turkish nation).	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p49
120	…ancak dünya ortalamasının civarında enerji tüketen bir ülkeyiz. Enerji tüketimimizi artırmak istememiz doğaldır.	…however, our country's energy consumption is lower than the world average. It is only natural that we want to increase our energy consumption.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p49
121	… belli miktarlardaki enerji tüketimi belli düzeylerdeki kalkınmışlıkla eşanlamlıdır. Birisini öteki olmadan düşünemez ve amaçlayamazsınız. …bir yandan enerji talebi, diğer yandansa yerel	Certain amounts of energy consumption is parallel to certain levels of development. You cannot think of and aim for one without the other.... if there is a clear deficit between energy demand on the	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p50

ArgID	Argument	Translation	Who	Role	Source
	kaynaklarla sağlanabilecek enerji üretimi (…) arasındaki fark bir açık gösteriyorsa, o zaman haliyle bu açığın hangi yollarla kapatılacağına ilişkin tasarılar geliştirilmektedir.	one hand and energy production (...) that can be achieved with local resources on the other, then plans should be made as to how to fill this gap.			
122	Belirlediğimiz çerçevede zımnen üç varsayımda bulunulduğu vurgulanmalıdır. Birincisi ulusal elektrik enerjisi talebi, ikincisi (bunu karşılamada) ulusal kaynakların yetersizliği, üçüncüsü de bu ikisinin farkının nükleer enerjiden başka bir enerjiyle giderilmesini mümkün olmadığı...	It should be emphasized that three hypotheses are implicit in the frame we put forward. The first is the request of the national electricity, the second is the inadequacy of the national resources in meeting it, and the third is that it is impossible to compensate for the difference among the first two without nuclear energy.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p53
123	Konjonktür değişmiştir. (…) Taa Sibirya'dan tüm Avrupa'ya ve ülkemize doğalgaz taşınmıştır.	The conjuncture has changed. (...) Natural gas has moved all the way from Siberia to all of Europe and my country.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p56
124	Esasen ülkemiz, özellikle de Doğu Anadolumuz, orta Doğu'nun en zengin su kaynaklarına sahiptir.	In fact, our country, especially Eastern Anatolia, has the richest water resources in the Middle East.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p57
125	…büyük ölçekte enerji tüketimi planlayan senaristlerin ölçeğinde böyle küçük küçük (çatı üstü güneş panelleri) damlaya damlaya göl oluşturacak seçenekler pek yer almamaktadır. Oysa almalıdır.	The large-scale energy consumption forecasters do not take into consideration small but effective steps like roof-top solar panels, that, when combined together, would slowly but surely contribute to energy production. But they should.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p58
126	Aslında tabiatıyla her şey bir siyaset konusudur. Siz, birçok sebepten, o arada atık sorunundan dolayı, atom çekirdeği parçalanması bazında oluşan nükleer enerjiyi istemeyebilirsiniz. Buna karşılık yıldızların güneşimizin özündeki atık açısından sorunsuz çekirdek kaynaşması bazında oluşan füzyon enerjisini isteyebilirsiniz. Ama teknik olarak bunu sağlayamıyorsunuzdır. Başkaca seçeneğiniz yoksa o zaman mecburen nükleer enerjiye yüklenirsiniz. Yahut elektriksiz kalmayı, mum yakmayı seçebilirsiniz. Bu da kuşkusuz siyasi bir tercihtir. (...) İşte biraz bunun gibi, siz de başkaca bir sebep gözetmeksizin ama "temel bir kaygıdan" (atık mesela) dolayı nükleer enerjiyi gündemden düşürmek isteyebilir, ilk elde pahalı olmakla beraber bir başka seçeneğe, mesela güneş enerjisine yönelebilirsiniz.	In fact, everything is a political issue by their nature. You may not want nuclear energy produced from the fission of atomic nuclei due to waste problems. On the other hand, you can ask for fusion energy, the essence of our sun and stars, which is free of nuclear waste. But technically you cannot provide it. If you do not have any other options, then you are obliged to install nuclear energy. Or you can choose to stay without electricity, burn candles. This is undoubtedly a political choice.(...) Here, a little bit like this, you may want to drop the nuclear energy from the agenda without considering any other reason than "a basic worry" (eg waste), you can go for another even more expensive option, for example solar energy..	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p60-61
127	Bu arada bizim adımıza karar verebilirmiş gibi, Uluslararası Atom Enerjisi Ajansı'na "hangi tür nükleer reaktörü edinmemizin daha iyi olduğu" sorulabilmiştir.	In the meantime, the International Atomic Energy Agency was asked "which type of nuclear reactor is better for our end", as if they could decide on behalf of us,	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p63
128	"Akkuyu'ya yer lisansı verildi" demek "ülkemize bir nükleer santral kurulacak olursa mutlaka buraya kurulacak demek" değildir. **O günkü koşullar ve ölçütler itibariyle** "buraya kurulabilir" demektir. Kurulmayabilir de.	Saying "Akkuyu has been granted a site permit" does not necessarily mean "if a nuclear plant is set up in our country, it must be set up here". It means, "it may be set up here" **in terms of conditions and criteria of that specific period**. Or, it may not.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p66
129	Nükleer enerji kararı (…) bugün teknik bir zorunluluk değil, siyasi bir tercih olarak vazedilmek gerekir. Ne siyasiler sorumluluklarını unutup "teknikmiş" gibi gösterilen bir zorunluluk önermesinin arkasına sığınmalıdır, ne de bürokrat, teknokrat ve akademik çevreler nükleer enerji kararını siyasi boyutundan soyutlayıp bir zorunluluk gibi takdim etmek suretiyle siyasilerin yerine geçmelidirler.	Nuclear energy decision (...) is not a technical necessity today, but a political choice. Neither politicians should forget their responsibilities and take refuge behind their proposition to frame it like it is a "technical" necessity, nor should bureaucrats, technocrats, and academic circles should take the place of politicians by detaching the nuclear energy decision from its political dimension and frame it as a necessity.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p67
130	…teknik çevreler (…) Türkiye sanki bir enerji yetmezliğindeymiş, o arada yeni santrallerin açılmasına ya da kurulmasına demokratik tepkiler engel olmaktaymış gibi tuhaf bir savı şaşırtıcı bir şekilde yaymaktadırlar. …ne zaman nükleer santraller gündeme gelse	The strange arguments that Turkey seems to be suffering from energy deficit and that it is the democratic reactions that have been hampering the opening or establishment of new plants, are surprisingly spreading in the technical sphere. Whenever nuclear	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p69

ArgID	Argument	Translation	Who	Role	Source
	"bunlar kurulmazsa karanlıkta kalacağız"dır. Onun için bu santraller bir an önce kurulmalıdır.	power plants are on the agenda, the main idea is "if they are not established, we will remain in the dark". For this reason, these plants must be established as soon as possible.			
131	5 Milyar dolar tutarında bir santral kurup üreteceğiniz enerjiyi bunu sağlıklı bir şekilde taşıyamayacak olan şebekeye mi verirsiniz? Yoksa bu tahsisatla şebekeyi adam mı edersiniz?	Would you set up a power plant worth 5 billion dollars and give it to a network that cannot carry it properly? Or would you put the already existing network in order, with this money (5 million dollars)?	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p70
132	..bir "nükleer macera" çerçevesinde en çok neden korkarım bilir misiniz? -Çevreye üst güvenlik önlemleri sayesinde hiç zarar vermeyecek olsa da mizah romanlarına konu olacak bir kazayla 5 milyar dolarlık bir nükleer santralin atıl kalacak olmasından.	.. Do you know what I fear the most when it comes to a "nuclear adventure"? The fact that a 5 billion dollar nuclear power plant, one that has been equipped with top security measures, might remain idle if it is involved in an accident, the cause of which is too comic for even the caricaturists to draw.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p77
133	Güvenlik hesaplarında TMI kazası, eğer kaza senaryosu düzgün tahmin edilip vazedilebilse, bütün çıplaklığıyla çıkacaktır. Çıkacaktır ama kaza senaryosu kimsenin aklına gelmemiştir.	If the accident scenario can be predicted and put forward properly, The TMI accident, would be seen as clear as the daylight in the security accounts. It will be seen, but nobody has plans for an accident scenario.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p82
134	Kaza oluyor diye uçakları seferden alıkoymuyoruz. Alıkoymayı düşünebiliriz de. Ama böyle bir karar artık teknik bir karar değildir. Siyasi bir karardır.	We do not stop the planes from flying just because there are plane accidents, which we could. Then, it is no longer a technical decision, but a political one.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p84
135	(kaza olasılığı dışında tartışılması gereken) iki husus daha var. (…) Birisi "nükleer atıklar sorunu", öteki de reaktörün ömrünü tamamlamasından sonraki "reaktör söküm" sorunudur.	Two more issues should be discussed besides the possibility of an accident. The first is the "nuclear waste problem" and the other is the "decommissioning of the reactor" that will take place after the reactor completes its life cycle.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p84
136	Hiç kimse (…) yanıbaşında nükleer atık barındırmak istemeyecektir. Ayrıca hiç kimse yeryüzünde yüzbinlerce yıl boyunca nükleer kabristanların başına hiçbir şey gelmeyeceğini (…) garanti edemeyecektir.	No one (...) will want to be neighbours with nuclear waste by their side. And no one will be able to guarantee that nothing will happen to the nuclear cemetery for hundreds of thousands of years on earth.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p87
137	Hiçbir teknisyen ya da bürokrat haddini aşmamalı, 250 bin yılın ya da bin yılın kefili olmaya yeltenmemelidir. Ortaya konan açıklamaları edinmiş sıradan bir insanın bu yöndeki karar hakkına da, kararına da saygılı olmalıdır.	No technician or bureaucrat should go overboard and try to be a guarantor for 250 thousand years or even a thousand years. He/she must be respectful to the decision of the ordinary person who has been informed about the subject.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p88
138	Enerji, özellikle de nükleer enerji meselesi, çoğu kez salt teknik bir sorunmuş gibi ortaya getiriliyor. (…) Görülmesi gereken şu ki, teknik boyutlar, siyasetin şemsiyesi altında gelişiyor ve yönleniyor. Teknik de, siyasete yön verebilir elbette. Ama *buyurucu* olan siyasettir.	Energy, especially the nuclear energy issue, is often presented as a purely technical problem. (...) It should be seen that technical dimensions are directed and developed under the umbrella of politics. The technical aspect can guide politics too. But politics seems to be the commanding power in the matter.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p91
139	"Dünya geneli" farklıdır, "Türkiye geneli" farklıdır. Dünya genelini bilmemiz gerekir. Ama bunu, Türkiye'miz açısından başımızı alamayacağımız bir hipnoz saymamız yanlış olur.	The general conditions of the global world are different from the general conditions in Turkey. We are supposed to know about the global conditions, but we cannot apply them dogmatically to Turkey, as if hypnotized.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p93
140	Türkiye'nin enerji sorunu o arada "tek bir yalın paket" olarak düşünülemez. Örneğin "genel enerji" başkadır, elektrik enerjisi başkadır.	Turkey's energy problem cannot be thought of as a monolith. For instance, energy in general is different from electric energy.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p94
141	…büyük açıklar kapatılmak istenirken büyük santrallerin yanısıra minik birimlerden oluşacak katkının sonuçta tek bir dev katkıya pekala eşdeğerde olabileceği gözden uzak tutulmamalıdır.	While talking about meeting the energy demand, we should forget that the energy contribution of small production units along with large centrals can be the equivalent of the energy produced by one monolithic power source.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p94

ArgID	Argument	Translation	Who	Role	Source
142	(nükleer bilimcilere ithafen) Nükleer politikalara merak duyuyorsanız bu konuda çalışın, tezler yapın, yaptırtın. Ama entegre diferansiyel denklemlerle nötronları arkanıza alıp nükleer kaygılar içindeki gençlere doğaseverlere "siz nükleerden anlamazsınız" demeye getirmeyin.	(To nuclear scientists) If you are curious about nuclear policy, then engage in the matter actively, write theses on it. But do not claim that the youth or the environmentalists do not understand anything about nuclear, backing yourselves up by the neutrons and integrated differential equations.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p96
143	Kökten nükleerci birinci sav: Ülkemizde nükleer enerji üretmek gerekliliği vardır.	The first argument of radical nuclear proponents: There is a necessity to produce nuclear energy in our country.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p119
144	Kökten nükleerci ikinci sav: zengin uranyum ve toryum kaynaklarımız vardır. Bunlar bazında nükleer enerji üretmeliyizdir. Bu yaklaşım bizi enerji dışa bağımlılığından kurtarır.	The second argument of radical nuclear proponents: We have rich uranium and thorium reserves and we should produce nuclear energy by making use of these reserves. This approach will free us from foreign dependence.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p131
145	Kökten nükleerci üçüncü sav: Ülkemizde nükleer enerji üretimine girişerek nükleer teknoloji sahibi oluruz.	The third argument of radical nuclear proponents: By engaging in nuclear energy production in our country, we will have nuclear technology as well.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p134
146	Kökten nükleerci dördüncü sav: Türkiye nükleer enerji üretimine girişerek nükleer silah yapabilir.	The fourth argument of radical nuclear proponents: By producing nuclear energy, Turkey can make nuclear weapons.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p135
147	Kökten nükleerci beşinci sav: Radyoaktfi nükleer atıklar hiç mesele değildir.	The fifth argument of radical nuclear proponents: Radioactive nuclear waste poses no problem at all.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p136
148	Kökten nükleerci altıncı sav: Nükleer kazalar, özellikle de Çernobil kazası, fazla önemsenmeye gelmez.	The sixth argument of radical nuclear proponents: We should not heed nuclear accidents too much, particularly the Chernobyl accident.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p137
149	Akkuyu mevkiine kurulacak bir nükleer santral, "Türkiye'nin Akdeniz sahilleri radyasyonlu" gibi ne kadar gerçek dışı olursa olsun (…) gayet etkin bir antipropaganda malzemesine çanak tutacak ve bölge turizmini fevkalade olumsuz etkileyecektir.	A nuclear power plant to be established at Akkuyu site will have a negative impact on tourism in the area, and make Turkey's Mediterranean coast subject to anti-propaganda and rumours that the area is allegedly contaminated with nuclear waste.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p140
150	(geriye) Trakya'nın Karadeniz sahili kalmaktadır. Nedir ki bu yöre, bundan otuz kırk yıl sonrasına dönük ciddi bir başka turizm cenneti olma potansiyelindedir. Burası olası turizm gelirleri açısından dikkate alınmalı, öylece tartılmalıdır. (…) Turizm mi yoksa enerji üretimi mi sorusu yanıtlanmalıdır.	All that is left behind is the Black Sea coast of Thrace region. Indeed, this region has the potential to become a serious tourism paradise for thirty to forty years from now. This should be taken into consideration in terms of possible tourism incomes, and should be weighed as such. (...) The authorities should answer the question of whether tourism or energy production should be prioritized in the region.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p176
151	Nükleer santrale kolay kolay tatmin edici bir sigorta yaptırılamayacağı hususu da önemle vurgulanmalıdır.	It should also be emphasized that it is not easy to make a satisfactory insurance for the nuclear power plant.	Scientist19	Academics / Scientists / Experts	Geçmişten Bugüne Nükleer Enerji Tartışması p179
152	(Nükleer santraller) Çevreyi kirletmez, Karbon dioksit salmaz (Sera etkisine katkısı yoktur), Azot oksitleri ve sülfür oksitleri salmadığı için asit yağmurlarına sebep olmaz.	(Nuclear power plants) do not pollute the environment, do not release carbon dioxide (do not contribute to greenhouse effect), do not cause acid rains because they don't not release oxides of nitrogen and oxides of sulphur.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p12
153	(Nükleer santraller) Yeni bir teknolojinin ülkeyi her yönden (teknolojik, kültürel, ekonomik…) zenginleştirmesine sebep olur.	Nuclear power plant technology will help to enrich the country technologically, culturally and economically.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p12
154	Ülkenin nitelikli personel potansiyelini artırır	It will increase the potential of qualified staff of the country.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p12

ArgID	Argument	Translation	Who	Role	Source
155	Ülke eğer doğal uranyum ve toryum yataklarını nükleer yakıt kaynağı olarak kullanabiliyorsa, kaynak bakımından dış ülkelere bağımlı olmaz.	If the country can use its own uranium and thorium reserves, then it will not be dependent on other countries for resources.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p12
156	Bu nükleer santral bunun yerini alması gereken termik santrallerinin civarlarında sebep olacağı üst nefes yolları hastalıklarına ve anfizeme yol açmaz	This nuclear power plant does not cause the upper respiratory tract diseases and the emphysema that will be found in the vicinity of the thermal power plants it will to replace.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p12
157	Risk yönünden en düşük tehlike riskine sahip bir teknolojinin rahatlığını sağlar	(Nuclear) Provides the facility of technology with the lowest danger risk	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p12
158	Üretim birim fiyatı termik santralleininkinden daha ucuza mal olan güçlü bir ekonomik olanak sağlar	(Nuclear) provides e strong economic opportunity as the unit price of production is cheaper than that of thermal power plants	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p12
159	Batı anlamındaki nükleer güvenlik doktrinine uygun olarak inşa edilen bir nükleer reaktörün tüm yapısı, bir kaza olsa bile açığa çıkacak olan radyasyonları dışarıya iletmeyecek olan kalın bir koruyucu bina içine oturtulmaktadır.	The whole structure of a nuclear reactor, constructed in accordance with the nuclear doctrine in the Western standards, is housed in a thick protective building which will not transmit the radiation that may be released even in the case of an accident	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p15
160	Batı anlamındaki nükleer güvenlik doktrinine göre nükleer santrallerde kullanılan tüm parçalarda uygulanan tasarım ve kalite kriterleri uzay teknolojisininkiler kadar üst düzeyde tutulmaktadır.	According to the Western nuclear doctrine, the design and quality criteria applied to all parts of nuclear power plants are as high as those of space technology.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p20
161	Kömür, mazot ya da doğal gaz gibi fosil yakıtlarla çalışan termik elektrik üretim santrallerinin çevreye pek çok zarar verdiği tespit edilmiştir. Bu yakıtların yanmak için havaya ihtiyacı vardır. Bu kimyasal işlem sonucunda doğal olarak karbon dioksit (CO2), azot oksitler (NOX) ve kükürt dioksit (SO2) gibi gazlar oluşmakta ve bunlar santralin bacasından atmosfere salgılanmaktadır. Nükleer santrallerde bunun gibi gazlar oluşmamaktadır.	It has been found that thermal power generation plants operating with fossil fuels such as coal, diesel or natural gas cause many environmental damage. These fuels need air to burn. As a result of this chemical reaction, gases such as carbon dioxide (CO2), nitrogen oxides (NOx) and sulfur dioxide (SO2) are formed and they are released from the plant to the atmosphere. Nuclear plants do not release such gasses.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p24
162	…termik santrallerin civarındaki yerleşim alanlarında anfizem ve üst nefes yolları hastalıklarında daima, inkarı mümkün olmayan net bir artış gözlenmektedir.	…there is an undeniable increase in the number patients suffering from emphysema and upper respiratory diseases, inhabiting in the residential areas around the thermal power plants	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p25
163	İleride rüzgar santralleri ve güneş pilleriyle çalışan büyük güneş santralleri devreye girdiğinde ve bunların kullanımı iyice yaygınlaştığında bugün pek çok çevrecinin yüzeysel bir biçimde bunları sorunsuz ve çevre dostu ideal santraller olarak görmelerine rağmen bu santrallerin çevreye hiç de dost olmadıkları daha belirgin bir biçimde yaşanarak anlaşılacaktır. (...) Bugün elektriğin depolanması ancak aküler aracılığıyla mümkündür. Oysa akü demek kurşun ve sülfürik asit demektir ki bunların üretimi çevreyi en çok kirleten teknolojilere dayanmaktadır.	When large solar power plants operating with wind power plants and solar batteries enter the market in the future and their use has become more widespread, it will become clear that the plants, which many of the environmentalists superficially consider to be ideal and environmentally friendly, are not friendly at all. (...) Today, the storage of electricity is only possible through the use of storage batteries. Battery, on the other hand, means lead and sulphuric acid, and their production is based on the technologies that pollute the environment the most.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p27
164	Nükleer enerjiye geçişin doğal hedefleri: 1- Ülkenin elektrik üretimi ihtiyacını karşılamaktır. 2- Ülkenin doğal nükleer yakıt kaynaklarını değerlendirmektir. 3- Ülkenin, kısa zamanda ayrıntısıyla uygulayabileceği, ileri bir teknolojiyi transfer etmektir.	Natural targets of transition to nuclear energy: 1- To meet the electricity production need of the country. 2- To make use of the country's natural sources of nuclear fuel. 3- To transfer advanced technology that the country can use after a while.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p33
165	(Nükleer enerjiye geçişte) …hükümetlerden bağımsız, kararlı ve kalıcı bir siyasi irade gereklidir. Bu siyasi iradenin dayandığı, ülke yararına, bilimsel bir nükleer enerji ulusal politikası ve stratejisinin A) belirlenmiş, B) kabul ve C) resmen tescil edilmiş olması gereklidir.	In the transition to nuclear energy, an independent, decisive and permanent political will is needed from the governments. It is for the benefit of the country, based on this political will, that a scientific policy and strategy for nuclear energy is established, B) accepted and C) officially registered.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p33

ArgID	Argument	Translation	Who	Role	Source
166	(Nükleer enerjiye geçişte) nükleer enerji uygulamaları ile ilgili mevzuatın yeterli olması gerekmektedir.	The legislation on nuclear energy applications must be thoroughly enacted before the start of the transition to nuclear energy	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p33
167	(Nükleer enerjiye geçişte) Ülkenin teknik insan potansiyelinin yeterli olması gereklidir.	In the transition to nuclear energy, the technical human potential of the country must be sufficient.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p33
168	(Nükleer enerjiye geçişte) ülkenin teknolojik potansiyelinin en azından en kolay nükleer teknolojiyi kolayca özümleyebilecek düzeyde olması gereklidir.	In the transition to nuclear energy, it is necessary for the technological potential of the country to easily adapt the most basic nuclear technology.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p33
169	Seçilen nükleer santral asla ve alsa yeni bir prototip tasarımı değil, fakat güvenli ve güvenilir (Safe and reliable) bir tip olmalı, yani örnekleri fizikman mevcut ve uzun süre denenmiş olmalıdır.	The selected nuclear power plant must never be a new prototype design, but must be a safe and reliable type, i.e., the examples should be physically present and must have been tested for a long time.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p33
170	Nükleer atıkların çevreye zarar vermeden muhafaza edilmeleri demek olan "nükleer atık yönetimi" ilkeleri ve kuralları artık iyice bilinen pozitif bir bilim durumuna gelmiştir. (…) Bunlara harfi harfine uyulduğu takdirde nükleer atıkların bir tehlikesi yoktur.	The "nuclear waste management" principles and rules, which means that nuclear waste should be preserved without harming the environment, has now become a well-known positive science. (...) There is no danger of nuclear waste if these rules are complied with.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p35
171	…yüksek düzeyde radyoaktif olan nükleer atıklar radyo aktifliklerinin yaklaşık %98 kadarını 200 yıl içinde kaybetmektedirler. Bu sebeplerden ötürü nükleer atıkları bu kabil depolara (yer altı depoları) gömmenin insan sağlığı açısından herhangi bir riski yoktur.	... highly radioactive nuclear wastes lose about 98% of their radioactivity in 200 years. For this reason, burying nuclear waste into these storable reservoirs (underground storage) poses no health risks for humans.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p35
172	Bu konuda (atık yönetimi) asıl tehlike, nükleer atıkların çevreye büyük zarar verdiği şamatasını koparark kollektif bir paranoya ve histeriye sebep olmak isteyen çevreci görünümlü aşırı nükleer enerji karşıtlarındadır	The real danger with waste management is the radicalized nuclear opponents (a.k.a. the so-called environmentalists) who want to lead to hysteria and collective paranoia about nuclear energy harming the environment.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p35
173	İnsanın günlük yaşamında riski sıfır olan hiç ama hiçbir olay, hiç ama hiçbir davranış yoktur. Mesela: Güneş altında dolaşmanın riski güneş çarpmasıdır (…), bütün dünyanın gelişmiş ülkelerinin yararlandığı nükleer enerjiden yüz çevirmenin riski ülkenin refah içinde gelişmesinin önüne geçmektir.	There is no course of action that has zero risk in a person's daily life. For example: The risk of walking under the sun entails the risk of having a heat stroke (...) and the risk of turning away from nuclear energy, which all developed nations use, entails stopping the country from flourishing in welfare.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p36
174	Nükleer elektriğin oranının artması demek: daha az petrol, daha az kömür ve daha az doğalgaz tüketimi; yani birincil enerji kaynaklarının daha az satışı demektir. Bu ise dünya petrol ve kömür kartellerinin karlarına büyük bir engel oluşturmaktadır.	Increasing the ratio of nuclear electricity means less petroleum, less coal and less natural gas consumption; That is, less sales of primary energy resources. This is a major obstacle to the profits of world's oil and coal cartels.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p47
175	Türkiye toryum rezervi bakımından dünyanın ikinci ülkesidir. Bu olağanüstü büyük imkanın heba edilmeden değerlendirilmesi ülkenin geleceği için hayati bir meseledir. Toryumlu reaktörlerin teknolojisine mutlaka hakim olmamız gerekmektedir. Bu bakımdan Devlet bu yönde kesin ve kararlı bir siyasi irade ortaya koymalıdır.	Turkey is the second country of the world in terms of thorium reserve richness. It is a vital issue for the future of the country to take advantage of this extraordinarily great opportunity. We must absolutely dominate the technology of thorium reactors. The State should establish a definite political will in this direction.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p51
176	Teknoloji transferine hakim olması, teknoloji yenileştirme ve geliştirmesi yapması, stratejik nükleer maddeleri bulup çıkartması, nükleer tesislere lisans vermesi, üniversiteler ve gerek yurt içinde, gerekse yurt dışındaki diğer araştırma kurumlarıyla sıkı bir işbirliği gerçekleştirebilmesi için TAEK'e gerçekten de otonom bir kurum statüsü verecek olan yasal düzenleme acilen yapılmalıdır.	TAEK should really be given the status of an autonomous institution so that it can master technology transfer, innovate and develop technology, find strategic nuclear materials, license nuclear facilities, universities and other domestic and international research institutions. This legal regulation must be made urgently.	Scientist7	Academics / Scientists / Experts	50 Soruda Türkiye'nin nükleer enerji sorunu p51
177	…nükleer santrallerin zararının o bölgeyle sınırlı kalmaması, gözle	It is sometimes difficult to organize the local movement since the	AntiNukeNGO12	Anti-Nuclear	Nükleer karşıtı hareketin

ArgID	Argument	Translation	Who	Role	Source
	görülür etkilerinin bir HES veya termik santral kadar belirgin olmaması (en azından kaza veya sızıntı yapıncaya dek) yereldeki hareketliliği örgütlenme konusunda bazen sıkıntı yaratabiliyor.	damage of the nuclear plants are not confined to that specific area, and since the impacts are not as visible as those of HEPPs or thermal power plants (unless there is an accident or leaking).		NGOs / Activists / Journalists	dünü ve bugünü, *in İsyanın ve Umudun Dip Dalgası, p98*
178	Örneğin, 2000'den önce nükleer enerji yerine hidroelektrik santrallerin çözüm olabileceği söylenirdi. Türkiye'de HES ile yaşanan sorunlar, nükleer karşıtlarının bu öneriyi dillendirmekten vazgeçmesine neden oldu. Öte yandan güneş ve rüzgâr enerjisinde yaşanan gelişmeler, bu enerji kaynaklarının nükleer enerji yerine kullanılabileceği argümanını güçlendirdi.	For example, before 2000, it was said that hydroelectric power plants could be the solution, instead of nuclear plants. The problems with the HEPPs in Turkey caused the nuclear opponents to give up this suggestion. On the other hand, developments in solar and wind energy have supported the argument that these energy sources can be used instead of nuclear energy.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Nükleer karşıtı hareketin dünü ve bugünü, *in İsyanın ve Umudun Dip Dalgası, p98*
179	Nükleer santraller iddia edildiği gibi ülkemizi güçlendirmeyecek, aksine Amerika'ya ve zengin emperyal bloğa daha fazla bağımlı hale getirecektir. Bu nedenle Türkiye'nin acil enerji planlamasına ihtiyacı vardır, bu planlama yapılmadan nükleer projelerine girişilmesi bölgedeki savaş tüccarlarının elini güçlendirmektedir.	Nuclear power plants will not strengthen our country as it is claimed, but will make it more dependent on America and the rich imperial bloc. For this reason, Turkey needs urgent energy planning, and the introduction of nuclear projects before this planning strengthens the hand of war mongers in the region.	AntiNukeNGO5	Anti-Nuclear NGOs / Activists / Journalists	Nükleer karşıtı mücadele ve NKP, *in İsyanın ve Umudun Dip Dalgası, p103*
180	Mevcut enerji politikalarının toplumsal eşitsizliği daha da derinleştireceği ortadadır.	It is clear that current energy policies will further deepen social inequality.	AntiNukeNGO5	Anti-Nuclear NGOs / Activists / Journalists	Nükleer karşıtı mücadele ve NKP, *in İsyanın ve Umudun Dip Dalgası, p103*
181	Nükleer santrallere dayalı bir enerji modeliyle, bölgedeki savaş süreci derinleşmektedir. Ülkeler arasındaki iş bölümü ve pazar yaratma yarışı nükleer bir savaşın fitilini yakmak üzeredir.	With an energy model based on nuclear power plants, the battle process in the region is deepening. The division of labour between countries and the race to create a market is slowly planting the seeds of a nuclear war.	AntiNukeNGO5	Anti-Nuclear NGOs / Activists / Journalists	Nükleer karşıtı mücadele ve NKP, *in İsyanın ve Umudun Dip Dalgası, p103*
182	Nükleer enerji modelinin, toplumsal kalkınmanın sağlanması açısından önemli bir konuma sahip olduğu iddiaları, sermayenin bir yalanı olmanın yanı sıra, toplumda oluşması muhtemel antikapitalist, antimilitarist bir tepkinin önüne geçme gibi bir amacı da taşımaktadır. Nükleer santraller, bölgedeki milliyetçi eğilimlerin güç göstergesi olarak kullanılmaktadır. Ama bu güç asla Türkiye'deki milliyetçilerin iddia ettiği gibi devletin egemenliğine verilmeyecektir.	The claim that the nuclear energy model has an important position in terms of ensuring social development is not only an asset to the capitalist, but it also carries an intention of preventing an anti-capitalist, antimilitarist reaction in the society. Nuclear power plants are used as power indicators of nationalist tendencies in the region. But this power will never be given to the sovereignty of the state as claimed by the nationalists in Turkey.	AntiNukeNGO5	Anti-Nuclear NGOs / Activists / Journalists	Nükleer karşıtı mücadele ve NKP, *in İsyanın ve Umudun Dip Dalgası, p103*
183	Nükleer karşıtı mücadele (…) enerjinin adil, eşit dağılımını, merkezi ve otoriter yönetim karşısında demokrasi ve özgürlüğü bir pratik olarak hayata geçirebilecek bir nüveyi geliştirebilmelidir.	The anti-nuclear struggle (...) should develop a core that will allow the just, equitable distribution of energy, democracy and freedom in the face of central and authoritarian rule.	AntiNukeNGO5	Anti-Nuclear NGOs / Activists / Journalists	Nükleer karşıtı mücadele ve NKP, *in İsyanın ve Umudun Dip Dalgası, p104*
184	Nükleer karşıtı mücadelenin, kirli sanayi, silah, savaş pazarlayan, kitle turizmini besleyen, iklimleri değiştiren, sermayeye karşı bir barış mücadelesi olarak örgütlenmesi halinde bir başarı şansı olacaktır. Bu sürecin en önemli politik başlığı barış ve antikapitalizm olacaktır.	An anti-nuclear struggle will be a success only if it is organized as a struggle for peace against capitalism that feeds on the dirty arms industry, markets war, nourishes mass tourism, and changes climates. The most important political headline of this process should be peace and anti-capitalism.	AntiNukeNGO5	Anti-Nuclear NGOs / Activists / Journalists	Nükleer karşıtı mücadele ve NKP, *in İsyanın ve Umudun Dip Dalgası, p104*
185	Nükleer, kömür ve doğalgaz santralleri kurmak için büyük paralar gerekiyor. Oysa elektrik ihtiyacınızı 25 yıl boyunca karşılayacak bir güneş panelini evinizin çatısına kurmak bugün 10-12 bin liraya mümkün.	Large amounts of money is needed to build nuclear, coal and natural gas power plants. However, it is possible to build a solar panel on your house roof that will meet your electricity need for 25 years, for 10-12 thousand liras today.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Enerjide üreten de biz olmalıyız Özgür Gürbüz-BirGün, 8 Haziran 2014 [Accessed 15.01.2017]
186	Eşi dostu bir araya getirip unuttuğumuz kooperatifleri hayata geçirerek bu enerji santrallerini birlikte kurmak. Büyük şirketlerin saltanatına son verip, hem elektriği istediğimiz kaynaktan üretebilir (dolayısıyla yönetebilir) hem de enerjide gerçek anlamda bağımsız olabiliriz	By uniting our friends, family, neighbours we can re-establish the long forgotten cooperatives and establish these energy plants together. That way we can put an end to the reign of the big companies, and we can produce (and manage) the electricity from whichever source we want and can thus become truly independent in terms of energy.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Enerjide üreten de biz olmalıyız Özgür Gürbüz-BirGün, 8 Haziran 2014 [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
187	Temiz enerji üretebilir, tüketebilir ve fazlasını satarak elde ettiğimiz gelirle yine halkın yararına başka projeleri hayata geçirebiliriz. Enerjide üretimi yenilenebilir enerjiyle yapmak yetmez, üretim araçlarının mülkiyetinin de çoğunluğun eline geçmesi gerekir	We can produce clean energy, consume it, and we can spend the money (we earn by selling the surplus energy) on other projects that will benefit people. It is not enough to produce energy through renewable energy sources, as the property of production means must be controlled by the majority (the public) too.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Enerjide üreten de biz olmalıyız Özgür Gürbüz-BirGün, 8 Haziran 2014 [Accessed 15.01.2017]
188	Mesele dev santraller kurmak değil; kalıcı, ayakları yere basan, kazancını halkın katılımı sayesinde halkla paylaşan bir sektör yaratmak olmalı.	The matter is not about building gigantic power plants; we must to create a sector that is permanent, stands on its feet, and shares its gain with the people through the participation of the people.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Hükümet programında çevre ve enerji Özgür Gürbüz-BirGün, 7 Eylül 2014 [Accessed 15.01.2017]
189	istenirse ekonomideki büyüme daha az enerji tüketimiyle gerçekleşebilir. Türkiye zaten enerjiyi kötü kullanan bir ülke. Verimlilikle aynı gelişmiş ülkelerin yaptığı gibi daha az elektrik tüketerek büyüme sağlanabilir. Türkiye'nin tüketimini klimaların zorladığı gerçeğini de unutmayalım. Ortada sanayi kaynaklı bir talep yok. O nedenle Çanakkale'yi kömür tozuna boğacak, tarımı bitirecek termik santraller plandan çıkarılmalı.	If desired, growth in the economy can be achieved with less energy consumption. Turkey is a country that manages energy badly. With efficiency, growth can be achieved by consuming less electricity, as in the case of some developed countries. Let's not forget the fact that the air conditioners are pushing Turkey's consumption up. There is no demand from industry. For that reason, designated thermal power plants in Çanakkale, which will end the agriculture, must be removed from the plan.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Çanakkale 100 bin parça Özgür Gürbüz-Birgün, 5 Ekim 2014 [Accessed 15.01.2017]
190	İstanbul Tabip Odası, Çevre İçin Hekimler Derneği ve Nükleer Savaşı Önlemek için Hekimler Birliği tarafından Türkiye'ye davet edilen Körblein'a İstanbul'daki sunumundan sonra şu soruyu sorduk: "Her yıl binlerce Alman turistin de geldiği Akdeniz'de kurulması düşünülen Akkuyu nükleer santralinin yanında denize girer misiniz, denizden çıkan balığı yer misiniz?". Körblein'ın yanıtı netti: "Ben yaşlı bir insanım, kanser konusunda çok fazla endişelenmem. Eğer küçük çocuklarım olsaydı, Türkiye'de ya da Almanya'da, çocuklarıma nükleer santralin yakınına gitmelerini öğütlemezdim. Elimizdeki bilgiler ışığında, torunlarımın nükleer reaktörün 5 km. yakınında yaşamalarını da istemezdim".	After his presentation in Istanbul, we asked Körblein, who was invited to Turkey by Istanbul Chamber of Medicine, Doctors for the Environment and Doctors for Preventing Nuclear War organizations: "Every year thousands of German tourists arrive in the Mediterranean, where the Akkuyu nuclear power plant is supposed to be built. Would you swim near the plant or would like to eat fish from the sea?". Körblein's answer was clear: "I am old, I do not care much for cancer. If I had small kids, I would advise them not to travel around the nuclear plants, be it in Turkey or in Germany. In the light of the information we have, I would not want my grandchildren to live in the 5km radius of a nuclear reactor".	Scientist1	Academics / Scientists / Experts	Özgür Gürbüz, Yaklaşanı Yakıyor! Yeni Aktüel / 25 Eylül - 1 Ekim2008 [Accessed 15.01.2017]
191	Türkiye enerji politikalarını ağırlıklı olarak geleneksel enerji kaynaklarına dayandırarak ülkenin enerji gereksinimini karşılamaya yönelmiş bulunmakta. Bunun anlamı gelecekte ekonomik maliyetleri büyütmek, asla geri ödenemeyecek çevresel riskleri ve çevrenin geri dönüşümsüz yıkımını arttırmaktır. Bunun yanında kömür ve nükleer enerji gibi en tehlikeli merkezi enerji kaynaklarına alım garantisi verilerek yatırımı özendirilmektedir. Nükleer santraller çevresinde yapılan araştırmalarda; santrallerin yılda 1 milyon kişide 600-1000 ölüme neden olduğu, bunların yüzde 80 gibi büyük çoğunluğunun çalışan işçiler olduğu ve çocukluk dönemi kanserlerinde artış olduğu saptanmıştır. Bu veriler ışığında öncelikle 24 Eylül'de yapılacağı açıklanan ihalenin iptal edilmesini istiyoruz. Türkiye çok zengin yenilenebilir enerji potansiyeline sahip ve enerji verimliliği açısından dünyanın önde gelen ülkelerinden biri	Turkey bases its energy policies on traditional energy sources and tries to meet the energy needs of the country. This means increasing the economic costs in the future, increasing the environmental risks that can never be undone and the irreversible destruction of the environment. In addition, investment is encouraged by giving purchase guarantee to the most dangerous central energy sources such as coal and nuclear energy. In research projects conducted around nuclear power plants, it is found that the plants cause 600-1000 deaths in 1 million people per year, 80% of them workers of the site, and there is increased risk of cancer in childhood. In the light of the data, we first want the cancellation of the tender announced on 24 September. Turkey has a very rich renewable energy potential and is one of the world's leading countries in terms of energy efficiency.	Scientist12	Academics / Scientists / Experts	Özgür Gürbüz, Yaklaşanı Yakıyor! Yeni Aktüel / 25 Eylül - 1 Ekim2008 [Accessed 15.01.2017]
192	Kaza ve sızıntı yapmasalar bile nükleer santrallerin yakın çevresinde yaşayanlarda kansere yakalanma riskinin daha yüksek olduğunu gösteren önemli çalışmalar var. Bunlardan belki de en bilineni, "KIKK Araştırması"	There are important studies showing that even without accidents and leakages, the risk of getting cancer is higher among people living in the vicinity of nuclear power plants. Perhaps the most well-known of these is the "KIKK Survey"	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Nükleer santraller ve lösemi / 9 Ekim 2014 - [Accessed 15.01.2017]
193	ÇED raporunda Mersin bölgesinin Antalya kadar turizm potansiyeline sahip olmadığına vurgu yapılmıştır. Mersin'de turizmi öncelik	The EIA report emphasizes that the Mersin region does not have as much tourism potential as Antalya. Tourists do not come to Mersin	AntiNukeNGO12	Anti-Nuclear NGOs /	İmzalar sahte rapor hikaye Özgür Gürbüz-BirGün, 18

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	yapmazsanız turist de gelmez. Örnek vermek gerekirse Çanakkale ile Mersin'i karşılaştırmak yerinde olur. Çanakkale'de mavi bayraklı plaj sayısı altı, Mersin'de dokuzdur. Buna rağmen Çanakkale'ye 440 bin, Mersin'e 280 bin turist gider. Mersin daha fazla mavi bayraklı plaja sahip olmasına rağmen Çanakkale'den daha az turist çekiyorsa bunun nedeni, turizm potansiyelinin olmaması değil, değerlendirilmemesidir.	if you do not prioritize tourism in the city. For example, let's compare Çanakkale and Mersin. The number of blue-flagged beaches is six in Çanakkale and nine in Mersin. However, 440 thousand tourists go to Çanakkale while only 280 thousand tourists go to Mersin. If Mersin can attract fewer tourists than Çanakkale despite having more blue flag beaches, the reason is not that it lacks tourism potential, but that the potential is not made good use of.		Activists / Journalists	Ocak 2015 [Accessed 15.01.2017]
194	ÇED raporunda pek çok soruya yanıt verilmediğini, verilen pek çok bilginin de yanıltıcı olduğunu uzmanlar tarafından defalarca anlatıldı, uyarılar ve itirazlar yapıldı ama Nükleer tehlikeyi başımıza musallat etmekte kararlı olan siyasi irade bunların hiç birisini dinlemedi.	The experts have repeatedly said that many questions were left answered in the EIA report and that much of the information presented was misleading. Warnings and objections were made repeatedly, but political will, determined to inflict a nuclear threat on us, did not heed any of them	AntiNukeNGO2	Anti-Nuclear NGOs / Activists / Journalists	Fukuşima çok uzak değil, Ali Arif Cangı, T24, 11.03.2015 [Accessed 15.01.2017]
195	Türkiye'nin elektrik üretmek için onlarca farklı, ucuz ve temiz seçeneğe sahip olduğunu herkes biliyor. Enerji Bakanlığı'nın kabul ettiği güneş enerjisi potansiyeli yılda 380 milyar kilovatsaati buluyor. Türkiye'nin mevcut elektrik ihtiyacının 260 milyar kilovatsaat olduğunu hatırlatalım. Güneş seçeneklerden sadece bir tanesi. DPT raporlarında enerji verimliliği ve tasarrufu potansiyelinin %20-25 arasında olduğu da açık açık yazıyor. Lafı uzatmadan söylersek, enerji verimliliği, rüzgar, jeotermal ve biyokütle gibi kaynaklar Türkiye'yi yaklaşan temiz enerji çağında çok avantajlı bir ülke yapabilir. Gelecekten bahsediyorsak, akıllı kentlerden, güneş enerjisinden, elektrikli araçlardan, verimli motorlardan bahsetmeliyiz. Geçmişin enerji kaynağında ısrar etmenin Türkiye'ye bir yararı yok. Nükleer enerji konusunda inatçı değil akılcı politikalara ihtiyaç var.	Everyone knows that Turkey has dozens of different, cheap and clean options for generating electricity. The potential for solar energy put forward by the Ministry of Energy is 380 billion kilowatts annually. Remember that Turkey's current electricity needs are 260 billion kWh. The sun is just one of the options. The State Planning Office reports clearly state that the energy efficiency and saving potential is between 20% and 25%. To cut a long story short, energy efficiency, wind, geothermal and biomass sources can make Turkey a very advantageous country in the upcoming clean energy era. If we are talking about the future, we should talk about intelligent cities, solar energy, electric vehicles, and efficient engines. It does not benefit Turkey to insist on using the energy source of the past. There is a need for rational (and not stubborn) politics about nuclear energy in Turkey.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Nükleer enerjinin geleceği karanlık, Özgür Gürbüz, 12.12.2016 [Accessed 15.01.2017]
196	Bugün Türkiye'de gün öncesi piyasada elektrik fiyatları kilovatsaat başına 4-5 dolar sent civarında. Hükümetin Rus şirkete verdiği alım garantisindeki fiyat ise 12,35 dolar sent. Nükleer santral yarın faaliyete geçse, devlete piyasa fiyatının 2,5 katına elektrik satacak. Hükümet bu kazığın hepsini, elektriğe zam yaparak millete yıkamayabilir. Hazine, Rusya ve bu üç şirketi zengin etme pahasına bu işe ne kadar göz yumabilir, o belli değil. Ekonomiden sorumlu yöneticiler, aynı elektriği bir rüzgar santralından neredeyse yarı fiyatına (7, 3 dolar sent) alabileceklerini biliyor. Dolar kurunun da farkında olmalılar. Nükleer anlaşma imzalandığında Merkez Bankası dolar kuru 1,52 TL'yi gösteriyordu; şimdi 3,40. Nükleer santral ortada yok ama satacağı elektriğe şimdidenyüzde 100'den fazla zamgeldi!	Today, electricity prices in the Turkish market are around $ 4-5 cents per kilowatt-hour. The government's purchase price guarantee for the Russian company is $ 12.35 cents. If the nuclear power plant goes into operation tomorrow, it will sell electricity to the state 2.5 times the market price. The government may not be able to raise electricity prices to make its citizens pay for this price gap. It is unclear to what extent the Treasury can condone making Russia and these three companies richer, at the expense of the citizens. Economically responsible managers know that the same electricity can be taken from a wind power plant for almost half the price ($ 7, 3 cents). They must be aware that the exchange rate of dollar has increased too. When the nuclear agreement was signed, the Central Bank showed the dollar rate at 1.52 TL; It's 3.40 now. Nuclear power plant has not even been built yet, but the electricity it sells has already become 100% more expensive!	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Akkuyu çıkmazı Özgür Gürbüz-BirGün/25 Kasım 2016 [Accessed 15.01.2017]
197	Solarbaba Platformu kurucusu Ateş Uğurel, yenilenebilir enerji kaynaklarının insanı doğa şartlarına bağımlı kıldığı argümanının doğru olmadığını söylüyor. Uğurel, "Güneş enerjisinden bahsedersek zaten tam ihtiyacın oldugu zaman (yazın-öğlen) elektrik üretip en yüksek talebe yanıt veriyor. Bu bir bağımlılık değil, faydalı bir durum.Elektrik depolama teknolojilerinin gelişimi ile birlikte 10 yıl içinde tüm rüzgar, güneş enerjisi santralları baz yük santral olacak, 7/24 elektrik üretecek" diyor. Güneş enerjisiyle ilgili çalışmalarıyla	Solarbaba Platform founder Ates Uğurel says that the argument that renewable energy resources make us dependent on nature conditions is not true. Uğurel says, " As for solar energy, the time of heaviest need [in the summer months-noon] coincides with the time period when the highest amount of energy is produced [when the weather is at its hottest], thus meeting the peak demand naturally. This is not dependence [on sun]; rather, it is making efficient use of it. With the development of electricity storage technologies, all the	Business1	Business Groups	Üniversitede 'nükleer propaganda' merkezi, 26.06.2016 [Accessed 15.01.2017]

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	tanınan Uğurel, "Doğayı mahvetmek yerine, doğa şartlarına bağımlı olmak ve ona uyumlu bir yaşam modeli oluşturmak çok daha güzel bir alternatif" yorumunu yapıyor.	wind, solar energy power plants will become base load power plants within 10 years, producing electricity 7/24". Uğurel, known for his work on solar energy, commented, "Instead of ruining nature, being dependent on natural conditions and creating a harmonious life model is a much better alternative."			
198	Nükleer karşıtları olmasaydı bugün Türkiye binlerce ton nükleer atığa bekçilik yapıyordu. Belki de büyük bir nükleer felaketin getirdiği yıkımın izlerini silmek için uğraşıyor olacaktık. Çernobil veya Fukuşima'da gördüklerimiz Mersin'de yaşanıyor olabilirdi. 800 bin kişinin bölgeden tahliye edildiğini, Türkiye'nin naranciye üretiminin büyük darbe aldığını ve Akdeniz'de turizmin bittiğini bir düşünün. Bir yıl gelmeyen turistin yarattığı sorunları görenler Akdeniz'i tamamen bitirecek nükleer santral saçmalığının farkına varmalı.	Without nuclear opponents today, Turkey would be guarding thousands of tons of nuclear waste. Perhaps we would be struggling to erase the traces of destruction brought on by a great nuclear disaster. What happened in Chernobyl or Fukushima may have happened in Mersin. Imagine that 800 thousand people were evacuated from the region, Turkey's citrus production suffered a great blow and tourism in the Mediterranean was finished. Those who see the problems caused by lack of tourists this year must realize the pitfalls of the nuclear power plant that will completely finish the Mediterranean.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Akkuyu 11 Temmuz'da nükleer karşıtlarını bekliyor, 24.06.2016, Birgün [Accessed 15.01.2017]
199	1. Gerçek talebi bulacağız. Enerji talebi diye elimize tutuşturulan rakamlar aslında gerçek talebi ya da ihtiyacı yansıtmıyor. Eğer enerji talebi yaşamı tehdit eder noktaya geldiyse yaşamın sürmesi için gerekli ihtiyaçlar dışındaki tüm üretim sürecini devreden çıkarabilmeliyiz. Bu, silah sanayini durdurmak gibi kökten bir hamle olabilir. Enerji sorununu böyle bir hamleyle ebediyen çözebilirsiniz. Evlerdeki ikinci televizyondan, fazla giysilerden ve hafta sonu uçakla gidilen yeme-içme turlarından vazgeçerek tüketimi azaltmak da bir başka yöntem.	1. We will find the real demand. The official energy demand does not really reflect the actual demand or need. If energy demand has come to the point of threatening life, then we must be able to overturn the entire production process, except for the necessities for survival. It could be a radical move, like stopping the weapons industry. You can solve the energy problem forever with such a move. Another way to reduce consumption is by giving up on the second televisions in the house, avoiding buying too many clothes and week-end airplane tours.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beş maddede enerji devrimine geçiş Özgür Gürbüz-BirGün/17 Haziran 2016 [Accessed 15.01.2017]
200	2. Yerele soracağız, halkın onayını alacağız. Halkın, enerji tüketmeme hakkını da kapsayan bir seçim özgürlüğü olmalı. Başta yereldekiler olmak üzere, halkın onayını almayan bir projenin hayata geçirilmemesi gerek. Bu itirazlar daha az enerji üretimine yol açarsa da sanayiden tüketiciye herkes elini taşın altına koymalı ve tüketimi azaltmak için gerekli adımlar atılmalı.	2. We will ask the locals, we will get the approval of the people. People must have freedom of choice, including the right to consume energy. A project that does not get the approval of the people, especially the local ones, should not be put to practice. Although these objections lead to less energy production, everyone should engage actively in the process and take necessary steps to reduce consumption.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beş maddede enerji devrimine geçiş Özgür Gürbüz-BirGün/17 Haziran 2016 [Accessed 15.01.2017]
201	3. Çevresel ve sosyal maliyetleri hesaplayacağız. Her yeni projede olduğu gibi enerjide de olası sosyal ve çevresel etkiler bağımsız kuruluşların da katılımıyla hesaplanmalı. Bir termik santralin maliyeti sadece inşaat ve yakıtından ibaret değil. O santralin yol açtığı hastalıkların tedavisi, yok ettiği tarım alanları ve üretim kaybı da değerlendirmeye alınmalı. Yaratacağı istihdam veya turizm üzerindeki olumsuz etki de karar sürecini etkilemeli.	3. We will calculate environmental and social costs.As with any new project, the potential social and environmental impacts of nuclear energy must be calculated with the involvement of independent organizations. The cost of a thermal power plant is not just about construction and fuel. The treatment of the diseases caused by that plant must be taken into consideration, along with the farmland destroyed and the loss of production. Negative impact on employment or tourism also has a negative impact the decision process.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beş maddede enerji devrimine geçiş Özgür Gürbüz-BirGün/17 Haziran 2016 [Accessed 15.01.2017]
202	4. Büyük santraller yerine küçük, yerinden yönetilen enerji santralleri kuracağız. Enerji üretimini küçük ve talebinin olduğu yerlere yayarsak, hem büyük şirketlerin eline geçen tekelleşmiş bir enerji sisteminin hem de çevreye verilen hasarın önüne geçebiliriz. Yerinde üretimle kayıplar önlenir ve bu küçük birlikler arasında başka bir ticaret ve sağlıklı ilişkiler başlar.	4. We will install small, locally managed power plants instead of large power plants. If we spread the energy production to places where it is small and there is high demand, we can prevent the large companies from monopolizing the energy system and stop the damage to the surrounding area. Losses will be prevented by on-the-spot production, and other trade and healthy relationships will begin among these small units.	AntiNukeNGO12	Anti-Nuclear NGOs / Activists / Journalists	Beş maddede enerji devrimine geçiş Özgür Gürbüz-BirGün/17 Haziran 2016 [Accessed 15.01.2017]
203	5. Tüketen bizsek üreten de biz olacağız! Son ama işin olmazsa olmazı da bu. Yerelde üretimi birlikte gerçekleştirmek. Enerji,	5. We will be the consumers and we will be the producers! It is a necessity for us to produce our energy together, locally. Energy,	AntiNukeNGO12	Anti-Nuclear NGOs /	Beş maddede enerji devrimine geçiş

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	özellikle de elektrik üretimi, halkın bir araya gelerek kurduğu enerji kooperatifleriyle, çatısına veya bahçesine kurduğu güneş panelleriyle, köylerdeki biyogaz tesisleri ve çiftçilerin tarlalarındaki rüzgar türbinleriyle yapılmalı. Karar verici halkın kendisi olursa, şikayet ettiği bir çok soruna yol açmayan en uygun seçenekleri tercih eder. Merkezi idarenin, sermaye sahiplerinin dayatmalarından kurtulur. Enerji bir rant alanı olmaktan çıkar, gerçek ihtiyacı karşılamaya yönelir.	especially electricity, must be generated by solar farms built by people in energy cooperatives, roofs or huts, with biogas plants in the villages and wind turbines on the farmers' fields. If people act as their own decision makers, then instead of complaining about wrong policies, they will choose the most appropriate options that do not lead to problems. They will get rid of the central government's and capital owners' impositions. Then energy will stop being a rent domain, and start to meet the real need.		Activists / Journalists	Özgür Gürbüz-BirGün/17 Haziran 2016 [Accessed 15.01.2017]
204	Nükleer enerji sera etkisine yol açmaz: Nükleer enerji, fosil kaynaklı enerji üretiminde olduğu gibi sera gazı salımına neden olmamaktadır. Bu nedenle nükleer enerji, küresel ısınma ve iklim değişikliğine yol açan karbondioksit emsiyonunu azaltmak açısından önemli bir seçenektir.	Nuclear energy does not cause greenhouse effect: unlike fossil-based energy production, nuclear energy does not lead to greenhouse gas emissions. For this reason, nuclear energy is an important option in terms of reducing carbon dioxide emissions leading to global warming and climate change.	Govn2	Governmental Agency	TAEK, Nükleer enerji ve çevre, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
205	Nükleer enerji asit yağmurlarına neden olmaz: Nükleer enerji (…) kükürtdioksit ve azotoksit salımlarının azaltılmasında da etkin bir rol oynamaktadır.	Nuclear energy does not cause acid rain: (it) plays an active role in the reduction of sulphur dioxide and nitrogen oxide emissions	Govn2	Governmental Agency	TAEK, Nükleer enerji ve çevre, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
206	Nükleer enerji geniş alan kullanımı gerektirmez: Hidrolik, güneş ve rüzgar enerjisi gibi geniş alanlara gereksinim duyan enerji kaynakları, ya büyük orman alanlarının yok edilmesi, ya da verimli toprakların kaybolması ve burada yaşayan halkın yer değiştirmesi gibi bazı çevresel ve sosyal sorunlara yol açabilmektedir.	Nuclear energy does not require a large area for production: Energy resources that require large areas such as hydropower, solar and wind energy can lead to some environmental and social problems, such as the destruction of large forest areas, or the loss of fertile land and the displacement of the people living there.	Govn2	Governmental Agency	TAEK, Nükleer enerji ve çevre, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
207	Nükleer enerji üretimi daha az miktarda yakıt gerektirir. Nükleer enerji, enerji yoğun bir seçenektir. Enerji yoğunluğu ne kadar yüksek olursa o kadar az akıt tüketilmesi gerektiğinden; çıkarılacak ve taşınacak hammadde miktarı, dolayısıyla da atık miktarı o ölçüde az olacaktır.	Nuclear power generation requires less fuel. Nuclear energy is an energy-intensive option. The higher the energy density, the less energy must be consumed. Thus less raw materials will be removed and transported, and the amount of waste will be proportionately less.	Govn2	Governmental Agency	TAEK, Nükleer enerji ve çevre, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
208	Nükleer enerji üretiminde ortaya çıkan artıklar güvenli bir şekilde depolanabilmektedir.	Residues from nuclear energy production can be safely stored.	Govn2	Governmental Agency	TAEK, Nükleer enerji ve çevre, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
209	Nükleer santrallerden alınan yapay radyasyon, doğal radyasyona göre çok düşük seviyede kalmaktadır.	Artificial radiation from nuclear power plants is very low compared to natural radiation.	Govn2	Governmental Agency	TAEK, Nükleer enerji ve çevre, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
210	Nükleer santrallerin çevreye ve insana zarar verebilecek şekilde kaza yapma riski, günümüzde kullandığımız diğer teknolojik ürün ve süreçlere göre yok denecek kadar azdır.	The risk of nuclear power plants to cause accidents in a way that could harm the environment and human beings is insignificant compared to other technological products and processes we use today.	Govn2	Governmental Agency	TAEK, Nükleer enerji ve çevre, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
211	Nükleer enerji, enerji temininde dışa bağımlılığımızı azaltacaktır.	Nuclear energy will reduce our dependence on external sources of energy.	Govn2	Governmental Agency	TAEK, Nükleer teknolojinin ülkemize kazandıracakları, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
212	(Nükleer enerji) Enerji kaynaklarının çeşitlendirilmesine katkıda bulunacaktır.	(Nuclear energy) will contribute to the diversification of energy resources.	Govn2	Governmental Agency	TAEK, Nükleer teknolojinin ülkemize kazandıracakları, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
213	(Nükleer enerji ile) elektrik enerjisi üretim maliyetlerinde istikrar sağlanacaktır.	(With nuclear energy) electric energy production costs will be stabilized.	Govn2	Governmental Agency	TAEK, Nükleer teknolojinin ülkemize kazandıracakları, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
214	(Nükleer enerji ile) güvenilir baz-yükü enerjisi sağlanacaktır.	Reliable base-load energy will be provided (with nuclear energy).	Govn2	Governmental Agency	TAEK, Nükleer teknolojinin ülkemize kazandıracakları, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
215	Nükleer enerji, küresel ısınmaya yol açıp iklim değişikliğine neden olan CO2 salımının azaltılmasına katkıda bulunacaktır.	Nuclear energy will contribute to the reduction of CO2 emissions that cause global warming and climate change.	Govn2	Governmental Agency	TAEK, Nükleer teknolojinin ülkemize kazandıracakları, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
216	Nükleer enerji üretimi amacıyla kurulacak olan tesisler, ülkemizdeki bilim ve teknoloji altyapısının gelişmesine önemli katkılarda bulunacaktır.	The facilities to be established for nuclear energy production will make important contributions to the development of science and technology infrastructure in our country.	Govn2	Governmental Agency	TAEK, Nükleer teknolojinin ülkemize kazandıracakları, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
217	Kalite güvencesi kavramı, kalite kontrolü ve denetimi anlayışının ülkemizde yerleşip yaygınlaşmasını hızlandıracaktır.	The concept of quality assurance will improve the understanding and expansion of quality control in our country.	Govn2	Governmental Agency	TAEK, Nükleer teknolojinin ülkemize kazandıracakları, Halkı bilgilendirme broşürleri, 2008-001 [Accessed 15.01.2017]
218	"Tüm dünyanın yenilenebilir ve temiz enerji teknolojilerine geçip, enerji verimliliğinde ciddi ilerleme kaydetmeleri gerekiyor. Kömür konusunda çok olumsuz görüş bildiren IPCC, yüzde 50 daha az sera gazı salan doğal gazı ise 'geçiş dönemi' alternatifi olarak görmekte" diyen Prof. Dr. Karakaya, yenilenebilir enerji potansiyelinden azami derecede faydalanmak gerektiğini, ancak rüzgar, güneş, biyokütle ve su kaynakları gibi alternatiflerin de artan enerji talebini karşılamada yeterli olamayacağının altını çizdi. "Tüm bunlara ilave olarak nükleer enerji seçeneği de var. Son IPCC Raporu ilk defa nükleer enerji seçeneğini de çözüm açısından belirtmiştir. Bilindiği gibi nükleer enerjide sera gazı emisyonu neredeyse sıfır. Ülkemizde de bu konuda kapasitenin artırılması ve neler yapılabileceğinin tartışılması şart.	"The whole world needs to shift to renewable and clean energy technologies and make significant progress in energy efficiency. IPCC, which has a very negative opinion on coal, sees natural gas that gives 50 percent less greenhouse gas as a 'transition period' alternative. "emphasizes Dr. Karakaya and adds that renewable energy sources need to be utilized at the maximum level, but alternatives such as wind, solar, biomass and water sources cannot be sufficient in meeting the rising energy demand. "In addition to all of this, there is also the option of nuclear energy. For the first time, the latest IPCC Report has indicated the nuclear option as a solution. As is known, greenhouse gas emissions in nuclear power are almost zero. In our country it is also necessary to discuss how to increase the capacity and what can be done in this regard.	Scientist11	Academics / Scientists / Experts	Akkuyu NPP web page, 17.04.2014 Dünyanın ateşi yükseliyor [Accessed 15.01.2017]
219	Nükleer santral yapılırsa veya gelirse turizm bitecek deniliyor. Biz bu işe akli selim turizmciler olarak inanmıyoruz. Mersin'le ilgili olan Novovoronej Nükleer Santrali'ni ben yakinen de gördüm. Yani daha da inceledim merak konusu da oldu. Ancak yapıldığı yerde bizim için nükleer santral isminin ürkütücülüğünün dışında olumsuz hiçbir şey yoktu. Bu ziyaretten sonra Mersin'de turizm bitecek iddiasına net cevabı olarak katılmadığımızı söyleyebilirim. Ben bilgisizlikten korkarım. Novovoronej'de ki bu iki santrali bizzat yerinde inceledim. Tabi heyetlerle gittik, çok değişik yerlerden farklı bilgileri aldık. Neticede ortaya konan şey bundan 10 sene sonra devreye girecek olacak bir projeden bahsediyoruz. Ama ortaya konan şey veya	They say that if a nuclear plant is built, it will end tourism here. We do not really agree with this argument as the conscious people working in the sector. I also saw the Novovoronej Nuclear Power Plant. There was nothing negative except for the fact that this structure is called a nuclear plant. After this visit, I can clearly say that we do not think there will be a decline in tourism in Mersin. I fear ignorance. I studied these two plants in Novovoronej in person. Of course we went there with delegations, we got different bits of information from different places. After all, what we are talking about is a project that will come into effect 10 years from now. But the security measures that have been put forward have satisfied me.	LocalResident18	Local residents	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri

ArgID	Argument	Translation	Who	Role	Source
	bunlarla ilgili olarak geliştirilmiş olan güvenlik tedbirleri beni tatmin etti. Çevrecilik de dediğim gibi turizmin ana mayasıdır. Çevrecilik açısından da nükleerden korkmuyor ve endişe duymuyorum.	As I said, environmentalism is the main component of tourism. In terms of environmentalism, I am not afraid of nuclear.			
220	Bugün Kanada dünyada en fazla nükleer santral bulunduran ülke. Fransa enerjinin 75%'ini ngs'den elde ediyor. Bugün Fransa'nın gelişmişliği malum yine İsviçre Danimarka baktığımız zaman enerjilerinin birçoğunu nükleer santralden elde ediyor. Birçok nükleer güç santraline bakıldığında turizm merkezlerinin içinde olduğunu görüyoruz, sahillere girildiğini, marinaların hemen yanı başında olduğunu görüyoruz. Doğru yatırımla, kontrollü inşa ile hiçbir sorun olacağını biz şahsen düşünmüyoruz. Nükleer enerjiyi destekliyoruz.	Today Canada is the country with the most nuclear power plants in the world. France gets 75% of its energy from NGS and it is undeniable that they are a highly-developed country. Again Switzerland, Denmark, obtain their energy from the nuclear plants. When we look at many nuclear power plants, we see that they are in tourist centers, we see that they are near the beaches, and they are right beside the marinas. With the right investment, we do not personally think there will be any problems with controlled construction. We support nuclear energy.	Business10	Business Groups	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri
221	Türkiye'de Mersin'in nükleer santral için yer seçimi konusunda belki insanlar çok mutlu değiller ama şimdi yer lisansı alınmış bir hayli yatırım yapılmış, liman yapılmış onun için şu anda başka bir yer kaydırılması Türkiye'nin bu teknolojiye belki 15 yıl daha geri kalmasına yol açabilir. Bu da doğru bir adım olmaz.	Perhaps people are not very happy about the location of Mersin's nuclear power plant in Turkey, but now a lot of investments have been made, the site permit has been obtained, and the port has been constructed. Changing the place of the nuclear plant may cause Turkey to lag behind this technology for maybe 15 year. This would not be the right step.	Scientist20	Academics / Scientists / Experts	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri
222	Doğalgazın ülkemizin enerji üretim talebini karşılamasındaki oranı yüzde 44'ler civarında. Dünya ortalamasında aslında dünya enerji talebini %20'ler civarında karşılıyor. Türkiye'nin ortalaması dünya ortalamasının iki katı. Dolayısıyla doğalgazı aşırı bağımlılığımız söz konusu. Aslında nükleerin bize faydası burada olacaktır. Akkuyu ve Sinop bugün devreye girmiş olsaydı biz yurt dışından yaklaşık olarak 7,2 milyar dolar doğalgaz ithal etmekten kurtulmuş olacaktık. Diğer bir husus yenilenebilir enerji kaynakları. Neden yenilenebilir enerji kaynaklarını kullanmıyoruz şeklinde eleştiriler geliyor? Yenilebilir enerji kaynaklarına girmişken, vurgulamamız gereken bir başka husus şudur; Kapasite faktörü oldukça düşük. Yenilenebilir enerji kaynakları baz yük santralleri olmadığı için, ancak alternatif enerji kaynakları olabilir. Bir de yenilebilir enerji kaynakları gereklidir son damlasına kadar kullanılmalıdır ancak bel bağlanamayacak enerji kaynaklarıdır.	Natural gas accounts for 44 percent of our country's demand for energy production. The world average of natural gas within total energy demand is 20%. Turkey's average is twice the world average. So we are over-dependent on natural gas. In fact, nuclear will benefit us at this point. If Akkuyu and Sinop were in operation today, they would save us from importing 7.2 billion dollar worth natural gas from abroad. Another issue is renewable energy sources. Critics ask why we do not make use of renewable energy sources. One point worth noting is that its capacity factor is very low. Since renewable energy resources are not base load plants, they can only serve as alternative power resources. In addition, renewable energy sources should be used with utmost efficiency, but they are energy sources that cannot be fully relied on since they are contingent.	Govn3	Governmental Agency	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri
223	Türkiye, nükleer enerji çalışmalarını tamamladığında ülkemizde kişi başına düşen gelir artacaktır. Nükleer, kalkınmayı hızlandıran ve ülkenin her şeyini değiştiren bir teknoloji, tarih bize bunu ispatlamıştır. Bunu görmezden gelemeyiz. Nanoteknolojinin, tomografi gibi görüntüleme metotlarının hepsinin çıktığı yer, nükleer teknoloji. Bazen millet yanlış yönlendiriliyor ve nükleere karşı çıkan çok oluyor. Bunlara karşı bilinçli olmak lazım. Küçüğün büyümesi, büyüğün işine gelmiyor. Bakarsak, dünyadaki 438 reaktörün 272'si sanayileşmiş 6 ülkededir. Her gelişmiş ülkede var, gelişmemiş ülkelerde ise yok.	When Turkey completes its nuclear energy studies, per capita income will increase in our country. History has proven to us that nuclear is a technology that accelerates development and changes everything in the country. We just cannot overlook this. The starting point of nanotechnology and the emergence of all monitoring methods such as tomography is nuclear technology. Sometimes people are misguided and there is a lot of opposition to the nuclear. We need to be conscious of these. Developed countries do not really want the developing countries to develop as much as them. Look, 272 of the world's 438 reactors are in 6 industrialized countries. All the developed countries have them, and the underdeveloped ones do not.	Scientist16	Academics / Scientists / Experts	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri
224	Hükümetin bağımlılığı azaltmak adına çok önem verdiği bir çalışma olan nükleer enerjinin, özellikle doğalgazdaki dışa bağımlılığı azaltacağına dikkati çeken Bahçıvan, "Fakat bu noktada da nükleer yakıt konusunda çok ciddi bir bağımlılık yaratılmamasına ve atık	Bahçıvan notes that nuclear energy, which the government hopes will reduce foreign dependence, will particularly reduce foreign dependence on natural gas. He adds, "But we must be careful so that there is not a very serious dependence on nuclear fuel and	Business2	Business Groups	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri

ArgID	Argument	Translation	Who	Role	Source
	yönetimi konusuna özen göstermeliyiz. Enerjiye yönelik makine ve ekipmanların ülkemizde üretimi yani bir enerji endüstrisi oluşturma konusunda ciddi eksikliklerimiz mevcut	waste management at this point. We have serious shortcomings in the production of energy machinery and equipment in our country.			
225	Kurulacak nükleer enerji santrallerinde kullanılacak yerli ürünlerin Türkiye için çok ciddi fırsatlar içerdiğine değinen Bahçıvan, şunları kaydetti: "Devletin bu tür büyük yatırımları, teknolojik bir sanayi gücü oluşturmaya katkı yapacaktır. Güney Kore'nin bundan 20 yıl önce sadece yüzde 2'lik bir payla başladığı nükleer enerji yolculuğunun bugün gelmiş olduğu nokta bize örnek olmalıdır. Örneğin, Akkuyu'da kurulacak ve maliyeti 20 milyar dolar olacak olan ilk nükleer santralimizde, Hükümetimizin hesaplarına göre yerli sanayimize, inşaat firmalarına ve diğer birçok sektöre yönelik 7-8 milyar dolarlık bir yatırım imkanı doğacaktır. Enerji alanında son 30 yıldır özel sektörün ciddi yatırımları oldu. Bunun en önemli sebebi elektrik üretimine yönelik cezbedici teşviklerin uygulanmasıydı. Sanayinin imalat süreci içerisinde doğalgaz ve elektriğin kesintisiz, kaliteli ve uygun maliyetli olarak temini rekabet gücü açısından büyük önem taşıyor."	Referring to the fact that the domestic products to be used in the nuclear power plants offer opportunities for Turkey, Bahçıvan noted: "Such large investments by the state will contribute to creating a technological industry power. The point that South Korea has come from 2% share of nuclear to now within 20 years should set an example to us. For example, according to the calculations of the government, our first nuclear power plant, which will be built in Akkuyu and cost 20 billion dollars, will offer 7-8 billion dollar worth investment opportunity to our domestic industry, construction companies and many other sectors. In the field of energy, private sector has made investments in the last 30 years. What enabled this was the promotion of generous incentives for electricity generation. In the industrial manufacturing process, it is very important to supply natural gas and electricity uninterruptedly, in good quality and at reasonable cost so that the companies can have a competitive edge."	Business2	Business Groups	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri
226	Her yedi yılda bir Türkiye'nin enerji tüketimi ikiye katlanıyor. Türkiye'nin enerji ihtiyacı var çünkü sanayileşiyor. Avrupa'nın neden yok? Çünkü sanayileşmiş. Yıllık ortalama 3 bin 500 MW kapasitesinde santral yapmamız lazım. Buna rüzgâr ve güneşi dahil etmiyoruz. Onlar zaten yapılsın, Güneş ve rüzgâr tartışmalarına kızıyorum. Bunlar tartışılmadan yapılması gerekenler. 8.2 milyar dolarlık doğalgazdan elde ettiğiniz elektriğin aynısını nükleer santralden elde etseniz 400 milyon dolar gidiyor. Doğalgaz fiyatının kaya gazından dolayı düşeceği konusunda kuvvetli bir delil göremiyoruz. Herkes İran, Rusya ve Azerbaycan'ın kucağına oturmuş durumda. Bugün amortisman hariç nükleerdeki elektriğin maliyeti 1 sent. Üzerine 7 sent daha koyarsanız amortismanlı maliyeti ortaya çıkar. Ülkeler doğalgazdan dolayı taciz olmuş durumdalar. Göreceksiniz Almanya da dönecek. Hiçbirinin kurtuluşu yok. Türkiye ucuz elektriği nasıl elde edecek de verecek?. Dış ticaret açığı işte ortada. Enerji fiyatlarının düşmesi konusunda da ihtiyatlı yaklaşmak lazım. Dogalgaz fiyatları yarıya inse bile nükleerin yarısına yaklaşamaz. Nükleerde çok geç kaldık. Nükleerin ekonomik, sosyal, uluslararası boyutunda onlarca parametre var; Türkiye'nin sanayide atlayacağı son basamak.	Every seven years, Turkey's energy consumption doubles. Turkey needs energy because it is becoming industrialized. Why does Europe not need it? Because it's industrialized. We need to build a power plant with an average annual capacity of 3,500 MW. We do not include the wind and the sun powers in it. I am angry at the fact that people offer the wind and solar plants as opposed to nuclear. All sorts of energy plants should be constructed without so much debate. If you get the same electricity from the $ 8.2 billion natural gas from the nuclear power plant, you would only pay $ 400 million. We do not see strong evidence that natural gas prices will fall due to rock gas. Everyone is now depending heavily on Iran, Russia and Azerbaijan. Today the cost of nuclear electricity is 1 cent, except for depreciation. If you add another 7 cents to it, you will have the cost with the depreciation rate. Countries are harassed by natural gas. You will see Germany will also come back to it. No country can escape it. How will Turkey get cheap electricity and export it? Foreign trade deficit is obvious. We also need to be cautious about reducing energy prices. Even if natural gas prices fall in half, they still will not be the half of the price of nuclear. We are too late in nuclear. There are dozens of parameters in the economic, social, international dimension of nuclear. This is the last leap that Turkey will make in terms of industrialisation.	ProNukeNGO1	Pro-Nuclear NGOs	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri
227	Yenilenebilir enerji santralları baz yüklü değil, sürekli elektrik elde edemiyorsunuz. Yerel kaynaklarımızın yeterli olduğunu savunamayız. Doğalgaz fiyatları ise çok istikrarsız ve çok yüksek, bu nedenle güvenilir veya sürekli kullanılabilir bir enerji kaynağı olarak düşünülmemeli. Nükleer enerji gerekli gibi gözüküyor.	Renewable power plants are not base load, you cannot get electricity continuously. We cannot claim that our local resources are sufficient. Natural gas prices, on the other hand, are very unstable and very high, so natural gas should not be considered a reliable or permanently usable energy source. Nuclear energy seems to be necessary.	Scientist2	Academics / Scientists / Experts	Akkuyu NPP web page, [Accessed 15.01.2017] Uzman Görüşleri
228	TEMA Vakfı olarak Mersin Akkuyu'da yapılmak istenen nükleer santral konusunda hukuki mücadelemiz devam ederken, bu hatalı	As TEMA Foundation, we continue to warn the authorities against giving up this erroneous decision while continuing our legal struggle	AntiNukeNGO13	Anti-Nuclear NGOs /	TEMA Vakfı'ndan Kamuoyuna Çağrı-2012

ArgID	Argument	Translation	Who	Role	Source
	karardan vazgeçmeleri için yetkilileri bir kez daha uyarıyoruz. Ülkemizin geleceğinin nükleerle ipotek altına alınmamasını, enerji bağımsızlığı ve yeterliliğine giden yolun yenilenebilir ve yerel enerjiden, enerji verimliliğinden geçtiğini hatırlatıyoruz.	about the nuclear power plant in Mersin Akkuyu. We remind our country that the future of our country is not under nuclear mortgage, that the path to energy independence and sufficiency is renewable and local energy, and energy efficiency.		Activists / Journalists	[Accessed 15.01.2017]
229	Fukuşima Felaketi, nükleerin "pahalı, kirli ve tehlikeli" olduğunu bir kez daha kanıtladı. Bu güçlü kanıtın bedeli -ne yazık ki- ekosistemlerin çökmesi, nesiller boyunca onbinlerce insanın kanserle, çeşitli hastalıklarla ve sürekli bir ölüm riskiyle başbaşa yaşaması, yüz milyarlarca dolarlık bir ekonomik kayıp oldu	Fukushima Disaster proved once again that nuclear is "expensive, dirty and dangerous". The cost of this powerful evidence- unfortunately- is the collapse of ecosystems, tens of thousands of people throughout the generations living with cancer, various diseases and constant risk of death, and economic loss of hundreds of billions of dollars.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı'ndan Kamuoyuna Çağrı-2012 [Accessed 15.01.2017]
230	Akkuyu'da yapılmak istenen nükleer enerji santrali hem bölge ekosisteminin yapısı ve kırılgan biyolojik çeşitliliği, hem de sürecin Türkiye'nin de imzacısı olduğu bir çok uluslar arası anlaşmaya aykırı olması sebebiyle çok geç olunmadan vazgeçilmesi gereken son derece vahim bir yanlıştır.	The nuclear power plant to be built in Akkuyu is a grave mistake that must be abandoned before it is too late because it is contrary to the structure of the regional ecosystem and fragile biodiversity as well as many international agreements to which Turkey is also a signatory.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Sıkça Sorulan Sorular, TEMA Vakfı nükleer enerji santralleri hakkında ne diyor, ne yapıyor? [Accessed 15.01.2017]
231	TEMA Vakfı nükleer enerji santrallerin yapımına tamamen karşıdır. Vakfın nükleer enerji santrallerine karşı olmasının temel sebebi nükleerin "pahalı, kirli ve tehlikeli" olmasıdır.	The TEMA Foundation is entirely against the construction of nuclear power plants. The main reason why the foundation is against nuclear power plants is that nuclear is "expensive, dirty and dangerous".	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Sıkça Sorulan Sorular, TEMA Vakfı nükleer enerji santralleri hakkında ne diyor, ne yapıyor? [Accessed 15.01.2017]
232	"Nükleer Enerji Doğaya ve Yaşama Düşman!" Nükleer Santraller, herhangi bir kaza yaşanmaması durumunda bile toprak varlıkları kaybı, soğutma sularının deniz, akarsu ve göl habitatlarını olumsuz etkilemesi gibi çevresel tahribatlarla doğaya ve yaşama zarar verir. Japonya Fukişima'da 11 Mart 2011'de başlayan ve hala devam eden nükleer santral felaketinin 'ne denli büyük bir tahribata neden olduğu' açıkça görüldü.	"Nuclear Energy Enemy to Nature and Life!" Nuclear Power Plants damage nature and life with problems such as the loss of land assets even in the case of no accident, cooling waters adversely affecting seas, rivers and lake habitats. Japan saw what a major disruption the nuclear plant disaster caused after the Fukushima accident that started on 11 March 2011 and is still ongoing.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı'ndan Akkuyu Santraline Dava: "Nükleer Pahalı, Kirli ve Tehlikeli!" [Accessed 15.01.2017]
233	Nükleer enerji santralleri daha yapım aşamasında neden oldukları yüksek karbon salım miktarlarıyla iklim değişikliğini hızlandırıcı rol oynamaktadır. Üstelik, nükleer atıkların 'güvenli bir şekilde nasıl ve nerede depolanabileceği konusu bugünün teknolojisiyle bile çözülememiş son derece tehlikeli bir sorun' olarak varlığını devam ettirmektedir.	Nuclear power plants play a role in accelerating climate change with the high carbon emission amounts they cause during the construction phase. Moreover, nuclear waste continues to exist as a 'highly dangerous problem' that cannot be solved even by today's technology, as we still do not know how and where nuclear waste can be safely stored.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı'ndan Akkuyu Santraline Dava: "Nükleer Pahalı, Kirli ve Tehlikeli!" [Accessed 15.01.2017]
234	Nükleer gibi eski moda ve yenilenemez bir enerji kaynağı 'geleceğin teknolojisi' olarak gösterilmeye çalışılıyor. Oysa Nükleer enerjinin 'iddia edildiği gibi ucuz ve güvenli olmadığı' Japonya Fukişima'da yaşanan felaketle örtbas edilemeyecek şekilde ispatlandı. Almanya 2022, İsviçre ise 2034'e kadar ülkelerindeki tüm nükleer santralleri kapatma kararı alırken İtalya halkı da referandumda nükleere 'Hayır!' dedi. Hatta dünyanın önemli nükleer santral üretici firmalarından biri çok yüksek ekonomik zararları da göze alarak bu alanı terk ettiğini açıkladı.	An old fashioned and non-renewable energy source such as nuclear is marketed as 'your future technology'. However, it was proven without a doubt that nuclear energy is not as cheap and safe as claimed after the Fukushima disaster in Japan. Germany will phase out all nuclear power plants by 2022, and Switzerland until 2034, and the Italians voted "No" in the referendum about whether to shut down the nuclear plants or not. In fact, one of the world's major nuclear power plant producers has announced that they have abandoned this business field, taking very high economic risks.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı'ndan Akkuyu Santraline Dava: "Nükleer Pahalı, Kirli ve Tehlikeli!" [Accessed 15.01.2017]
235	Nükleer santral yapılmak istenen Mersin Akkuyu, Aydıncık ve Ovacık Kıyıları Önemli Doğa Alanları sınırları içindedir. Bu nedenle bölgedeki ekosistem son derece kırılgandır ve burada yaşayan bir çok türün nesli tehlike altındadır.	Mersin Akkuyu, Aydıncık and Ovacık coasts where nuclear power plant is desired are within the boundaries of Important Nature Areas. For this reason, the ecosystem in the region is extremely fragile and many species living here are endangered.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı'ndan Akkuyu Santraline Dava: "Nükleer Pahalı, Kirli ve Tehlikeli!" [Accessed 15.01.2017]
236	Bakanlar Kurulu tarafından 27.08.2010 tarihinde onaylanan	Akkuyu Nuclear Power Plant is being exempted from the control of	AntiNukeNGO13	Anti-Nuclear	TEMA Vakfı'ndan Akkuyu

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	uluslararası sözleşme ile Akkuyu Nükleer santrali iç hukukun denetiminden çıkarılmaktadır. Anayasa 90. madde/son gereği ve en geniş (üçüncü kuşak haklar dahil) yorumu ile temel insan hak ve özgürlükleri ile ilgili hukuk, uygulanması gereken öncelikli hukuktur. Ayrıca Anayasanın 13. maddesinde "Temel hak ve hürriyetlere yönelik kısıtlamaların ancak kanunla ve Anayasanın özüne ve ruhuna aykırı olmadan yapılabileceği" hükme bağlanmaktadır. Yine Anayasanın 11. Maddesinde "Anayasanın üstünlüğü", 138/1. maddesinde de "Yargı kararlarının Anayasaya göre verileceği" hükme bağlanmıştır. Bu nedenlerle, Akkuyu NGS Anlaşması gerek Anayasa'da yazılı, gerekse Türkiye'nin imzaladığı uluslararası anlaşmalarla kazanılmış temel hak ve özgürlüklere yönelik bir kısıtlama ve tecavüz oluşturmaktadır.	the domestic law by the international agreement approved by the Council of Ministers on 27.08.2010. Article 90 of the Constitution, with the broadest interpretation (including third-generation rights) and the law on fundamental human rights and freedoms are the priority laws that must be applied. In addition, article 13 of the Constitution states that "restrictions on fundamental rights and freedoms shall be enforced only by law and without prejudice to the essence and spirit of the Constitution". Again in Article 11 of the Constitution, "Supremacy of Constitution", 138/1. "Judicial decisions shall be made according to the Constitution" are ruled. For these reasons, Akkuyu NGS Agreement constitutes a restriction and violation against the basic rights and freedoms that are protected by the Constitution and set forth by international agreements signed by Turkey.		NGOs / Activists / Journalists	Santraline Dava: "Nükleer Pahalı, Kirli ve Tehlikeli!" [Accessed 15.01.2017]
237	Ülkemizin enerji ihtiyacının artmakta olduğu tespiti ne kadar yerindeyse, bu ihtiyacın nükleer enerji santralleri yoluyla karşılanmak istenmesi de o kadar hatalı bir politikadır. TEMA Vakfı olarak bu sorunun çözümünün "yenilenebilir enerji ve enerji verimliliği" olduğunu savunmaya devam etmekteyiz. Hali hazırda ürettiğimiz enerjiyi verimli kullanmak, ulaşım, tarım, sanayi ve benzeri politikalarımızı "enerji dostu" hale getirmek ve yenilenebilir enerji yatırımlarını desteklemek bu anlamda atılması gereken ilk adımlardır.	While the fact that our country is increasingly in need of energy it true, the policy to meet this need through nuclear power plants quite wrong. As the TEMA Foundation, we continue to argue that the solution to this problem is "renewable energy and energy efficiency". Using the energy efficiently, making transportation, agriculture, industry and similar policies energy friendly and supporting renewable energy are the first steps that should be taken towards this aim.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı'ndan Akkuyu Santraline Dava: "Nükleer Pahalı, Kirli ve Tehlikeli!" [Accessed 15.01.2017]
238	TEMA Vakfı olarak nükleer enerjiye karşıyız ve Greenpeace Akdeniz'in nükleer karşıtı kampanyasına destek veriyoruz. Ülkemizin enerjide önceliğinin verimlilik ve temiz enerji olduğuna inanıyoruz. Büyük yatırımlar yapılırken İnsanı ve ekosistemi ayrı düşünen anlayıştan vazgeçilmeli, tüm canlıların yaşam hakkı gözetilmelidir	As TEMA Foundation, we are against nuclear energy and we support the anti-nuclear campaign of the Greenpeace Mediterranean. We believe that our country's energy priority should be energy efficiency and clean energy. When large investments are conducted, the viewpoint that considers humanity and ecosystems as separate must be abandoned, and the right to life of all living beings should be respected.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Akdeniz ve TEMA Vakfı, Nükleer Enerjiye Birlikte "Hayır !" Dedi. | Arşiv [Accessed 15.01.2017]
239	TEMA Vakfı, Akkuyu nükleer santralinde VVER1200 modeli reaktörün kullanılacağına dikkat çekerek, bu durumun ÇED raporundaki önemli ölçütlerden birisi olan'sınanmışlık'maddesini ihlal ettiğini vurguladı.	TEMA Foundation pointed out the plans of using the VVER1200 model reactor in Akkuyu nuclear power plant and emphasized that this condition violates the 'precedence' clause, which is one of the most important criteria in the EIA report.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	Akkuyu Nükleer Santrali'nin ÇED Raporu Sınıfta Kaldı - 02 Ekim 2013 [Accessed 15.01.2017]
240	Akkuyu'ya kurulacak nükleer santral doğal yaşam alanlarının yanı sıra sit alanları, orman alanları ve tarım arazileri üzerinde olumsuz etkiler yaratacaktır.	The nuclear power plant to be installed in Akkuyu will have adverse effects on the natural habitats as well as on the protected areas, forest areas and agricultural areas	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	Akkuyu Nükleer Santrali'nin ÇED Raporu Sınıfta Kaldı - 02 Ekim 2013 [Accessed 15.01.2017]
241	Planlanmamış atıklar ve nükleer güvenlik sorunları Türkiye'yi bir nükleer kaza felaketine sürükleyebilir.	The waste management is not planned correctly, and together with nuclear safety problems, it can lead Turkey into a nuclear catastrophe.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	Akkuyu Nükleer Santrali'nin ÇED Raporu Sınıfta Kaldı - 02 Ekim 2013 [Accessed 15.01.2017]
242	Enerjide bağımsızlık ve kendi kendine yeterliliğe giden yolun önce enerji verimliliği, beraberinde de temiz, yenilenebilir ve yerel enerjiden geçtiğini hatırlatıyoruz	We remind everyone that the path to energy independence and self-sufficiency is first energy efficiency, along with clean, renewable and locally produced energy	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	Akkuyu Nükleer Santrali'nin ÇED Raporu Sınıfta Kaldı - 02 Ekim 2013 [Accessed 15.01.2017]

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243	Atıkların nakli sırasında oluşabilecek bir kazaya ilişkin acil eylem planı yok Rusya kaynaklı kullanılmış nükleer yakıtın Rusya Federasyonu'na geri gönderilebileceği ve yeniden işlenebileceği öngörülüyor. Kullanılmış nükleer atıkların Boğazlar yoluyla Rusya'ya taşınması konusunda oluşacak risklerden bahsedilmiyor. Dünyanın en yoğun deniz trafiğine sahip İstanbul ve Çanakkale Boğazlarından geçişte, olası kaza durumundaki acil durum planı ve sorumluluk konusu raporda yer almıyor.	There is no urgent action plan for an accident that may occur during transport of wastes. It is planned that spent nuclear fuel originated from russian operations could be sent back to the Russian Federation for reprocessing. There is no mention of the risks involved in the transport of spent nuclear waste to Russia via the Straits. The transit through the Straits of Istanbul and the Dardanelles has the world's busiest sea traffic, and the report does not include any contingency plan and clauses on liabilities.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Büyük Yanlış: Akkuyu [Accessed 15.01.2017]
244	Atıkların bertaraf edilmesi şu anda mevcut olmayan bir mevzuata dayandırılıyor "Kullanılmış yakıtın ve radyoaktif atıkların saha dışı yönetimi (depolama, yeniden işleme ve bertaraf işlemleri) mevcut Türkiye Cumhuriyeti Mevzuatı ve ilgili faaliyetlerin yürütüleceği zaman yürürlükte olacak mevzuat çerçevesinde gerçekleştirilecektir" deniliyor. Hayati önem taşıyan bir konunun, kabul edileceği varsayılan, şu an içeriği belli olmayan bir mevzuata göre düzenlenecek olması hukuka aykırıdır.	The process of disposal of waste is based on a legislation that does not exist yet. "The off-site management (storage, reprocessing and disposal) of used fuels and radioactive wastes will be carried out within the framework of the legislation in force at the time when the future Turkish Republic Legislation and related activities will be carried out." It is against the law that such a vital subject is regulated by a non-existent regulation that is currently unclear and which is supposed to be accepted in the future.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Büyük Yanlış: Akkuyu [Accessed 15.01.2017]
245	Kullanılacak reaktör TAEK Mevzuatı'na ters düşüyor, "Sınanmışlık" maddesi hâlâ ihlal ediliyor Akkuyu'ya yapılacak nükleer santral için VVER-1200 modeli reaktörün kullanılması planlanıyor. Sadece Rusya'da prototip düzeyinde inşasına bu yıl başlanan VVER-1200 reaktörünün, Akkuyu'daki nükleer santral projesinde kullanılması, TAEK'in kriterlerine göre, nükleer güç santralinin güncel ve kanıtlanmış teknolojik yenilikleri kapsaması gerekliliğine karşı düşüyor.	The plans for the reactor to be used does not comply with the current TAEK Legislation, the "Precedence" clause is violated. VVER-1200 model reactor is planned to be used in the nuclear power plant to be built in Akkuyu. The use of the VVER-1200 reactor, construction of which began only in prototype-level in Russia this year, is against the regulations on the need tohave up-to-date and proven technological innovations of the nuclear power plant according to TAEK legislation.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Büyük Yanlış: Akkuyu [Accessed 15.01.2017]
246	Acil koruyucu eylem planında eksiklikler bulunuyor. Acil koruyucu eylem planlama bölgesinin hangi kriterlere göre 5,4 km. yarıçaplı alan olarak belirlendiği belirtilmiyor. Bir nükleer kaza durumunda çok daha geniş bölgelerin etkilendiği bilinmesine rağmen, 5,4 km. belirlenmesinin ardındaki bilimsel gerekçeler raporda açıklanmıyor.	There are shortcomings in the emergency protective action plan It is not specified according to which criteria the area of 5.4 km radius of the emergency protective action planning area is decided upon. Although it is well known that much larger regions would be affected in the event of a nuclear accident, the scientific reasons behind the 5.4 km decision are not explained in the report.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Büyük Yanlış: Akkuyu [Accessed 15.01.2017]
247	İklim değişikliğine ve deniz ekosistemine olumsuz etkilerine yer verilmiyor Santralin 4 ünitesinin yılda toplam 17.000 kiloton CO2 salımını engelleyeceği belirtiliyor. Buradaki hesaplamalarda yalnızca elektrik üretiminden kaynaklanan sera gazı verileri temel alınıyor. Ancak, projenin inşaatı aşamasındaki ulaşım, çimento, yok edilen yutak alanlar (kesilecek ağaçlar vb.) gibi faktörlerden kaynaklanan sera gazı salımlarının hesaplanmamış olduğu ve projenin toplam sera gazı salımı ile engelleyeceği sera gazı salımı arasındaki fayda analizinin yapılmadığı görülüyor.	The negative impacts on climate change and marine ecosystem are not mentioned. It is stated that 4 units of the plant will prevent a total of 17.000 kilos of CO2 emissions per year. The calculations are based solely on greenhouse gas emissions from electricity generation. However, it is seen that no greenhouse gas emissions from factors such as transportation, cement production, destroyed sinks (cutting trees, etc.) have been calculated and no cost-benefit analysis has been conducted comparing the greenhouse gas emissions that the project will prevent by total greenhouse gas emissions.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Büyük Yanlış: Akkuyu [Accessed 15.01.2017]
248	Akkuyu'nun 1976 yılında yer seçimi sırasında, 25 yıl önceki teknolojik olanaklara ve bilgilere göre etütleri yapılarak onaylanan yer lisansının, geçerliliği sorgulanmalıdır. Santralin yapılacağı sahanın, şev hareketlenmelerine ve heyelanlara açık bir saha olmasının yanı sıra bugün Ortadoğu'daki çatışma ortamı göz önünde bulundurulmalıdır. Yapılacak nükleer santralin yeri kaza, patlama ve saldırıya açık bir konumdadır.	The validity of the site licence for Akkuyu dating back to 1976 should be questioned, since it was approved using the research according to the technological facilities and information of 25 years ago. In addition to being a field open to the slope motions and landslides, the conflicted environment in the Middle East should be re-considered today. The location of the nuclear plant to be built is in an open position for accidents, explosions and attacks.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Büyük Yanlış: Akkuyu [Accessed 15.01.2017]
249	TEMA Vakfı tarafından yapılan açıklamada nükleer santrallerin, herhangi bir kaza yaşanmaması durumunda bile toprak varlıkları	In the statement made by the TEMA Foundation, it was also put forward that nuclear power plants are damaging to nature and life	AntiNukeNGO13	Anti-Nuclear NGOs /	TEMA Vakfı, Akkuyu'da

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	kaybı, soğutma sularının deniz, akarsu ve göl habitatlarını olumsuz etkilemesi gibi çevresel tahribatlarla doğaya ve yaşama zarar verdiği de hatırlatıldı.	with environmental damages even in case of no accident, such as loss of land or cooling water negatively affecting sea, river and lake habitats.		Activists / Journalists	keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
250	Nükleer atıkların güvenli bir şekilde nasıl ve nerede depolanabileceği konusu bugünün teknolojisiyle bile çözülebilmiş değil. Bu son derece tehlikeli bir sorun. Tüm bu gerçekler, nükleer enerjinin aslında sanıldığı kadar temiz olmadığını gösteriyor. Biz de TEMA Vakfı olarak, yaşam için bu kadar ciddi bir tehdit olan nükleer enerjiden vazgeçilmesini istiyoruz	The question of how and where nuclear waste can be safely stored can not even be resolved with today's technology. This is a very dangerous problem. All these facts show that nuclear energy is not as clean as it actually percieved. We, as TEMA Foundation, want the government to give up nuclear energy, which is such a serious threat to life	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
251	ÇED raporunda yer verilen tsunami önlemleri yeterli midir?	Are the precautions against a Tsunami incident mentioned in the EIA report sufficient?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
252	ÇED raporunda yer verilen meteorolojik değerlendirmelerin, iklim değişikliği etkileri (soğutma suyu, kaza anında etki alanı) açısından yeterliliği değerlendirildi mi?	Are the meteorological evaluation included in the EIA report adequate for assessing climate change effects (cooling water, impact area at the time of accident)?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
253	ÇED raporunda bölgenin depremselliği ve deprem riski güncel yöntemlerle ortaya konmuş mudur?	In the EIA report, is the earthquake risk of the region has been re-assessed using state of the art methods?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
254	Yer seçimi, bölgenin ekolojik özellikleri (korunan alanlar, endemik bitki, hayvan ve böcek türleri, balık yatakları, Akdeniz foku yaşam alanları) ve 1. Derece arkeolojik sit alanı açısından uygun mudur?	Does the site selection process considers the ecological characteristics of the area (protected areas, endemic plants, animals and insect species, fish beds, Mediterranean fragrance habitats) and properties of 1st degree archaeological site adequately.	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
255	Nükleer güç santrali, Akdeniz deniz ekosistemi üzerinde ne gibi etkilere (denizden çekilecek soğutma suyu miktarı, deniz suyu sıcaklığını artırması, Akdeniz'de akıntı yaratması) neden olacak?	What will be the impacts of the nuclear power plant on the Mediterranean marine ecosystem (the amount of cooling water to be withdrawn from the sea, the increase in seawater temperature, the creation of discharge in the Mediterranean)?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
256	Akkuyu Nükleer Güç Santrali'nin dayanağı olan hükümetlerarası sözleşme şartları Türkiye'nin enerjide dışa bağımlılığını azaltabilecek mi?	Will the terms of the intergovernmental contract, which is the backbone of Akkuyu Nuclear Power Plant, reduce Turkey's energy import dependency?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
257	Nükleer güç santralini inşa edecek olan Rusya'nın, Akdeniz gibi sıcak bir iklim ve sıcak bir denizde bir nükleer santral inşa, işletme ve sökme deneyimi var mı?	Does Russia, which will build a nuclear power plant, have the experience of building, operating and dismantling a nuclear power plant in a warm climate and sea like the Mediterranean?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
258	Kaza durumunda 3. kişilere karşı sorumluluklar nelerdir?	What are the liabilities concerning third parties in case of an accident?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]

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259	Nükleer güç santrali için öngörülen kullanılmış yakıtların bertaraf yöntemlerinin (Boğazlardan geçirilmesi, kalıcı depolama, nihai depolama, derin jeolojik depolama) çevre ve insan sağlığı açısından etkileri nelerdir?	What are the environmental and human health effects of the disposal methods of spent fuels for the nuclear power plant (passing through the straits, permanent storage, final storage, deep geological storage)?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
260	Kaza durumunda Rus mevzuatının uygulanacak olması Türk mevzuatı açısından uygun mudur?	Is it appropriate for the Turkish legislation, to use the Russian legislation in case of an accident?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
261	800 m olarak belirlenen sağlık koruma bandı, bir nükleer güç santrali için çevre ve insan sağlığı açısından yeterli midir?	Is the sanitary protection band, which is determined as 800 m, sufficient for environment and human health for a nuclear power plant?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
262	Santralin işletmeden çıkarılması ve sökümü için öngörülen yöntemler (santralin betonla kaplanması) çevre ve insan sağlığı açısından uygun mudur?	Are the decommissioning and dismantling methods (plant coating with concrete) appropriate in terms of environment and human health?	AntiNukeNGO13	Anti-Nuclear NGOs / Activists / Journalists	TEMA Vakfı, Akkuyu'da keşif ve bilirkişi incelemesi yapıldı, 12 Temmuz 2016, [Accessed 15.01.2017]
263	Nükleer enerji sadece elektrik üretir ve dolayısıyla ısınma, soğutma ve ulaşım ihtiyaçlarına cevap veremediğinden ithal doğal gaz ve fosil yakıtın yerine geçemez ve ulusal enerji bağımsızlığını artırmaz.	Nuclear energy can not replace imported natural gas and fossil fuels because it only generates electricity and therefore can not respond to warming, cooling and transportation needs, and hence does not increase national energy independence.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Enerji Bağımsızlığı Sayfa - 23 Eylül, 2009 [Accessed 15.01.2017]
264	Kaynakların sınırlılığına ve politik sebeplere bağlı olan kısıtlamalar sonucu nükleer reaktörler isteğe göre açılıp kapanamaz. Nükleer santralin işlemesi için gerekli olan birincil yakıt, işlenmiş yakıt ve teknolojik donanım sayılı ve farklı ülkelerce sınırlı miktarda tedarik ediliyor. Bu nedenle nükleer enerji üretimi pek çok uluslararası ve jeopolitik dengelere ve belli bir tedarik zincirine bağımlıdır.	Due to limitations of resources and constraints linked to political reasons, nuclear power plants can not be turned on or off at will. The primary fuel, processed fuel and technological equipment required for the operation of the nuclear power plant are supplied in limited quantities by different countries. For this reason, nuclear power generation depends on many international and geopolitical equilibriums and a particular supply chain.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Enerji Bağımsızlığı Sayfa - 23 Eylül, 2009 [Accessed 15.01.2017]
265	Nükleer enerji kesintisiz enerji arzı sağlayamaz çünkü merkezi bir dağıtım sistemine bağlıdır. Üretim sürecinde meydana gelebilecek bir aksaklıkta bu merkezi sisteme bağlı tüm şehirlerde ve endüstri birimlerinde elektrik kesintisi meydana gelir.	Nuclear energy can not provide uninterrupted energy supply because it depends on a central distribution system. In a disruption that may occur during the production process, electricity interruption occurs in all cities and industrial units connected to this central system.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Enerji Bağımsızlığı Sayfa - 23 Eylül, 2009 [Accessed 15.01.2017]
266	Rüzgar, güneş, jeotermal, hidroelektrik ve biokütle kaynaklarının akıllıca karışımı sonucu başka kaynaklara ihtiyaç duyulmadan hem ana yük hem de dalgalanan talepler karşılanabilir. Bölgesel olarak enerji üretilebildiğinden endüstri ve yerleşim birimlerinin ihtiyaçları merkezi sistemden bağımsız olarak kesintisiz karşılanır. Yenilenebilir enerji sayesinde hem ulusal hem de yerel boyutta enerji bağımsızlığı sağlanır.	A smart mix of wind, solar, geothermal, hydroelectric and biomass sources can meet both the base load and fluctuating demands without the need for further resources. Since energy can be generated locally, the needs of industry and residential units are met without interruption, independent of the central system. Renewable energy provides energy independence both at national and local level.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Enerji Bağımsızlığı Sayfa - 23 Eylül, 2009 [Accessed 15.01.2017]
267	Nükleer enerji karbon salımını azaltmıyor ve iklim değişikliğini engellemeye giden yolu tıkıyor.Sadece elektrik üretimi için kullanıldığından ısınma, soğutma ve ulaşım ihtiyaçları için fosil yakıtlar kullanılmaya devam ediyor.	Nuclear energy does not reduce carbon emissions and blocks the road to precent climate change. Fossil fuels continue to be used for heating, cooling and transportation needs as nuclear energy is only used for electricity generation.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, İklim Değişikliği [Accessed 15.01.2017]
268	Enerji ihtiyacı için yenilenebilir enerji kullanılırsa 2020 yılına gelindiğinde karbon salım miktarları 1990 yılı salım miktarının %30	If renewable energy is used for energy demand, by 2020, carbon emissions can be reduced by 30% below 1990 emissions. For a	AntiNukeNGO10	Anti-Nuclear NGOs /	Greenpeace Med, İklim Değişikliği [Accessed

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	altına çekilebilir. Yatırılan bir dolar karşılığında yenilenebilir enerji nükleer enerjiden 7 kat daha az karbon salınmasını sağlar. Eğer tüm enerji ihtiyacı yenilenebilir enerjilerden karşılanırsa 2080 yılına gelindiğinde karbon salımları günümüzdeki salım miktarından %60 daha az olacak.	dollar deposited, renewable energy provides 7 times less carbon emissions than nuclear energy. If all energy needs are met from renewable sources, by 2080, carbon emissions will be 60% less than today's emissions.		Activists / Journalists	15.01.2017]
269	Kimse, dünya üzerinde hiçbir kaynaktan elektrik üretebilmek için 27 AB ülkesinin ortak bir uyarı sistemi oluşturması gerektiği bir enerji kaynağına güvenilir diyemez!	No one can say that an energy source is safe while 27 EU countries had to form a common warning system to be able to produce electricity from that source	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Riskler Sayfa - 23 Eylül, 2009 [Accessed 15.01.2017]
270	Güvenilir reaktörler hep bir masal olarak kalmaya devam edecek. Bugün herhangi bir reaktörde büyük miktarda radyasyonun doğaya salınabileceği bir kaza gerçekleşebilir. Normal işletim halinde dahi radyoaktif maddeler havaya ve suya salınmakta. Dahası II. Dünya Savaşı'nda atom bombasının yapımı sırasında yürütülen gizlilik politikası nükleer enerji projeleri için günümüzde de devam ettiriliyor.	Safe reactors will always remain a fairy tale. Today, an accident can occur in any reactor where large quantities of radiation can be released into the environment. Even in normal operation, radioactive substances are released into air and water. Moreover, the secrecy policies carried out during the construction of the atomic bomb in World War II continues today for nuclear energy projects.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Riskler Sayfa - 23 Eylül, 2009 [Accessed 15.01.2017]
271	"Ekonomik kalkınma sağlayacağız." Ticari nükleer santraller elektrik üretirler. Giderek artan ilk yatırım maliyetlerinden dolayı bu elektrik pahalı bir elektriktir. Belarus'a göre Çernobil kazası'ndan ortaya çıkan maliyet 235 Milyar Dolar. Bu Türkiye'nin toplam ekonomisinin (GSYİH) üçte birinden daha fazla. 28 yıl geçmiş olmasına rağmen hala her yıl Ukrayna ve Belarus yıllık bütçelerinin %5-9'luk önemli bir kısmını sadece Çernobil giderlerine ayırıyor. (Bu oran oran olarak Türkiye'nin kamu sağlık harcamalarına denk)	"We will provide economic development." Commercial nuclear power plants generate electricity. Due to the increasing initial investment costs, this electricity is expensive electricity. According to Belarus, the cost of the Chernobyl accident is $ 235 billion. This is more than a third of Turkey's total economy (GDP). Even though 28 years have passed, still only 5% -9% of the annual budgets of Ukraine and Belarus are allocated to Chernobyl expenses each year. (This ratio corresponds to Turkey's public health expenditures)	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Nükleer Enerjiye Neden Karşı? 22 Ekim 2009, [Accessed 15.01.2017]
272	"Nükleer santraller yapılmazsa karanlıkta kalacağız." Türkiye'de durum çok farklı. Enerji ihtiyacının ekonomik büyümeden çok daha fazla artması verimsizliğin en önemli göstergesi. Bu ihtiyacı karşılamak için önceleri doğalgaza şimdi de nükleer ve kömür gibi yatırımlara yönelik siyasi destek öyle bir noktaya ulaştı ki, 2013 yılında Türkiye ihtiyacı olandan daha fazla elektrik üretti. Karanlıkta kalmak bir yana, sektörde gereksiz bir balon oluştu.	"If we do not have nuclear power plants, we will stay in the dark." The situation in Turkey is very different. The most important indicator of inefficiency is the fact that your energy needs increase more than the economic growth. In order to meet this need, the political support for investments such as first natural gas and then nuclear and coal has reached such a point that, in 2013 Turkey produced more electricity than it needed. Aside from staying in the dark, there was an unnecessary inflated capacity in the industry.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Nükleer Enerjiye Neden Karşı? 22 Ekim 2009, [Accessed 15.01.2017]
273	Enerji politikaları, hem ihtiyaç hem de bu ihtiyaca bağlı üretimin doğru yönetimiyle belirlenir. Pekçok ileri teknoloji ile enerji ihtiyacı düşürülebilir. Bu ülkenin cari açık dengesini de olumlu etkiler. Ayrıca ortaya çıkan ihtiyaç da rüzgar, güneş, jeotermal, biyokütle gibi yenilenebilir enerjilerin dengeli biçimde sisteme eklenmesiyle karşılanabilir. Üstelik şu anda dünyada en hızlı gelişen sektörler rüzgar ve güneş enerjisi sektörleri. Maliyetler hızla düşüyor.	Energy policies should be conducted through the right management of both the demand and the production to meet that demand. With many advanced technologies, energy demand can be reduced. It also affects the current account deficit of this country positively. In addition, the need for renewable energy such as wind, sun, geothermal, biomass can be compensated by the balanced addition of the system. Moreover, the fastest growing sectors in the world are the wind and solar energy sectors. Costs are falling rapidly.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Nükleer Enerjiye Neden Karşı? 22 Ekim 2009, [Accessed 15.01.2017]
274	"Yenilenebilir enerji pahalı, nükleer enerji ucuz." Söküm, atık ve çevresel maliyetler hesaplığında nükleer dünyanın en pahalı enerjisi. Türkiye'yi örnek alırsak, Rusya ile yapılan anlaşmaya göre üretilen her kilovatsaat elektrik için piyasa en az 12,5 USD/sent ödeyecek. Oysa bu rakam rüzgar ve hidroelektrik için 7 sent. Güneş enerjisi için ise 13 sent. Üstelik herhangi bir büyük çaplı kaza olursa masrafları kimin karşılayacağı belli değil dolayısıyla kaza maliyetleri hepimizi vergi olarak yüklenecek.	"Renewable energy is expensive, nuclear energy is cheap." When the costs of decommissioning, waste management and environmental damage is accounted for, nuclear energy is the most expensive nuclear energy in the world. If we take Turkey as an example, the market will pay at least 12.5 USD / cents for every kw/h of electricity produced according to the agreement made with Russia. This figure is 7 cents for wind and hydropower. 13 cents for solar energy. Moreover, if there is any major accident, it is not clear who will pay for the expenses, so the accident costs will all be taxed.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Nükleer Enerjiye Neden Karşı? 22 Ekim 2009, [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
275	"Nükleer enerji, iklim değişikliğiyle mücadelede gereklidir." Nükleer enerji karbon salımını azaltmıyor ve iklim değişikliğini engellemeye giden yolu tıkıyor. Sistem merkezi olarak yapılandırılmaya devam ediyor, bu da baz yükü santrallerine ihtiyacı artırıyor. Kısacası, daha fazla nükleer santral daha fazla kömür santrali demek. Oysa ihtiyacımız olan, yenilenebilir enerjiler, akıllı şebekeler ve enerji verimliliği.	"Nuclear energy is necessary in fighting climate change." Nuclear energy does not reduce carbon emissions and blocks the road to fight the climate change. The system continues to be configured centrally, which increases the need for base load power plants. In short, more nuclear power plants mean more coal power plants. What we need is renewable energies, smart grids and energy efficiency.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Nükleer Enerjiye Neden Karşı? 22 Ekim 2009, [Accessed 15.01.2017]
276	Satın aldığı doğalgazın yaklaşık yüzde 50'sini konutlarda ısınma ve endüstriyel amaçlarla kullanan Türkiye de, planladığı nükleer santralleri şebekeye bağlayabilse dahi daha fazla fosil yakıt ve özellikle de doğalgaz alımı yapıyor olacak. Enerji ve Tabii Kaynaklar Bakanlığı'nın verilerine göre bu santrallerin, 2020 yılında, enerji ihtiyacımızın yaklaşık %4'ünü karşılaması öngörülüyor. Bu santrallere milyarlarca Lira harcamış olan Türkiye ise daha fazla doğalgaz, petrol ve ithal kömür alımı yapıyor olacak.	Turkey, which uses about 50 percent of the imported natural gas for heating and industrial purposes, will be importing more fossil fuels, especially natural gas, even if it can connect the planned nuclear power plants to the grid. According to the Ministry of Energy and Natural Resources, these plants are expected to meet about 4% of our energy needs by 2020. Turkey, which has spent billions of Lira on these power plants, will be buying more natural gas, oil and imported coal.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Nükleer Enerji Bağımlıdır: Nükleer enerji ithal doğalgazın yerini tutamaz! 14 Aralık, 2009 [Accessed 15.01.2017]
277	Nükleer endüstri, onun çıkarlarını gözeten politikacılar ve atom mühendislerinin dillerine pelesenk olmuştu: 'Çernobil'de koruma kabı yoktu. Bakın...' diyorlardı, 'Three Mile Island (TMI) kazasında hiçbir radyoaktif madde açığa çıkmadı.' (Gerçekte, INES ölçeğine göre 4 sayılan TMI kazasında elbette radyasyon açığa çıkmıştı). Fukuşima-1'deki tüm reaktörlerde koruma kabı vardı. Ama radyasyonun açığa çıkması engellenemedi. Hem de INES ölçeğine göre 7 sayılan bu kazalar artık Çernobil'e eş tutuluyor.	This had become a repeated remark of representatives of nuclear industry, politicians and atomic engineers: 'There was no containment shell in Chernobyl. Look ... 'they say,' There was no radioactive leakage in the Three Mile Island accident ' (Indeed, radiation exposure was obvious in the TMI scoring, number 4 according to the INES scale). All the reactors in Fukushima-1 had a containment shield, but the radiation could not be prevented from going out. This accident, numbered 7 according to the INES scale, is now being considered equivalent to Chernobyl.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Nükleer endüstrinin yalanları yazı dizisi 2 Mayıs, 2011 [Accessed 15.01.2017]
278	Çernobil'de kalbi içinde tutan kap kısım yoktu. Bizim yapacağımız 3.nesil nükleer santrallar 120m. betonla, demirle kapalı, tehlike anında da otomatik olarak kendini kapatıyor.'	There was no containment shell in Chernobyl that held the core in it. We will construct a 3rd generation nuclear power plant enclosed with 120 cm of concrete and iron, shutting down automatically in the event of danger.	Govn4	Governmental Agency	Greenpeace Med, Nükleer endüstrinin yalanları yazı dizisi 2 Mayıs, 2011 [Accessed 15.01.2017]
279	Türkiye'de nükleer reaktörlere karşı çıkılmasının temelinde Çernobil nükleer santral kazası yatmakta. Çernobil reaktöründe koruma kabı olmadığı için kazanın insanlara ve çevreye etkisi oldu. Çernobil benzeri bir kazanın olma olasılığının 1 milyon yılda birdi	The accident in Chernobyl nuclear power plant underpins the opposition to nuclear reactors in Turkey. Since the Chernobyl reactor was not equipped with a containment shell, the accident affected people and the environment. The probability of a Chernobyl-like accident is one in a million years	Scientist17	Academics / Scientists / Experts	Greenpeace Med, Nükleer endüstrinin yalanları yazı dizisi 2 Mayıs, 2011 [Accessed 15.01.2017]
280	Aslında nükleer yakıt çevriminin her aşamasında radyoaktif kirlilik söz konusu. Uranyum madenciliğinde de mekanik işlem sonucunda Thorium, Radium ve Radon-222 gibi radyoaktif elementler ortaya çıkıyor. Bunlardan en tehlikeli olanı 3.8 günlük yarılanma ömrüne sahip olan Radon-222 elementi. Radon gazları hem madenlerde çalışan işçileri hem de maden çevresinde yaşayan yerel halkları doğrudan etkiliyor.	In fact, radioactive pollution is at every stage of the nuclear fuel cycle. In the uranium mining, radioactive elements such as Thorium, Radium and Radon-222 are emerging as the result of the mechanical process. The most dangerous of these is the Radon-222 element, which has a half-life of 3.8 days. Radon gasses directly affect both the workers working in the mines and the local people living in the vicinity of the mine.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Nükleer Enerji Kirlidir: Uranyum Madenciliği, 26 Ekim, 2009 [Accessed 15.01.2017]
281	Nükleer kazalara yönelik hafızamız Çernobil felaketiyle başlıyor olabilir ancak Çernobil'den çok önce de nükleer endüstri çok ciddi kazalar yaşamaktaydı. Sivil nükleer programlarda da gizlilik ilkesinin uygulanması bunların ortaya çıkmasını da engelledi.	Our memory for nuclear accidents may have begun with Chernobyl disaster, but even long before the Chernobyl accident, the nuclear industry was experiencing very serious accidents. The implementation of the secrecy principle in civilian nuclear programs prevented them from getting publicized	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, Nükleer Enerji Kirlidir: Güvenlik Açıkları, 6 Kasım, 2009 [Accessed 15.01.2017]
282	Çevre ve Şehircilik Bakanlığı ile Enerji ve Tabii Kaynaklar Bakanlığı nezdinde devam eden, şeffaf olmayan, yurttaşların, çevre kurumlarının katılımcılığını dışlayan, çevre örgütlerinin süreçlerde yaptığı itirazları, sanki sunulan katkılarmış gibi göstererek projeye	The current process attempts to gain a sense of legitimacy in the project by presenting the objections of the environmental NGOs as if they were contributing to the process. The process at the Ministry of Environment and Urbanisation and the Ministry of Energy and	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, İğneada'ya Nükleer Santral mi? Yok artık! 15 Ekim, 2015, [Accessed

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	meşruiyet algısı kazandırmaya çalışan cinlikler ve açılan davalar.	Natural Resources are non-transparent, excluding the participation of the citizens and the environmental institutions. And furthermore, there are court cases.			15.01.2017]
283	Nükleer kazaların pek çoğu personel hatasından kaynaklanırken, yeterli personel olmadığını bile bile nükleer ısrarı bir intihar değil mi?	It is a suicide attempt to insist on nuclear, knowing that most of the nuclear accidents are caused by personnel error and there is lack of qualified personnel.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, İğneada'ya Nükleer Santral mi? Yok artık! 15 Ekim, 2015, [Accessed 15.01.2017]
284	Nükleer enerjiye hayır, çünkü doğaya geri dönüşü olmayan zararlara, yıkıma mecbur değiliz. Doğa, devletlerin ve şirketlerin, yaşanan deneyimlerden ders çıkarmadan tahrip etmekte, risk ve tehdit altına sokmakta ısrar edebileceği bir nesne değildir.	We are strongly opposed to nuclear energy; because we do not want to bear the irreversible costs of environmental damage. Nature is not an object that the state and companies can insist on destroying, risking and threatening. Lessons should be learned from previous experiences.	AntiNukeNGO10	Anti-Nuclear NGOs / Activists / Journalists	Greenpeace Med, İğneada'ya Nükleer Santral mi? Yok artık! 15 Ekim, 2015, [Accessed 15.01.2017]
285	Akdeniz'de kaybolan fokların hala Akkuyu ve civarından yaşamlarına devam etmeleri bu bölgenin hala bozulmadan kalabilmiş doğal dokusudur. Bu bölgede yapılacak olan en ufak bir faaliyetin Akdeniz fokunun bölgeyi terk etmesine neden olması kaçınılmazdır.	Seals that have disappeared in the other areas in Mediterranean still remain in Akkuyu and its surroundings. It is inevitable that the smallest activity to be done in this region would cause the Mediterranean monk seal to leave the region.	Scientist8	Academics / Scientists / Experts	Greenpeace Med, Akkuyu Nükleer Santrali denizdeki yaşamı nasıl etkileyecek? 22 Temmuz, 2014, [Accessed 15.01.2017]
286	Akkuyu soğutma suyu nedeni ile bölgede oluşacak sıcaklık değişimlerini ne derece tahmin edebileceği tartışmaya açıktır. Diğer taraftan amaca uygun bir model mevcutken ve ön çalışmalar yapılmasına rağmen neden aynı model ile devam edilmediği ise anlaşılamamaktadır.	How much the cooling water of Akkuyu will cause temperature changes in the region is open to debate. On the other hand, it cannot be understood why the same model is not applied in the assessments for Akkuyu, despite the fact that there is a suitable model available and the preliminary studies have been carried out for predicting such temperature change.	Scientist8	Academics / Scientists / Experts	Greenpeace Med, Akkuyu Nükleer Santrali denizdeki yaşamı nasıl etkileyecek? 22 Temmuz, 2014, [Accessed 15.01.2017]
287	Akkuyu nükleer santralı soğutma suyu nedeni ile bölgede oluşacak ısı artışı nedeni ile Akdeniz endemiği ve Akdeniz ekosistemi için anahtar tür olan bu bitkinin batıya doğru ısınma oranına bağlı olarak yok olması kaçınılmazdır.	It is inevitable that key endemic species for the Mediterranean ecosystem is going to go extinct towards the west of Mediterranean, due to the warming effect of the cooling water of the Akkuyu nuclear power plant.	Scientist8	Academics / Scientists / Experts	Greenpeace Med, Akkuyu Nükleer Santrali denizdeki yaşamı nasıl etkileyecek? 22 Temmuz, 2014, [Accessed 15.01.2017]
288	Bir ülke kalktı, '2021 yılında nükleer santrallerden vazgeçiyorum' dedi. Zararlıysa hemen vazgeçmen lazım. Neden 2021 diye araştırdık ve bu tarihte santralin ömrünün bittiğini öğrendik. Ömrü biten santralleri kapatmak, nükleerden vazgeçmek anlamına gelmiyor. Türkiye'nin bir projeyi absorbe etme haddi çok daha fazlalaştı	A country said 'I will give up nuclear power plants in 2021'. If it's harmful, why not give it up now? We inquired about the date 2021, only to find out that the plant's lifetime would be over at that time. Shutting down plants at the end of their lifetime does not mean to give up on nuclear energy. It is now quite possible for Turkey to carry out this project.	Govn4	Governmental Agency	Taner Yıldız'dan 'Akkuyu' açıklaması, Dünya Gazetesi, 11 Nisan 2015, [Accessed 15.01.2017]
289	Abartılı enerji talebi projeksiyonları yaparak nükleere ihtiyaç olduğu söyleniyor ama geçmişte yapılan projeksiyonlar hep sapma göstermiş. (Gerçekleşen talep hep daha düşük olmuş)	They make exaggerated energy demand projections and say that there is a need for nuclear energy to meet the demand, but projections made in the past have always deviated. (The demand has always been lower)	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
290	Mikro-heslere de, yaşamı tehdit ettikleri için, insanları orada yaşayamaz durumda bıraktıkları için karşıyız.	We are opposed to micro-hydro power plants, because they threaten life and force people to leave their villages, since they cannot live there.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
291	Hali hazırda zaten fazlaca (nükleer dışı) enerji üretim tesisi kurma talebi var. Eğer bu tesisler kurulursa zaten resmi projeksiyonların bile üstünde bir kurulu güç çıkıyor. Bu resme bakarak nükleere ihtiyaç yok diyemezsiniz.	There is already enough demand to establish many (non-nuclear) energy production facilities. If these facilities are installed, there will already be an installed capacity larger than the official projections. Looking at this picture, you cannot say that there is need for nuclear energy.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
292	Elektrik talebinin pik noktası (puant talep) genelde gün ortasında, ay	Electricity demand usually peaks in the middle of the day and during	AntiNukeNGO11	Anti-Nuclear	NükTe Platform ile NKP

ArgID	Argument	Translation	Who	Role	Source
	olarak da yaz aylarında gerçekleşiyor. Yani tam güneşin olduğu zamanlarda. Tüketimimizi güneşten elde ettiğimiz elektrikle entegre edebiliriz.	the months of summer. In other words, when it is full of sun. We can integrate our consumption with electricity from the sun.		NGOs / Activists / Journalists	(Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
293	Dışa bağımlılık argümanı doğal gaz için söyleniyor. Kurulu gücün yüzde 30 civarı doğalgaz. Ama biz genelde kurulu gücümüzün tamamını aynı anda çalıştırmıyoruz. Fakat yine de doğal gaz santrallerine alım garantisi verdiğimiz için, hidroelektrik santralleri yerine, doğal gaz santrallerinden elektrik ürettiriyoruz. Bunun nedeni kaynaklarımızın olmaması değil, yanlış enerji politikalarıdır. Geçmişteki yanlış projeksiyonlar nedeniyle alım garantisi vermişiz bu doğal gaz santrallerine.	Import dependency argument is put forward for natural gas. About 30 percent of the installed power is natural gas. However, although we do not usually use all of our installed capacity at the same time, we still generate electricity from natural gas plants instead of hydroelectric power plants. This is because we guarantee purchase to natural gas power plants. This is not because of the absence of our domestic resources, but the wrong energy policies. Due to the wrong projections in the past, we have given a purchase guarantee to these natural gas power plants.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
294	Doğalgazı sadece çok ihtiyacım olduğunda kullanmalıyım. Ondan önce kendi kaynaklarım var. Hidrolik kullanmalıyım, kömür kullanmalıyım. Türkiye'de doğal gaz baz yük santraliymiş gibi kullanılıyor. Ondan sonra da dışa bağımlıyız deniyor.	We should only use natural gas when we need it. We have to use our own resources before that. We must use hydraulic! We must use coal! In Turkey, natural gas is used as a base load plant. And then we are told that we have import dependency.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
295	Türkiye'de sınırsız büyüme ve sınırsız tüketime odaklanılıyor. Talep yönetimine, verimliliğe, yenilenebilir enerji kaynaklarına odaklanılması gerekiyor.	In Turkey, we focus on unlimited growth and unlimited consumption. However we need to focus on demand management, efficiency, and renewable energy sources	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
296	Dünyamızın sınırlı enerji kaynakları ile kapitalizmin sınırsız büyüme hedefleri, sınırsız tüketim talebi, sınırsız enerji talebi karşılanamaz.	Capitalism's unlimited growth targets, unlimited demands for consumption and energy demands cannot be met with our world's limited energy resources.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
297	Öncelikle tüketim ayağı planlanmalıdır. Ne kadar enerjiyi neyi üretmek için kullandığımıza bakmalıyız.	First, consumption must be planned. We have to see how much energy we use to produce things.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
298	Eğitim hakkı gibi, enerjiyi kullanmak da bizim bir hakkımız. Ülkemizde özelleştirmelerle enerji kaynaklarımızın kontrolü kaybedilmiş, elektrik enerisi serbest piyasa koşullarına ve sermayenin kar güdüsüne terk edilmiş, ucuz, kaliteli ve kesintisiz enerji sağlanamamıştır.	Just like the right to education, energy is a right too. After privatization, our country has lost control of our energy resources and the domain of energy has been left to the free market and greed of the capital. Cheap, high quality and uninterrupted energy could not be provided.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
299	Yanlış enerji politikaları nedeniyle enerjide %70 dışa bağımlıyız. Rusların kurup işleteceği, bizim elektrik satın alacağımız nükleer santralle dışa bağımlılığımız daha da artacak ve biz daha pahalı elektriğe mahkûm edileceğiz.	Because of the wrong energy policies, we are dependent on imported energy with a rate of 70 percent. The Russians will build and run the plant, we will buy our electricity, our dependency on the imported energy from the nuclear power plant will increase further, and we will be condemned to electricity that is more expensive.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
300	Enerjiyi verimli kullanırsak, verimlilik politikalarını uygularsak, mevcut santrallermizde iyileştirme çalışmaları yaparsak, yerli ve yenilenebilir enerji kaynaklarına öncelik verirsek, kayıplarımızı azaltırsak, üretim kaynaklarımızı verimli ve etkin kullanırsak, arz talep dengesini yönetirsek, elektrik üretim tercihini toplumsal maliyet hesabı yaparak, uzun vadede çevre sosyal ve sağlık etkilerini göz önüne alarak yaparsak, halkın çıkarları doğrultusunda kalkınma modelleri tercih edersek, enerji-ekoloji dengesini gözetirsek, doğru enerji talep tahmini yaparsak kaynaklarımızın bize yetmemesi için hiçbir neden yok.	If we use energy efficiently, if we implement efficiency policies, if we make improvements in our existing power plants, if we prioritize domestic and renewable energy sources, if we reduce our losses, if we use our production resources efficiently and effectively by managing supply demand balance, if we choose development models in line with the interests of the people and if we supervise the energy-ecology balance and estimate the right energy demand, there is no reason why our own resources would not be enough.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
301	Sinop nükleer santrali için yer lisansı olmadan anlaşma imzalandı.	The agreement was signed without a site permit for the Sinop	AntiNukeNGO11	Anti-Nuclear	NükTe Platform ile NKP

ArgID	Argument	Translation	Who	Role	Source
		nuclear power plant.		NGOs / Activists / Journalists	(Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
302	Akkuyu'daki yer lisansı 1976 şartlarında verildi. O dönemde yer lisansına imza atan kişiler şu anda bu santrale karşı çıkıyor. Lisans 2013'te sözde güncellendi ama deprem riski (ecemiş fayı) gözardı edildi.	The site permit in Akkuyu was issued in 1976 conditions. Those who signed the site permit then, are opposed to this plant now. The permit was supposedly updated in 2013, but the earthquake risk was ignored.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
303	Enerji kaynak seçimleri siyasidir. Doğalgaz'da olduğu gibi, nükleer de siyasi tercihtir. Aynı ÇED firması termik santral için yaptığı ÇED raporunda termik santrali övüp nükleeri kötülerken; nükleer için yaptığı ÇED raporunda termiği kötüleyip nükleeri övebiliyor. Bu da bu konunun aslında siyasi bir mesele olduğunu gösterir.	Energy source choices are political. Just like natural gas, nuclear is also a political choice. The same EIA company may praise thermal power and bad mouth nuclear in an EIA report prepared particularly for a thermal plant, and bad mouth thermal power and praise nuclear when they are working on an EIA report for a nuclear plant.This shows us that this is actually a political issue.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
304	50 yıl çalışacak, söküm maliyetlerini düşünürsek belki 100 yıl sürecek, daha sonra atıklarının ne olacağını, kaç yüz yıl daha kalacağını bilmediğiniz bir yatırımı 5 yıl görev için seçtiğimiz bir hükümet tek başına karar veremez. Buna ancak halk olarak karar verilebilir. Bunu halka sordunuz mu?	A nuclear plant will be in operation for 50 years, and thinking about the decommissioning costs, it may take 100 years. We do not know what to do with the nuclear waste as yet, nor do we know for how many centuries it will remain. Considering the far-reaching impacts of nuclear power, a government who will only run for 5 years cannot decide on the matter [to build a NPP] alone. It is only the citizens that can decide on it but nobody bothers to ask their opinion on the matter	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
305	Bir şeyi almak, kullanmak, işletmek o teknolojiye sahip olunacağı anlamına gelmez. (Nükleer santaller için de böyle). Nükleer santrallerin revaçta olduğu dönem 1970lerdi. Bu artık bitmekte olan, çökmekte olan bir teknoloji. Yükselen değerler akıllı şebekeler, güneş, rüzgar, yenilenebilir kaynaklar, arz talep dengesinin akıllıca yürütümüdür. Yatırım yapacaksak bunlara yapmalıyız. Ya da enerji depolama sistemlerine odaklanmalıyız.	Buying, using and operating something does not mean that you will have that technology. (And this is the case for nuclear power plants). The period when nuclear power plants were popular was the 1970s. This is an outdated technology. Rising values of today are intelligent execution of intelligent networks, sun, wind, renewable resources, and smart management of supply-demand balance. If we're going to invest in anything, we should invest in these. Or we should focus on energy storage systems.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
306	"Yenilenebilir enerjilere zaten yatırım yapılıyor" diyorlar ama problemde burada. Aslında yapılmıyor. Bu yatırımlar çok yetersiz. Güneşe, akıllı şebekelere yatırım yapılmıyor.	"They are already investing in renewable energies," they say, but herein lies the problem. Actually we are not investing enough. These investments are very inadequate. We are not investing in the sun or in intelligent networks.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
307	Bir ülkenin gelişmişlik seviyesini gösteren üç teknoloji kriteri vardır. Uzay ve havacılık, yazılım ve telekomünikasyon, nükleer teknoloji. Bu teknolojilere sahip ülkeler gelişmiş ülkelerdir. Bu üç teknoloji bir ülkenin gelişmişlik seviyesini belirliyor.	There are three technology criteria that show the development level of a country. Space and aeronautics, software and telecommunications, and nuclear technology. Countries with these technologies are developed countries. These three technologies determine the level of development of a country.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
308	"Nükleer santral yapan mühendisimize nasıl güveneceğiz" diye soruluyor. Uçağa binerken mühendise güveniyor musun? Peki ya hızlı tren? Bunlara güvenip nükleer santralde niye güvenilmiyor? Neymiş, nükleer santral ya patlar, ya da radyasyon yayar. Bu efsane piyasada dalga dalga yayılmış.	"How do we trust our engineer who makes a nuclear power plant?" they often ask. Do you trust the engineer when boarding the plane? What about the fast train? Why do not you rely on them and trust the nuclear power plant? They allege that nuclear plant either explodes or emits radiation. This is nothing but an urban legend.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
309	Nükleer santraldeki tek risk, çeşitli sebeplerle reaktör kazanının yarılması sonucu ortaya çıkabilir. Bunun dışındaki riskler bunun altındadır.	The only risk in the nuclear power plant may arise as a consequence of the break-up of the reactor boiler for various reasons. All the other risks are lower than that	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
310	Nükleer santral üretimini kafanıza göre yapamazsınız. Dünya devletleri buna izin vermez. O yüzden mühendisler yapamayacaklar,	You cannot just manufacture nuclear power plants arbitrarily. World states will not allow this. That's why engineers would not be able to	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform)

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	kafalarına göre yapacaklar gibi bir durum söz konusu olamaz.	construct one without a plan.			tartışma programı 1. Bölüm [Accessed 15.01.2017]
311	Türkiye'de (Nurcan hanım'ın dediği gibi) enerji hedefleri ve projeksiyonları konusunda hatalar yapılmıştır. Bunları kimse inkar edemez. Ama önemli olan bu hatalardan ders çıkarmaktır.	In Turkey (as Mrs Nurcan said), mistakes were made regarding energy targets and projections. Nobody can deny them. The important thing is to learn from these mistakes.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
312	Türkiye'nin hidrolik potansiyeli zaten kullanılmaktadır. Daha fazla yükselmesi çok mümkün değil.	The hydraulic potential of Turkey is already being utilized at full capacity. It is not possible to increase it further.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
313	Türkiye'nin yenilenebilir potansiyeli ile ilgili düzgün resmi bir kaynak bulamadım. Hep insanlar izafi konuşuyor.	I could not find a proper official source for Turkey's renewable potential. People are always talking without basing their arguments on solid facts.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
314	Nükleer enerjiye karşı olma işi teknoloji karşıtlığına kadar varıyor. Elektrik mühendisleri odası nükleere nasıl karşı olur? Oradan elektrik üretiliyor. Mühendis teknolojiye karşı olamaz. Bu gericiliktir. Nükleer teknolojinin tamamına karşı olunmaz. Nükleer santrale karşı olabilirsiniz. Ama nükleer tıp vb. diğer alanların hepsine karşı olamazsınız. Biz bunu açıkladıktan sonra mühendisler odası görüşünü bu şekilde düzeltti.	Nuclear energy opposition almost borders on technology opposition. How can the Chamber of electrical engineers oppose nuclear? Electricity is produced there. Engineers cannot resist technology. This is conservatism. You cannot be against nuclear technology altogether. You may be against the nuclear power plants, but you cannot be against all of the other areas such as nuclear medicine. After we explained this, the chamber revised their official view.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
315	Siz elektrik enerjisini halka, yani müşteriye sunmak zorundasınız. Şu odada elektrik kesilse, soruyorum size, neyimiz çalışacak? Bir sistem enerji kullanıyorsa kirlilik yaratmaması da mümkün değil. Böyle bir şey yok. İnsan nefes alırken bile doğaya karbondioksit salıyor. Otomobiller egzostlarından salım yapıyor. Ama nükleer santral için işte bunu söyleyemiyorsunuz. (atmosfere salım yok)	You have to provide the people, i.e. the customer with electricity. If the electricity in this room is cut off, what will we work with? If a system uses energy, it is not possible for it not to create pollution. There is no such thing. Even when people breathe, carbon dioxide is released into nature. Cars are emitting dangerous gases from their exhausts. But you cannot say that for nuclear (because there are no atmospheric emissions).	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
316	Yenilenebilir enerji kaynakları ana (baz) enerji kaynakları arasında şu anki teknoloji ile sayılamaz. Türkiye rüzgarda yatırım yapacak, jeotermalde yatırım yapacak, olabildiği kadar yapacak. Ne kadar oluyorsa hepsini yapacak. Ama Türkiye 12-14 MW'lık bir enerji kaynağına sahip rüzgarda. Hepsini yapınca ne yapacağız. Bakın hidrolik de bitiyor. Ne yapacağız?	Renewable energy sources cannot be counted among the main (base) energy sources with the present technology. Turkey will invest as much as possible in the wind, and geothermal. Turkey will do the best it can to invest in these. But Turkey has an energy source of 12-14 MW in wind. What will we do when we have reached the maximum? Look, the era of hydropower is over too. What are we going to do?	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
317	Mikroheslerle doğa katledildi. Bu konuda Nurcan hanımla aynı görüşteyiz. O doğaya zarar veren HES'ler yerine nükleer santral yapılmalıydı.	The nature was massacred with micro hydropower plants. We agree with Mrs. Nurcan in this regard. The nuclear power plant should have been built instead of the HEPPs that damaged nature.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
318	Dünya kadar jeotermalimiz var argümanı doğru değil. 33000 MW jeotermal var deniyor. Ama o aslında 33 bin MWt. Yani termik enerji bu. Asıl güç olsa olsa 1000 MW dir. Gerçekleri çarpıtmaya çalışan çok insan var. NükTe bilimsel argümanları kullanarak bu bilgileri doğru anlatmaya çalışıyor.	The argument that we have too much geothermal is not true. They say we have 33,000 MW geothermal. But it is actually 33 thousand MWt. So this is the thermal energy. The actual power is 1000 MW, tops. There are so many people trying to distort reality. NükTe is trying to explain this information correctly using scientific arguments.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
319	Kapasite faktörü diye bir şey. Hidrolikte %40-45. Termikte %50-85 civarı. Ama Türkiye hidrolikte bu sene (2014) bu rakamları da yakalayamayacak. Neden? Su yok. Kuraklık olunca ne yapacaksın. Doğaya bağlısın. Yağmura bağlısın. Ama nükleerde bu oran %90-95	Capacity factor is 40-45% in hydraulic and about 50-85% in thermal. But Turkey will not be able to catch up with these figures this year (2014). Why? There is no water. What do you do when there is drought? You depend on nature, you depend on rain. But in nuclear	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
	arası. Rüzgarda 1000 MW kapasiteden 250 MW enerji ancak üretiliyor.	this rate is 90-95%. At the 1000 MW capacity in the wind, 250 MW of energy is produced at maximum.			
320	Dünyada çok sayıda ülke yeni nükleer reaktörler inşa ediyor. Dünyada 71 tane nükleer santral üretiliyor şu anda. Dünyada aynı anda bu kadar çok nükleer santral inşası olmadı hiçbir zaman.	Many countries in the world are building new nuclear reactors. There are 71 nuclear power plants underway in the world. There have never been so many nuclear plant constructions in the world at the same time.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 1. Bölüm [Accessed 15.01.2017]
321	Yeni planlanan santraller arasında ABD dışında batılı hiçbir bir ülke yok. Aslında mesele şu: Nükleer santraller toplumsal muhalefeti zayıf, demokrasisi zayıf ülkelere doğru kayıyor. Nükleer teknolojiyi siz yeni bir teknoloji gibi yansıtırsanız yanlış yaparsınız.	There are no western countries (except the US) where new NPPs will be built. In fact, here is the issue: Nuclear power plant construction is shifting towards weaker democratic countries with weak social opposition. If you promote nuclear technology as a new technology, you take the wrong path.	Scientist6	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
322	Türkiye'de 14bin megavat rüzgar olduğu doğru değil. Sadece 2007 yılında bile 48bin megawatt'lık bir rüzgar enerjisi üretimi müracaatı vardı. Rüzgar kurulu gücü şebekenin %15'ini geçmesin denildi. Sonra çeşitli problemler çıkıyor zira.	It is not true that the wind capacity in Turkey is 14 thousands megawatts. Even in 2007 alone, there was a request for wind energy production of 48 thousands megawatts. But later, it was decided that the installed capacity for wind power should not exceed 15% of the total capacity, since various problems occurs afterwards. .	Scientist6	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
323	Uçağın da, trenin de riski var, evet. Anladık. Ama her şeyin sonuçları aynı mıdır? Nükleer riskini bu risklerle bir göremezsiniz. Güvenlik ve atık riskleri henüz çözümlenebilmiş değildir.	There is a risk of travelling by plane and train too, yes. We get that. But are the consequences of those risks the same? Definitely not. Safety and waste management problems have not been resolved yet.	Scientist6	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
324	Nükleer enerjiye sahip olmak nükleer bombaya sahip olmayı gerektirmez. Tersi de doğru değil.	Having nuclear energy does not necessarily entail having nuclear bombs. The opposite is not true either	Scientist5	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
325	Nükleer reaktör sayısını belirtmek bir bilgi vermez bize. Kaç MW yeni kapasite oluştuğuna bakmak lazım. Yeni reaktörler daha büyük.	Indicating the number of nuclear reactors does not give us any specific information. You need to look at the new capacity you have in terms of MW. The new reactors are bigger.	Scientist5	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
326	Nükleer santrali denetlemek de kamuya ayrı bir masraf olarak geri dönüyor. Bir de fukushima sonrası lisanslama maliyetleri de ayrıca artıyor.	Inspecting a nuclear plant is an additional cost to be paid by the public. Furthermore, licensing costs are also increasing after Fukushima..	Scientist18	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
327	Beşikten mezara maliyetler çok yüksek olduğu için Amerika'da 78'den bu yana kurulmuyor.	They are not being built in US anymore since 78, since the total costs are very high.	Scientist18	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
328	Enerji kullanımı problemine birinci çözüm rüzgar da değil, güneş de değil, nükleer de değil.... Birinci çözüm daha az enerji tüketmek.	The first solution to the problem of energy consumption is not the wind, nor the sun, nor the nuclear. … The first solution is to consume less energy.	Scientist18	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
329	Toplumsal maliyetleri de hesapladığınızda kömür en ucuz olmuyor.	When you account for the social costs, coal is not the cheapest alternative	Scientist18	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
330	Türkiye'de rüzgarın kapasite faktörü %25 değil, %35-40'tır. Şu anda Türkiye'nin rüzgar enerjisi potansiyeli 150bin MW'dir. Adil beyin belirttiği gibi 3000-4000 değil.	The capacity factor for wind in Turkey is 35-40%, not 25%. Currently Turkey's wind energy potential is 150 billion MW. It is not 3000-4000 as Mr. Adils claims.	Scientist18	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]

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331	Güneş enerjisi herkese eşit ulaşıyor. Kimseyi öldürmüyor. Yenilenebilir enerjiden bahsederken eşitlik, özgürlük ve barıştan bahsediyoruz.	Solar energy reaches everyone equally. It does not kill anyone. When talking about renewable energy, we are talking about equality, freedom and peace.	Scientist18	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
332	Yenilenebilir enerji fiyatları git gide düşüyor. Bunun yanında enerji verimli ürünler (örneğin led ampuller) de git gide daha ucuzluyor.	Renewable energy prices are going down. In addition, energy-efficient products (such as LED light bulbs) are also becoming cheaper.	Scientist18	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
333	Nükleer santralden çıkan radyasyonla röntgenden alınan radyasyon karşılaştırılıyor hep. Bu yanlıştır. Röntgen elektromanyetik dalgadır. Vücuttan bir saniye içinde geçip gider. Diğerinde ise izotoplar sindirim yoluyla, hava yoluyla vücuda girer.	Radiation from a nuclear power plant is always compared with radiation from an x-ray device. This is wrong. An x-ray is an electromagnetic wave. It goes through your body within a second. In the other, isotopes enter the body by air, by digestion.	Scientist14	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
334	Enerji yaşam için üretilir. Yaşamı tehdit eden bir enerji olmamalıdır. Öncelik yaşam olmalıdır.	Energy is produced for life. There should not be a life-threatening energy. Priority should be on life.	AntiNukeNGO11	Anti-Nuclear NGOs / Activists / Journalists	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
335	Bir santralin koruma kabuğu var ise endişe edilecek çok önemli bir risk yoktur. Önemli olan bu koruma kabuğunun yapılmasıdır. Eğer içerde bir kaza olursa kapatırsınız kabuğu, dışarı bir şey sızmaz. Bu kabuk uçak çarpmasına karşı bile dayanıklı yapılıyor. Çernobilde bu kabuk yoktu.	If there is a containment shell in a nuclear plant, there is no risk to worry about. The important thing is to construct this containment shell. If there is an accident inside, you will close the shell, nothing will leak out. This shells are constructed resistant even to aircraft crashes. Chernobyl did not have this shell.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
336	Biz karşı çıkacaksak önce Metzamor'un kapanması lazım. Ondan sonra da eski sovyetler birliğindeki kalan 11 tane santral kapatılmalıdır.	We need to stand up against Metzamor before we stand up (against Akkuyu) . After that, the remaining 11 plants in the old Soviet Union should also be closed down.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
337	Nükleer bombaya hepimiz karşıyız. Türkiye de yapmasın. Bizim böyle işlerle iştigal etmemesi lazım	We are all against the nuclear bomb. Turkey should not have it either. We should not engage in such activities	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
338	Nükleer enerji mevcut en çevreci enerjidir ama bir paradoks oluşturacak şekilde, çevreciler bu enerjiye karşıdırlar. (Bir kitaptan quote ediyor)	Nuclear energy is the cleanest energy at present, but environmentalists are opposed to this energy form, which creates a paradox. (Quoting from a book)	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
339	Rüzgarın Türkiye'deki yüksek kapasite faktörü düşünüldüğünde, 20 Milyar dolar verip Sinop'a 4500 MW nükleer santral kuracağımıza, bu kdar para ile 22 bin MW rüzgar santrali kurabiliriz. Kapasite faktörü %25 olsa bile Nükleer'den daha karlı bir yatırımdır bu. Üstelik bu sadece ilk yatırım maliyetidir. Nükleerin beşikten mezara maliyetini düşünürsek daha fazla bir kapasite bile kurulabilir.	Considering the high capacity factor of wind in Turkey, instead of paying 20 billion dollars and installing a 4500 MW nuclear power plant in Sinop, we can build 22 thousand MW wind power with this money. Even if the capacity factor is 25%, this is a more profitable investment than Nuclear. Moreover, this is only the initial investment cost. Even more capacity can be set up if we consider the whole lifecycle cost of a nuclear plant.	Scientist18	Academics / Scientists / Experts	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
340	Gelişmiş ülkeler yeni nükleer santral kurmuyor çünkü adamlar çoktan kurmuş. Adamların ihtiyacı yok artık.	Developed countries do not build new nuclear power plants because they have already built. They do not need to build new plants anymore.	ProNukeNGO1	Pro-Nuclear NGOs	NükTe Platform ile NKP (Nükleer Karşıtı Platform) tartışma programı 2. Bölüm [Accessed 15.01.2017]
341	Ülkemizin 2023 hedefi, 1 trilyon dolar milli gelire, 500 milyar dolar ihracata, 25.000 dolar kişi başına milli gelire sahip olması, dünyanın ilk 10 ekonomisi arasına girmesi hedefi bulunmaktadır. Ekonominin lokomotifi olan enerji kaynaklarımıza bakıldığında, enerjide dışa bağımlılığımızın % 72 olduğu görülmektedir. Diğer	As part of its 2023, our country has the goals of 1 trillion dollars of GDP, 500 billion dollars exports, 25.000 dollars per capita income and becoming one of the top 10 economies in the world. When we look at the energy sources, which are the locomotives of our economy, we see that 72% of our energy consumption is dependent	Govn5	Governmental Agency	Ministry of Energy, Ülkemizde Nükleer Santraller [Accessed 15.01.2017]

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	yandan ülkemiz, dünyada elektrik talep artışında 1,4 milyara yakın nüfusu olan Çin'den sonra 75 milyon nüfuslu bir ülke olarak ikinci sırada, Avrupa'da ise 1. sırada yer almaktadır. Bu çerçevede, yerli ve yenilenebilir enerji kaynaklarını değerlendirmemiz gerektiği gibi, nükleer santrallerden üretilecek elektriği de enerji arz portföyümüze dahil etme zorunluluğumuz bulunmaktadır.	on the external resources. On the other hand, with a population of 75 million, our country has the second highest rate of increase in the energy demand in the world after China, which has a population close to 1.4, and the first highest rate in Europe. In this background, we have to assess the domestic and renewable energy sources, as well as the need to include the electricity to be generated from the nuclear power plants in our energy supply portfolio.			
342	Yenilenebilir enerji potansiyelimizin tamamı kullanılsa bile 2023 yılındaki elektrik tüketim miktarının ancak yarısı karşılanabilmektedir. Nükleer santraller baz yük santrallerdir, günün 24 saati çalışır. Rüzgar, güneş ve hidro elektrik gibi yenilenebilir enerji kaynakları iklim ve meteorolojik koşullara bağlıdır. Nükleer santrallerin kapasite faktörü % 90 iken, yenilenebilir enerji kaynaklarında bu, en fazla % 30-40 civarındadır. Nükleer santrallerin işletme ömrü 40 ila 60 yıl iken bu, rüzgar ve güneşte 15-20 yıl civarındadır. Ülkemizin nükleer santrallerle ilgili 2023 programı, iki nükleer santralin işletmeye alınması, üçüncüsünün de inşaatına başlanmasıdır.	Even if all our renewable energy potential is used, only half of the electricity consumption in 2023 can be met. Nuclear power plants are the base load plants and they operate 24 hours a day. Renewable energy sources such as wind, solar and hydroelectricity depend on the climate and meteorological conditions. While the capacity factor of nuclear power plants is 90%, it is around 30-40% in renewable energy sources. When the operating life of nuclear power plants is between 40 and 60 years, it is about 15-20 years for the wind and the sun. According to the 2023 program of our country, two nuclear power plants are to start operating, and the third is to start construction.	Govn5	Governmental Agency	Ministry of Energy, Ülkemizde Nükleer Santraller [Accessed 15.01.2017]
343	Dünyada nükleer santraller görünümüne bakıldığında ise; 31 ülkede 441 nükleer santralin bulunduğu ve 31 ülkenin içerisindeki 10 ülkenin nüfusunun İstanbul'dan az olduğu görülmektedir.Ayrıca, petrol ve doğal gaz zengini ülkelerde, G. Afrika'da da nükleer santral bulunmaktadır. Dünyada 66 nükleer santral inşaatı bulunurken, en fazla nükleer santralin bulunduğu ABD'de 5, elektrik üretiminde nükleerin en fazla payının olduğu Fransa'da 1, Çin'de 25, Birleşik Arap Emirliklerinde 4 nükleer santral inşaatı devam etmektedir. Ömrü dolan santralleri kapatan Almanya'da 9 santral çalışmaya devam ederken, Japonya'da kapatılan ve güvenlik değerlendirmeleri devam eden bazı nükleer santrallerin tekrar işletmeye alınması ile ilgili çalışmalar sürdürülmektedir.	When we look at the outlook of nuclear power plants in the world, we see that there are 441 nuclear power plants in 31 countries and it is seen that the population of 10 of those 31 countries is less than İstanbul. In addition, there are nuclear power plants in countries rich in oil and natural gas, for example in South Africa. The construction of 66 nuclear power plants in the world is continuing while the construction of 5 nuclear power plants in US, 1 in France (where the largest share of electricity power is produced by nuclear), 25 in China, and 4 in United Arab Emirates are ongoing. Germany continues to operate 9 power plants and shutting down those that reach their lifespan. Studies are underway to reclaim some nuclear power plants that have been shut down in Japan after undergoing safety evaluations.	Govn5	Governmental Agency	Ministry of Energy, Ülkemizde Nükleer Santraller [Accessed 15.01.2017]
344	Nükleer santraller sadece elektrik üretim tesisi olmayıp istihdam, insan kaynakları, teknoloji vb. gibi bir çok alanda da önemli katkılar sunmaktadır.Nükleer santrallerin inşaatının en yoğun olduğu zamanlarda 10.000 kişi çalışmakta, işletme döneminde 3500-4000 kişi çalışmakta, santral işleticisinde, ilgili kamu kurumlarında ve üniversitelerde nükleere ilişkin insan kaynakları kalitesi artmakta, sivil nükleer teknoloji ile birlikte bir çok alanda teknolojik birikim de artmaktadır.	Nuclear power plants are not only electricity generation facilities, but they also contribute to employment, human capital, and technology and so on. During the construction of nuclear power plants, 10,000 people are employed, and 3500-4000 people are employed during the operating period. The quality of human resources increases thanks to nuclear power. The technological know-how level in public institutions and universities is increasing. .	Govn5	Governmental Agency	Ministry of Energy, Ülkemizde Nükleer Santraller [Accessed 15.01.2017]
345	Nükleer santraller, çevre etkisi bakımından tercih edilmesi gereken bir seçenektir. Normal işletme koşulları altında çalışan nükleer reaktörlerin, dışarıya verebilecekleri en fazla radyoaktivite, normal doğal radyasyon seviyesinin %0,1-1'i ile sınırlandırılmış olup pratikteki durum ise bu sınırların da altındadır.	Nuclear power plants should be preferred due to their small environmental impact. The maximum radioactivity that nuclear plants emit under normal operating conditions is limited to 0.1-1% of the normal level of natural radiation, an in practice, it is even below these limits.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Enerji [Accessed 15.01.2017]
346	Elektrik üretiminin sürekliliği yönünden, nükleer santraller, termik ve hidrolik santrallere göre daha güvenli ve emre amadedir.	Due to the continuous electricity production, nuclear power plants are safer and more reliable than thermal and hydraulic power plants.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Enerji [Accessed 15.01.2017]
347	Nükleer güç santrallerini, sadece elektrik üretim tesisleri olarak değerlendirmemek gerekir. Yaklaşık 550 bin parçadan oluşan	Nuclear power plants should not be regarded only as electricity generation facilities. A nuclear power plant project, which consists	Govn5	Governmental Agency	Ministry of Energy, Nükleer Enerji [Accessed

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	nükleer santral projesi, diğer sektörlere de sağlayacağı dinamizmle ve istihdam imkanıyla birlikte ülkemiz sanayisine önemli derecede katma değer sunacaktır.	of approximately 550 thousand pieces, will provide value added to our country's industry and employment opportunities in other sectors as well.			15.01.2017]
348	Hızla artan elektrik talebini karşılamak ve ithalat bağımlılığından kaynaklı riskleri azaltmak üzere 2023 yılına kadar 2 nükleer güç santralının devreye alınması ve 3. santralın inşasına başlanması planlanmaktadır.	In order to meet the rapidly increasing demand for electricity and reduce the risks arising from import dependency, it is planned to start the operation of 2 nuclear power plants and the construction of the 3rd power plant by 2023.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Enerji [Accessed 15.01.2017]
349	Ülkemizde elektrik enerjisi arz ve talep projeksiyonlarına bağlı olarak, 2025 yılına kadar, nükleer enerji santrallerinin, elektrik enerjisi üretimi içerisindeki payının en az %5 seviyesine ulaşması hedeflenmektedir.	Depending on the supply and demand projections of electricity in our country, the share of nuclear power plants in electricity production is aimed to reach at least 5% of the total production.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Enerji [Accessed 15.01.2017]
350	Petrol ve doğalgazda dışa bağımlı ülkemizde, nükleer santral yokken petrol ve doğalgaz zengini ülkelerde bile (G. Afrika, Rusya, ABD, Kanada ve Meksika) nükleer santrallerin bulunması önemli ve anlamlıdır. Petrol, doğalgaz ve kömürdeki yüksek ithalat oranına karşılık, yenilenebilir enerji kaynaklarımızda kurulu güç potansiyelimiz yaklaşık 136.600 MW, kullanmakta olduğumuz 22.075 MW'dır. Geriye kalan kullanabileceğimiz yenilenebilir potansiyelimiz yaklaşık 114.525 MW olmasına karşın, kapasite faktörü nedeniyle fiilen kullanabileceğimiz, potansiyelimizin çok az bir kısmıdır	While there are no nuclear power plants in our country, which is dependent on imported oil and gas, it is important that there are nuclear power plants in countries rich in oil and gas, such as South Africa, Russia, USA, Canada and Mexico. Facing the high imports in petroleum, natural gas and coal, our potential in renewable energy sources is about 136,600 MW and we are using only 22,075 MW. Our remaining renewable potential is about 114.525 MW, but due to the capacity factor, a very small ratio of our potential can be used.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
351	Diğer yandan, ülkemizde rüzgar, güneş ve hidro gibi yenilenebilir enerji santrallerinin kurulabileceği alan, mevcut arazi kullanım durumlarından dolayı (konut, tarım, orman, kültürel ve doğal sit alanları, yollar vb.) sınırlıdır.	On the other hand, the area in which renewable energy plants such as wind, sun and hydro can be established in our country is limited due to the current land use situation (housing, agriculture, forests, cultural and natural sites, roads, etc.).	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
352	Yenilenebilir enerji, iklim koşullarına bağlı olarak sürekli değişkenlik göstermesi nedeniyle 4 mevsim, 7 gün 24 saat çalışan nükleer gibi baz yük santrallerine her halükarda ihtiyaç duyulmaktadır. •	Renewable energy depends on climatic conditions and the output is variable. For this reason, base-load plants such as nuclear, which operate 4 seasons, 24 hours a day, 7 days a week, are needed everywhere.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
353	Yenilenebilir enerji nükleerin rakibi değil, tamamlayıcısıdır.	Renewable energy is not a nuclear competitor, but a complement.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
354	Yenilenebilir enerji güvenlidir, ancak güvenilir (sürekli) değildir; alternatif enerji kaynağıdır. Nükleer santraller, mevsimden ve iklim şartlarından bağımsız olarak sürekli çalıştırılabilmektedir. Her zaman rüzgâr esmez, güneş her zaman ışımaz, yağış her zaman bol olmaz; ama nükleer santral her zaman çalışır. Yılda 8760 saatin, bakım dönemleri çıkarılırsa, nükleer santral yaklaşık 8000 saatinde çalışabilir, ama hidrolikte bu ortalama 4000 saat; rüzgarda ortalama 3000; güneşte ise ortalama 2500 saattir. 10.000 MW nükleer güç santraline karşılık gelmesi için, kapasite faktöründen dolayı, 30.000 MW rüzgar veya 38.000 MW güneş santrali kurulması gerekmektedir. Hidroelektrik için dünya ortalamasına bakıldığında kapasite faktörü %44 civarındadır. Türkiye'de hidroelektrik santrallerin son 25 yıllık ortalama kapasite faktörü ise % 42'dir.	Renewable energy is safe, but not reliable (continuous), it is an alternative energy source. Nuclear power plants can operate continuously regardless of season and climate conditions. The wind does not always blow, the sun is not always bright, the precipitation is not always abundant, but the nuclear plant always works. Out of 8760 hours per year, the nuclear power plant can operate at about 8000 hours (excluding the maintenance periods), but average is 4000 hours in hydro, average 3000 in the wind and 2500 hours on the sun. Because of the capacity factor, 30,000 MW wind or 38,000 MW solar power plant must be installed in order to correspond to the 10,000 MW nuclear power plant. When the world average for hydroelectricity is taken into account, the capacity factor is around 44%. The average capacity factor of hydroelectric power plants in Turkey over the last 25 years is 42%.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
355	Rüzgar enerjisinde süreklilik olmaması, depolanabilir enerji kaynaklarıyla, bir diğer adıyla "baz yük santralleriyle" dengelemeyi gerektirmektedir. Bu nedenle toplam şebekenin %20'den fazlası	The lack of continuity in wind energy requires balancing with storable energy sources, also called "base load plants". For this reason, network problems arise when the total grid is supplied by	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
	rüzgardan sağlandığında şebeke problemleri ortaya çıkmaktadır.	more than 20% with the wind.			
356	Nükleer enerji santralleri ile yenilenebilir enerji santralleri kapladıkları alan açısından karşılaştırıldığında; Akkuyu NGS yerine rüzgar santrali kuracak olursak Yalova'nın tamamının rüzgar panelleri ile kaplanması, hidroelektrik santrali kuracak olursak Düzce'nin tamamının da sular altında kalması gerekecekti.	When we compare nuclear plants with other renewable sources: if we were to set up wind turbines instead of Akkuyu NPP, the wind panels would have to cover the entire land of Yalova, or if we were to set up a hydroelectric power plant, the whole city of Düzce would be submerged.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
357	Akkuyu ve Sinop'ta kurulacak nükleer santraller sayesinde 16 milyar metreküp doğalgaz ithal etmekten ve dolayısıyla doğalgaza yıllık 7.2 milyar dolar ödemekten kurtulunacaktır.	With Akkuyu and the nuclear power plant to be established in Sinop, we will save 16 billion cubic meters of natural gas imports and therefore pay $7.2 billion less for natural gas annually	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
358	Akkuyu nükleer santral projesinde firmalarımız, sadece inşaat malzemeleri değil, kritik nükleer güvenlikle ilgili olmayan, makine-ekipman üretimi sürecinde de yer alacaktır. Bu da yaklaşık 8 milyar dolarlık miktara denk gelmektedir. G. Kore örneğinde olduğu gibi nükleer teknolojiye sahip olmak için hem belirli bir zaman geçmesi ve hem de somut olarak nükleer santral projesine başlamak gerekmektedir.	Akkuyu nuclear power plant projects will not only include construction materials, but also machinery and equipment production, which is not directly related to critical nuclear safety. This amounts to about 8 billion dollars. In order to have nuclear technology as it is in the case of South Korea, we need a concrete nuclear plant project and some time to pass.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
359	Dünyada pek çok turizm ülkesi nükleer enerjiden faydalanmaktadır ve yine birçok nükleer reaktör turizm merkezlerine Akkuyu sahasında olduğundan çok daha yakındır. Akkuyu sahasının Antalya'ya uzaklığı 300 km civarındadır. Romanya'da bulunan Cernovoda santrali İstanbul'a 400 km uzaklıktadır.	Many countries with major touristic destinations in the world are benefiting from nuclear energy and many nuclear reactors are much closer to tourism centers than Akkuyu. Akkuyu is about 300 km away from Antalya. The Cernovoda plant in Romania is 400 km away from Istanbul.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
360	Ayrıca, Fransa'da bulunan ve dünya kültür miras listesinde yer alan Loire Nehri üzerinde 14 adet nükleer güç santrali bulunmaktadır ve bu nehir üzerinde bot ile gezinti yapılması, çok yaygın turizm aktivitesidir (Şekil 12). Aynı zamanda nehrin etrafındaki arazilerde tarımsal faaliyetler de yürütülmektedir.	In addition, there are 14 nuclear power plants on the Loire River in France, which is on the world cultural heritage list, and boating on this river is a very common tourist activity (Figure 12). At the same time agricultural activities are being carried out in the fields around the river.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
361	Nükleer santrallerin tarıma etkisi ile ilgili olarak, en fazla nükleer güç santraline sahip olan ABD'nin, 42,8 milyar dolarla dünyada en fazla tarımsal ürün ihracatı yapan ülke olduğu bilinmektedir (Tablo 5). Yine, elektrik üretiminde nükleer enerjinin payı en fazla olan (%75) Fransa da, en fazla tarımsal ürün ihracatı yapan 2. ülkedir. Dünyada en fazla tarımsal ürün ihracatı yapan ülkelerin yer aldığı Tablo 5, dünyada bulunan nükleer reaktörlerin yarısından fazlasının bu ülkelerde kurulu olduğunu göstermektedir.	Regarding the agricultural effect of nuclear power plants, it is known that the US, which has the largest number of nuclear power plants, is the country with the largest agricultural exports in the world with 42.8 billion dollars (Table 5). Again, the largest share of nuclear energy in electricity generation (75%) is France, the second largest exporter of agricultural products. Table 5 shows that more than half of the world's nuclear reactors are based in the countries with the highest agricultural exports in the world.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
362	Nükleer enerji çalışmalarına 1956 yılında birlikte başladığımız G. Kore nükleer teknolojiyi 20 yıllık süre içerisinde yerelleştirmiş ve bugün Birleşik Arap Emirliklerine nükleer santral inşa etmektedir.	Turkey and South Korea started to work on nuclear technology around the same time in 1956. South Korea has internalized and localized nuclear technology in 20 years and is now building nuclear plants in UAE.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Güç Santralleri ve Türkiye [Accessed 15.01.2017]
363	Nükleer enerji, ülkemiz için enerji arz güvenliğimizin sağlanması, enerji ithal bağımlılığımızın ve cari açığın azaltılması bakımından büyük önem taşımaktadır. Fransa'nın petrol (%99) ve doğal gaz (%97) ithal oranları ülkemizdeki gibi yüksek olmasına rağmen, Fransa'nın enerji ithal bağımlılık oranı % 50 iken, ülkemizde bu oran %72 civarındadır. Bunun temel sebebi, Fransa'da elektrik üretiminde nükleer enerjinin payının % 75 olmasıdır.	Nuclear power is of great importance in terms of the provision of energy supply security, reducing our dependence on energy imports and the current account deficit. France's energy import dependency ratio is 50%, and this ratio is around 72% in our country, even though France's imports of petroleum (99%) and natural gas (97%) are as high as in our country. The main reason for this is that nuclear energy has 75% of the share in electricity generation in France.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
364	Elektrik tüketim talebinin karşılanmasının yanı sıra, Türkiye'nin 2023 yılına kadar, 500 milyar dolar ihracat gerçekleştirmesi, kişi başına 25.000 dolar milli gelire sahip olması ve 2 trilyon dolar milli gelir ile dünyanın ilk 10 ekonomisi arasında yer alabilmesi için sürekli enerji	In addition to meeting the electricity consumption demand, Turkey has no other option but to build a nuclear power plant that supplies continuous energy if it wants to achieve 500 billion dollar export, to have a GDP per capita of 25,000 dollars and to be among the world's	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed

ArgID	Argument	Translation	Who	Role	Source
	üreten nükleer güç santrallerini inşa etmesi bir seçenek değil, zorunluluk olarak karşımıza çıkmaktadır.	top 10 economies with 2 trillion dollars of national income until 2023.			15.01.2017]
365	Gelecekte enerji arz güvenliğinin sağlanması için yeni kaynaklara ihtiyaç duyulacaktır. Bu kaynakların her an kullanıma hazır bulunmasının yanı sıra ucuz, çevre dostu ve güvenilir (sürekli) olması da gerekmektedir. Bütün bu özellikleri taşıyan nükleer enerji, sürdürülebilir enerji stratejilerinde büyük öneme sahiptir	New resources will be needed to secure energy supply security in the future. In addition to being available at all times, these resources need to be cheap, environmentally friendly and reliable. Nuclear energy, with all these features, has great prominence in sustainable energy strategies.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
366	Nükleer santraller, yenilenebilir enerji kaynaklı santraller gibi dış koşullara (iklim koşullarına), kömür santralleri gibi yakıtın kalitesine, petrol ve doğalgaz santralleri gibi rezerv miktarına bağlı olmadığı için elektrik üretiminde süreklilik arz eder.	Nuclear power plants are stable in electricity generation because they do not depend on external conditions such as renewable energy sources (climate conditions), the quality of fuel like in coal power plants, the amount of reserves like in petroleum and natural gas plants.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
367	Nükleer enerji üretim zinciri, tümüyle ele alındığında sera gazı salımı konusunda en temiz seçenektir.	The nuclear power generation chain is the cleanest option when it comes to greenhouse gas emissions.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
368	1 kilogram uranyumdan elde edilen enerji için, 3.000.000 kilogram (3000 ton, 25 adet ağır yük tren vagonu13) kömür veya 2.700.000 litre (2700 metreküp, 135 adet büyük boy akaryakıt tankeri) petrol gerekmektedir. Bu kadar az miktarda uranyum kaynağından yüksek miktarda enerji üretildiğinden nükleer santrallerin atık miktarı da bu oranda fosil yakıtlardan çok daha azdır.	3,000,000 kilograms (3000 tons, 25 heavy freight train wagons13) of coal or 2,700,000 liters (2700 cubic meters, 135 large fuel tankers) of oil are required for the energy obtained from 1 kilogram of uranium. Since so much energy is generated from so little uranium sources, the waste amount of nuclear power plants is much less than that of fossil fuels.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
369	Nükleer santrallerden çıkan atık miktarının çok az olmasıyla çok az yer kaplayacağından yer üstündeki depolarda güvenli bir şekilde depolanabilmektedirler	Since the amount of waste generated from nuclear power plants is very small, they can be safely stored in the reservoirs on the ground because they occupy very little space.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
370	Nükleer yakıt maliyeti ve bunun sonucu olarak fiyatı istikrarlı sayılabilecek seviyededir.	The cost of nuclear fuel and, as a result, the price of electricity produced from NPPs are at a considerably stable level	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
371	Yeni istihdam alanları oluşturarak ülke ekonomisine katkı sağlar.	It contributes to the country's economy by creating new employment areas.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
372	Nükleer enerjiden elde edilecek enerji, ülke enerji üretim portföyüne çeşitlilik getirir.	The energy that will be generated from nuclear energy will diversify the country's energy production portfolio	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
373	Güvenlik ve kalite kültürünün ülkemizde yerleşmesine ve gelişmesine katkı sağlar.	It contributes to the development of safety and quality culture in our country.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
374	Santral işletme ömrü diğer santral türlerine göre daha uzundur.	The operation lifetime is longer than other plant types	Govn5	Governmenta	Ministry of Energy, Nükleer

ArgID	Argument	Translation	Who	Role	Source
				l Agency	Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
375	Nükleer güç santralleri uzun yıllar boyunca ihtiyaç duyulacak nükleer yakıtları kolayca ve ekonomik depolamaya imkan verdiğinden enerji arz güvenliğinin sağlanmasına önemli katkı sağlar.	Nuclear power plants make an important contribution to the provision of energy supply security in that they allow easy and economical storage of nuclear fuels, which will be needed for many years to come	Govn5	Governmenta l Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
376	NGS, baz yük santralleridir ve sürekli enerji üretme kabiliyetine sahiptir. Diğer baz yük santralleri ise jeotermal ve fosil (Petrol, Taş Kömürü, Linyit ve Doğalgaz) yakıtlı santralleridir. Jeotermalin toplam kapasitesinin küçük olmasından, fosil yakıtlı santrallerin ise çevreye olan olumsuz etkilerinden dolayı nükleer santraller, baz yük santrali olarak avantajlıdır. Ayrıca, linyit dışındaki fosil kaynaklar ithal kaynaklardır ve dışa bağımlılığımızı artırmaktadır	Nuclear power plants are base load plants and have the ability to produce stable energy. Other base load plants are geothermal and fossil (Petrol, Stone coal, Lignite and Natural gas) fuelled power plants. Since the total capacity of geothermal is small and fossil-fuelled power plants have negative effects on the environment, nuclear power plants are advantageous as base load power plants. In addition, fossil resources other than lignite are imported sources and increase our dependency on the outside.	Govn5	Governmenta l Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
377	Büyük sanayi yatırımcıları tesislerini, 50-60 yıllık elektrik enerjisini garanti gördükleri bölgelere rahatlıkla kurmaları olacaktır. Bu, Türkiye'nin endüstriyel kalkınması açısından önemli bir avantaj sağlayacaktır	Large industrial investors will easily install their facilities in the regions where they are guaranteed 50-60 years of electricity energy. This will provide a significant advantage for Turkey's industrial development	Business9	Business Groups	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
378	1980'lerin sonuna doğru nükleer enerjiye olan talep artışı azalma eğilimine geçti ve 1990'lı yıllardan itibaren durağanlaştı. Bunun nedeni Three Mile Island (1979, ABD) ve Çernobil (1986, Sovyetler Birliği) nükleer kazalarının olduğu söylense de asıl etkenler dünya ekonomisinde oluşan yavaşlama ve doğalgazın enerji piyasasına girmesidir.	Towards the end of the 1980s, the demand for nuclear energy declined and stabilized since the 1990s. Although the main reason for this is alleged to be the nuclear accidents in Three Mile Island (1979, USA) and Chernobyl (1986, Soviet Union), the real reasons are the slowdown in the world economy and the introduction of natural gas into the energy market.	Govn5	Governmenta l Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
379	2000'li yıllardan itibaren ise nükleer güç sayısında değişim olmamasına rağmen kurulu güçte artış gerçekleşti. Bunun ana nedeni, yeni kurulan ya da revize edilen nükleer reaktörlerin kapasitelerinin artırılmış olmasıdır	Although the number of nuclear power has not changed since the year 2000, the installed capacity has increased. The main reason for this is that the capacities of newly established or revised nuclear reactors have increased.	Govn5	Governmenta l Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
380	Nükleer güç santralleri işletimdeyken atmosfere sera gazlarını salmadığından kısa ve uzun vadede sera gazı salımı konusunda en temiz seçenektir.	Since nuclear power plants do not release greenhouse gases in the atmosphere while operating, it is the cleanest option for greenhouse gas emissions in short and long run.	Govn5	Governmenta l Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
381	Ülkelerin ekonomik gelişimlerini sürdürmesi bakımından temel girdi durumunda olan enerji, çok boyutlu ve uzun soluklu politika ve stratejilerin uygulanmasını gerektiren bir alan olarak önemini gün geçtikçe artırmaktadır. Dolayısıyla, enerji ile ilgili konuların; hükümet politikası olarak değil, bir devlet politikası olarak ele alınıp değerlendirilmesi gerekmektedir	Energy, which is the main input for the continuation of the economic development of the countries, has become increasingly important as an area that requires the implementation of multi-dimensional and long-term policies and strategies. Therefore, energy issues need to be considered and assessed as a state policy rather than a governmental policy.	Govn5	Governmenta l Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
382	Enerji arz güvenliği, enerji sektörüne ilişkin tartışma gündeminin temelini oluşturmaktadır.	Security of energy supply is the basis of the discussion agenda for the energy sector.	Govn5	Governmenta l Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
383	Yaşanan ekonomik gelişme ve artan refah seviyesinin sonucu olarak ülkemizin enerji sektörünün her alanında hızlı bir talep artışı olduğu gözlemlenmektedir. Bu talebi karşılamak için her yıl 4.000-5.000 MW'lık bir yatırım yapılması gerekmektedir	Because of economic development and increasing level of prosperity, a rapid increase in demand in every aspect of our country's energy sector is observed. An annual investment of 4,000-5,000 MW is required to meet this demand.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
384	Temel enerji politikamız; • Dışa bağımlılığın en alt düzeye indirilmesi, • Kaynak çeşitliliğine, yerli ve yenilenebilir kaynaklara önem verilmesi, • Çevre üzerindeki etkilerin en aza indirilmesi, • Enerjinin verimli üretilmesi ve kullanılması, • Serbest piyasa uygulamaları içinde kamu ve özel kesim imkanlarının harekete geçirilmesi, • Ülke enerji ihtiyaçlarını güvenli, sürekli ve en düşük maliyet ve en az çevresel etkilerle karşılayacak tedbirleri alan politikaların hayata geçirilmesi, şeklinde özetlenebilir.	Our main energy policy is as follows: • Minimizing external dependence, • Prioritixing resource diversity, local and renewable resources, • Reduction of environmental impacts, • The efficient production and use of energy, • Mobilization of public and private sector opportunities in free market applications, • Establishment of policies that take measures to meet the country's energy needs safely, continuously, at lowest cost and with least environmental impact	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
385	Nükleer santralin kurulması ile hem doğalgaz ithalatı azaltılmış; hem de baz santral olarak kurulan Doğalgaz Kombine Çevrim Santrallerinin üreteceği karbondioksitin atmosfere verilmesi engellenmiş olacaktır.	With the establishment of the nuclear power plant, imports of natural gas will be reduced and the generation of carbon dioxide from the natural gas combined power plants established as base power plants will be prevented.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
386	Nükleer santrallerden alacağımız radyasyon ise doğal radyasyona göre çok daha küçüktür. Nükleer santral yakınında yaşayan bir kişinin alacağı radyasyon miktarı, doğadan kaynaklanan radyasyon miktarının 1/300 (üçyüzde biri) kadardır	Radiation from nuclear power plants is much smaller than natural radiation. The amount of radiation that a person living near a nuclear power plant receives will be 1/300 (one/three hundredths) of the amount of radiation from nature.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
387	Ayrıca, kömür (termik) santraline yakın yaşayan bir kişi kömür içerisindeki doğal olarak bulunan radyoaktif elementlerin duman ve kül olarak etrafa yayılmasıyla, nükleer santrale yakın yaşayan bir kişiye göre 3 kat daha fazla radyasyona maruz kalır.	In addition, a person living close to a coal (thermal) plant is exposed to radiation three times more radiation than a person living close to the nuclear plant, as the naturally occurring radioactive elements in the coal spread around as smoke and ash.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
388	EPDK'dan elektrik üretim lisansı alınması sırasında Çevre ve Şehircilik Bakanlığı'ndan radyolojik ve radyolojik olmayan tüm çevresel etkileri de değerlendiren Çevresel Etki Değerlendirme (ÇED) için olumlu kararın alınmasını da kapsamaktadır. Söz konusu izinlerin alınamaması ya da denetimlerde olumsuz sonuçların çıkması halinde santralin inşasına ve faaliyetlerin sürdürülmesine izin verilmeyecektir.	Obtaining the electricity generation license from EPDK (Energy Market Regulatory Authority) necessitates a positive decision by the Ministry of Environment for Environmental Impact Assessment (EIA), which evaluates all non-radiological and radiological impacts. In case the said permissions cannot be obtained or the negative results are observed in the inspections, the construction of the plant and the activities will not be allowed to continue.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
389	Santralin soğutma suyu sistemi, deniz ve karada ekolojik sisteme olabilecek muhtemel etkileri incelenerek ekolojik dengeyi değiştirmeyecek ve deniz suyu sıcaklığını Çevre ve Şehircilik Bakanlığı'nın ilgili mevzuatında belirtilen limitleri geçmeyecek şekilde tasarlanacaktır. Isınarak tekrar denize verilen suyun sıcaklığı 2872 sayılı Çevre Kanunu ve ilgili mevzuata uygun olacaktır. Bu durumda, deşarjın yapıldığı deniz suyunun "o bölgede yaşayan balık ve diğer deniz canlılarını yok edebilecek seviyede" olması söz konusu değildir	The cooling water system of the power plant will not change the ecological balance and will be designed to not exceed the limits specified in the relevant legislation of the Ministry of Environment and Urbanization, which will examine the possible effects on marine and land ecological systems. The temperature of the water which will be released back to the sea will comply with the Environmental Law No. 2872 and related legislation. As a result, it is not possible for the discharged water to kill the fish and marine animals living in the region.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
390	58 adet nükleer reaktörle, kullandığı elektriğin % 75' ini nükleer enerjiden karşılayan Fransa'da, yaklaşık 1000 km uzunluğundaki	There are 14 nuclear reactors (Figure 3) on the Loire River, about 1000 km long, in France, where 58 nuclear reactors meet 75% of	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde

ArgID	Argument	Translation	Who	Role	Source
	Loire nehri üzerinde 14 adet nükleer reaktör (Şekil 3) bulunmaktadır. Loire nehri üzerinde bulunan nükleer santraller soğutma suyunu nehirden alıp, tekrar nehre vermektedir. Buna rağmen bu nehrin suyu sulamada kullanılmakta, denize döküldüğü koyda balık tutulmakta ve yüzülmektedir.	the electricity used. Nuclear plants located on the Loire River take the cooling water from the river and dispose it to the river. Despite this, the river is used for irrigation and swimming.			Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
391	Dünyada pek çok turizm ülkesi nükleer enerjiden faydalanmaktadır ve yine birçok nükleer reaktör turizm merkezlerine Akkuyu sahasında olduğundan çok daha yakındır. Akkuyu sahasının Antalya'ya uzaklığı 300 km civarındadır. Bulgaristan'da bulunan Belene santrali İstanbul'a 400 km, Romanya'daki Cernovoda Santralı ise 370 km uzaklıktadır. Bu santrallerin en çok turist çeken şehrimiz olan İstanbul'a gelen turist sayısına herhangi bir etkisi bulunmamaktadır.	Many tourism countries in the world are benefiting from nuclear energy and many nuclear reactors are much closer to tourism centers than Akkuyu. Akkuyu is about 300 km away from Antalya. The Belene plant in Bulgaria is 400 km from Istanbul and the Cernovoda plant in Romania is 370 km away. These plants have no effect on the number of tourists coming to Istanbul, the city that attracts the most tourists to Turkey.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
392	Nükleer santrallerin tarıma etkisi ile ilgili olarak, en fazla nükleer güç santraline sahip olan ABD'nin, 42,8 milyar dolarla dünyada en fazla tarımsal ürün ihracatı yapan ülke olduğu bilinmektedir	It is known that the US, which has the highest number of nuclear power plants, is the country with the largest agricultural exports in the world, with an agricultural export of 42.8 billion dollars	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
393	Dünya üzerindeki tüm nükleer santrallerin şu ana kadar (yaklaşık 40 yıllık atık) biriken toplam nükleer atık(kullanılmış yakıt) yaklaşık olarak 260.000 ton olup, bu atık 5 metre yüksekliğinde yan yana konulduğunda, 4 futbol sahasını dolduracak hacimdedir	The total nuclear waste (spent fuel) that has accumulated so far in all the nuclear power plants on Earth (about 40 years of waste) is about 260,000 tons and when this waste is placed side by side it will be 5 meters high, filling 4 football fields	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
394	Akkuyu NGS Projesi ile yaklaşık 20 milyar ABD Dolarlık Rus sermayesi, tüm riskler Rus tarafında olmak kaydıyla Türkiye'ye aktarılmaktadır. Söz konusu Proje kapsamında yaklaşık 4.800 MWe kurulu güç kapasite ile yıllık 40 milyar kWh elektrik üretilecektir. Bu üretilecek elektrik sayesinde doğalgaz ithalatında yıllık yaklaşık 8 milyar metreküplük miktarda, 3,6 milyar ABD Doları tutarında bir azalma olacaktır. Bu durum enerjide dışa bağımlılığımızı azaltan bir etki oluşturacaktır.	With Akkuyu Project, approximately $20 billion Russian capital is transferred to Turkey with all risks handled by the Russian side. The project will generate 40 billion kWh of electricity annually with an installed capacity of approximately 4,800 MWe. With this electricity generation, natural gas imports will be reduced by approximately US $ 3.6 billion annually, amounting to approximately 8 billion cubic meters. This will have an effect of reducing our dependence on imported energy.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
395	Öte yandan yakıt konusunda, yakıtın Rusya Federasyonu'ndan alınmasına ilişkin bir zorunluluk mevcut değildir. Buna ilave olarak, Anlaşma nükleer yakıtın zaman içerisinde Türkiye'de üretilmesine de imkân vermektedir. . İlk etapta kurulacak 4 ünite, nükleer yakıt tesisi kurmak için ekonomik açıdan yeterli değildir. Ancak ülkemizdeki nükleer santral sayısı arttıkça (en az 8 ünite) ülkemizde nükleer yakıt üretimi mümkün olacaktır. Akkuyu NGS'nin yakıtları anlaşma çerçevesinde uluslararası piyasalardan uzun dönemli kontratlarla temin edilecektir. Pratikte nükleer yakıtın Rusya'dan gelmesi öngörülmekle beraber hukuken böyle bir zorunluluk yoktur	On the other hand, there is no obligation to buy the fuel from Russian Federation. In addition, the agreement allows Turkey to produce its nuclear fuel after a while. The first 4 units will not be economically sufficient to build a nuclear fuel facility. However, as the number of nuclear power plants in our country increases (at least 8 units), nuclear fuel production will be possible in our country. Akkuyu nuclear plant's fuels will be supplied with long-term contracts from international markets in the framework of the agreement. In practice, it is foreseen that nuclear fuel will come from Russia, but there is no legal obligation.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
396	NGS kurulması çalışmaları elektrik enerjisi üretimi amacıyla yürütülen çalışmalar olmakla beraber, yaklaşık 550 bin parçadan oluşan bir proje olmasından dolayı farklı sanayi ve hizmet sektörlerini de ilgilendiren projedir. Bu durumda, NGS inşasında, işletiminde, bakım ve onarımında kendi alanlarında deneyimli Türk şirketlerin de görev alabileceği düşünülmektedir.	Although the nuclear plant is considered to be involved mainly in electricity production, it also involves the industry and service sectors as it is a project constituting of 550 thousand pieces. In this case, it is thought that Turkish companies which are experienced in their field in nuclear plant construction, operation, maintenance and repair can take part.	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale İlişkin Bilgiler [Accessed 15.01.2017]
397	VVER-1200 tipi reaktörler, işletimde olan VVER-1000 tipi reaktörlerin mevcut işletme ömrü, gücü, termal verimi ve güvenlik sistemleri artırılmış modelleridir. İşletimde olan bir reaktörün, hazırlık ve inşa	VVER-1200 type reactors are the improved models of VVER-1000 type reactors with regard to current operating life, power, thermal efficiency and safety systems. Taking into account the preparation	Govn5	Governmental Agency	Ministry of Energy, Nükleer Santraller ve Ülkemizde Kurulacak Nükleer Santrale

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	süreleri dikkate alındığında en az 15 yıl eski teknolojiler üzerine kurulu bulunmasından dolayı TAEK, "Nükleer Güç Santrallerinin Lisanslanmasına İlişkin Yönerge'"sinde yer aldığı üzere var olan bir tasarım üzerine yapılan iyileştirmelere sahip yeni tasarımları kabul etmektedir	and construction period and considering that a 15 year-old technology is being installed in a running reactor, TAEK accepts new designs with improvements on an existing design, as included in the "Directive on the Licensing of Nuclear Power Plants".			İlişkin Bilgiler [Accessed 15.01.2017]
398	Dünyada nükleer santral sayıları hızla azalmamakta aksine artmaktadır.	The number of nuclear power plants in the world does not decrease rapidly but increases.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 1: Dünyada nükleer santral sayıları hızla azalmamakta aksine artmaktadır. 15 Haziran 2007 [Accessed 15.01.2017]
399	ABD ve Avrupa nükleer santral yapımından vazgeçmemiştir. İhtiyaçları kadar yapmaları ve şu anda yapmamalarını "vazgeçtiler" olarak yorumlamak en azından bilimsel değildir. Elbette Avrupa da nükleer santrallerin yapım adetlerinin düşmesi ne denli doğal ise doğuda da nükleer santral yapımının hızlanması aynı şekilde doğaldır. Çünkü sanayi üretimi artık doğuya kaymış, Çin, Japonya, G.Kore, Tayvan üretimleri, dünyaya ucuzlukları sayesinde hâkim olmuştur. Bu da ucuz enerjiden geçen bir yoldur. Bu durum ayrıca Avrupa'daki enerji talebinin gerilemesine de neden olmaktadır. Örneğin İngiltere'nin sahip olduğu gemi ve çelik endüstrisi genelde Kore'ye kaymış, bu nedenle İngiltere'de düşen elektrik talebine karşılık G.Kore'de tam tersi artan enerji talebi olarak ortaya çıkmıştır.	The US and Europe have not given up on nuclear power plants. They now make only as many as they need and it is not scientific to interpret this as "total abandonment". Of course, the decline in the production of nuclear power plants in Europe is natural, and the acceleration of the construction of nuclear power plants in the east is equally natural. Because industrial production has now shifted to the east; Chinese, Japanese, South Korean, Taiwanese production has dominated the world by their low costs, which is possible through cheap energy. This situation also causes the decline of energy demand in Europe. For example, shipbuilding and steel industries of the United Kingdom, has shifted to Korea, which is why the demand for electricity in S.Korea is increasing, as opposed to the demand for electricity in the UK, which is decreasing.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 2: ABD ve Avrupa nükleer santral yapımından vazgeçmemiştir. Çünkü…. 15 Haziran 2007 [Accessed 15.01.2017]
400	Bugün dünyada nükleer enerji, kullanıldığı ülke için ULUSAL bir kaynaktır. Çünkü yakıt için Uranyum madeni o ülkede bulunmasa bile temini konusundaki risk Petrol, D.gaz ve kömüre nazaran oldukça düşüktür. 15-20 yıllık yakıt ihtiyacını stoklamanın en kolay ve en ucuz yolu sadece nükleerdedir. Kaplayacağı hacim ise 2-3 TIR hacmidir. Siz hiç 20 yıllık yakıtı böyle kolay stoklaya cağınız bir enerji hammaddesi duydunuz mu? Bir de ülkemizde tesadüfen bulunmuş 10.000 ton civarındaki Uranyum rezervimizi düşünür isek riskimizin ne denli düşük olduğunu anlamamız oldukça kolaylaşır.	Today in the world, nuclear energy is a national resource for the country in which it is used. Because even if the uranium mine is not found in that country, the risk for its provision is very low compared to petroleum, natural gas and the coal. The easiest and cheapest way to stock your 15-20 year fuel needs is just nuclear. It will be only as big as 2-3 trucks. Have you ever heard of an energy raw material that you could easily stock up on 20 years? And if we think about 10,000 tons of uranium reserves that were found incidentally in our country, it is very easy to understand how low our risk is.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 3: "Nükleer Enerji Dışa bağımlıdır" yalanının gerçeği nedir? 15 Haziran 2007 [Accessed 15.01.2017]
401	Bir nükleer santralin atom bombası gibi bir patlama olması olasılığı teorik ve pratik olarak imkânsızdır. Yani SIFIRDIR. Çünkü bir atom bombasının oluşması için mutlaka gerekli olan İKİ şart ortamda, yani nükleer santral içinde asla mevcut değildir.	It is theoretically and practically impossible for a nuclear plant to explode like an atomic bomb. It is ZERO. Because the TWO conditions absolutely necessary for the formation of an atomic bomb are never present in a nuclear power plant.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 4: "Nükleer Santral atom bombası gibi patlamaz"; çünkü… 15 Haziran 2007 [Accessed 15.01.2017]
402	Önce Amerika'nın 1995-2005 yılları arası kullanılan yakıt türüne bağlı olarak elde edilen elektriğin maliyet tablosuna bakalım. Bu tablo en ucuz elektriğin Nükleerden elde edildiği ve en pahalı elektriğin ise petrolden elde edildiği gerçeğini "yıllara" göre sergilemektedir. Tabloda olmayan 2006 yılı ve sonrasındaki durum ise şöyledir; Pahalılıkta D.Gaz birinci sırayı, petrolde ikinci sırayı almıştır. Kömür üçüncü ve nükleer de dördüncü sıradadır. Görüldüğü gibi en ucuz elektrik nükleerden elde edilmektedir. G.Kore eski teknoloji bakanının Prof. Chung İstanbul toplantısında	Let's first look at the cost table of the electricity obtained from the different fuel types used between 1995 and 2005 in America. This table shows that through the years the cheapest electricity has been obtained from nuclear and the most expensive electricity has been obtained from petroleum. What happened in 2006 and later is as follows: Natural gas is the most expensive, followed by petroleum. Coal comes next and the last is nuclear. As you can see, nuclear is the cheapest. The ex-technology minister of S. Korea Prof. Chung said in a meeting in Istanbul that electricity generated from $ 4.2	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 5: En pahalı elektrik nükleerden elde edilir; yalanının gerçeği nedir? 15 Haziran 2007 [Accessed 15.01.2017]

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	açıkladığı bir gerçek ise şudur; 4.2 milyar dolarlık doğalgazdan elde edilen elektrik sadece 200 milyon dolarlık Uranyum çubuktan elde edilir!!!	billion of natural gas could be produced from Uranium rods of only $ 200 million.			
403	Çevre konusundaki kriterleri ana enerji santralleri içinde en çok Nükleer Santraller sağlar. Öncelikle Nükleer santrallerin "BACASIZ" olduğunu söyleyerek konuya girelim. Bu nedenden dolayı termik santraller gibi karbondioksit, azot oksit ve karbon monoksit gibi gazlar ve kül çıkartmaz.	Among all main power plants, nuclear plants are the ones that meet the environmental criteria the best. I should make my point clear by saying that nuclear plants DO NOT HAVE A CHIMNEY, which is why there is no emission of ash and gases such as carbon dioxide, nitrogen oxides and carbon monoxide.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 6: "Nükleer santral çevre düşmanıdır ve Radyasyon yayar" yalanının gerçeği nedir?... 15 Haziran 2007 [Accessed 15.01.2017]
404	1000 MW'lık bir nükleer santralde yılda ortalama 25 ton kullanılmış yakıt çubuğu atığı çıkar. Bunun hacimsel değeri bir yemek masası büyüklüğüdür. Bu çubuklar büyük bir havuzda yıllarca toplanır. Son gerçek ise daha da çarpıcıdır. Nükleer santraller yapılırken ileride çıkacak yakıt çubuklarını muhafaza edebilecek bir havuz mutlaka yapılır. Son yıllarda bu havuzların kapasitesi 50 yıllık atık yakıtları barındırabilecek kapasitede yapılmaya başlanmıştır. Kısaca ömrü biten santral ile birlikte bu havuz ve içindeki yakıt, sadece basit bir güvenlik koruması ile yıllarca yerinde muhafaza edilebilir. Zamanı ve ihtiyacı halinde atık yakıtlar, "yeniden değerlendirme tesisine" aktarılır. Böylece ortada tartışılacak konunun kalmadığı işin gerçek boyutudur.	At a 1000 MW nuclear power plant, there is an average of 25 tons of spent fuel rods a year. The volume of the rod is the size of a dining table. These rods are collected in a large pool for many years. The ultimate reality is even more striking. When a nuclear power plant is built, a pool is built to keep the fuel rods that will be used in the future. In recent years, the capacity of these pools have been geared to accommodate 50 years of waste fuels. In short, the power plant, this pool and the fuel in it can be kept in place for years with only a simple security measure. Waste fuels are transferred to the "re-evaluation facility" in time and on demand. So all problems regarding waste have been resolved.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 7: "Nükleer Santral atıkları ciddi bir sorundur" yalanının gerçeği nedir? 15 Haziran 2007 [Accessed 15.01.2017]
405	Enerji konusunda ülke gerçekleri maalesef iç açıcı değildir. Gerek su kapasitemizin yetersizliği ve gerekse de kömürlerimizin çok düşük kalorili olması nedeni ile 2010 yılından sonra bizleri ciddi bir enerji sıkıntısı beklemektedir.	The realities of energy in our country are far from heartening. After 2010 we will be dealing with a serious energy shortage because of the inadequacy of water capacity and the fact that our coal is very low calorie.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 10: "Türkiye'nin Nükleer Santral ihtiyacı yoktur" yalanının gerçeği nedir? 15 Haziran 2007 [Accessed 15.01.2017]
406	Bir nükleer santral yapımında 1500-2000 kişi çalışmaktadır. Aynı baraj yapımlarında olduğu gibi yörede işsizlik ciddi oran da düşer. 4-5 yıl sürecek bu santralın yapımında hâkim malzeme beton ve çelik konstrüksiyondur. Çoğunluğu yerli imkânlar ile karşılanacaktır. Az sayıda yabancı firma mühendislerinin de üretimin bitmesine kadar başında bulunmaları doğaldır.	1500-2000 people are working in the construction of a nuclear power plant. As in the dam constructions, unemployment in the region is seriously reduced. The most heavily used material is concrete and steel in the construction of this power plant, which will last 4-5 years. The majority of these needs will be met by local facilities. It is natural for a few foreign engineers to work until the end of the production process.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 9: "Bir Nükleer Santral maliyeti 15 milyar dolardır" Efsanesinin doğrusu nedir? 15 Haziran 2007 [Accessed 15.01.2017]
407	Yapıldığı bölgedeki işsizliğin çok azalacağı gibi birçok mühendis ve firma yetkililerinin o bölgeye yerleşmelerinden dolayı emlak ve arazi değerleri aniden yükselir. Bölgeye gelen kamyon ve malzeme miktarını düşünmek, sadece bu insanların barınma ve yiyecek sorunlarını bile çözümlemek amacı ile yöre halkına düşecek katma değeri hesaplamak bile oldukça zordur. Kısaca bu yatırımı bir demir-çelik, ya da bir baraj yatırımına benzetmek olasıdır. Ayrıca bölgesinden göçerek başka yörelere gidenler de bu tip projeler ile geriye memleketlerine rahatlıkla dönebilmektedirler.	Unemployment in the region will be greatly reduced and property and land values will suddenly rise because many engineers and company officials will settle in the region. It is difficult to think about how many trucks and materials will go to the region and to calculate the added value that the newcomers will bring to the locals, as they will need housing and food. In short, it is possible to compare this investment to an iron-steel or a dam investment. In addition, those who migrate to other regions from the region can easily return to their countries thanks to such projects.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Nukleer Yalanlar 9: "Bir Nükleer Santral maliyeti 15 milyar dolardır" Efsanesinin doğrusu nedir? 15 Haziran 2007 [Accessed 15.01.2017]
408	Alternatif enerji kaynakları ana (birincil, baz) enerji kaynakları yerine ikame edilemez. Çünkü Ana enerji kaynaklarının en önemli ölçütlerinden birisi olan "sürdürülebilirlik" ilkesini alternatif enerji kaynakları sağlamakta başarısız olmaktadırlar. Bu yüzdendir ki	Alternative energy sources cannot be substituted for main (primary, base) energy sources. Because alternative energy sources fail to provide the "sustainability" principle, one of the most important criteria of the main energy sources. In this respect, the energy that	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Enerji Çeşitleri Hakkında yalanlar 1: Yenilenebilir (Alternatif) kaynaklar enerji sorununu

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	kesintisiz ve hiçbir şarta bağlı olmaksızın elde edilebilen enerji türüne ana enerji (birincil) kaynakları denilmektedir. Alternatif zaten kelime olarak; "yeni seçenek" veya "yerine kullanılabilen" anlamı taşımaktadır. Ana enerji (birincil) kaynak kıstasları; **1**. Sürekli üretilebilmesi (süreklilik–sürdürülebilirlik ilkesi) **2**. Seviyeyi ayarlayabilmek (kontrol edilebilirlik) **3.** Depolanmayı gerektirmemektir.	can be obtained without interruption and without any contingency is called main energy (primary) sources. "Alternative", by definition, means "a new option" or a "substitute". Main energy (primary) resource criteria are; **1**. Continuous production (sustainability-sustainability principle) **2**. Adjustment of the level (controllability) **3**. Not requiring storage.			çözer efsanesinin doğrusu [Accessed 15.01.2017]
409	İşte Birecik baraj inşaatında binlerce aile bahçelerini ve tarlalarını kaybetti. Bir çok tarihi eser sular altında kaldı. 1994 yılından itibaren yapılan kamulaştırma tutarı ise 400 milyon YTL'yi aşmıştır. Ancak 2006 Eylül ayı itibari ile paralarını alamayan bir çok mağdur vardır. Baraj yapımının ne denli pahalı olduğunu düşünürken bir de 26 Haziran 2006 tarihli Milliyet gazetesindeki Yusufeli'ne bakın. (üstte) "O bağ ve bahçelerin hiçbiri kalmayacak. Baraj yapılınca ovalar yok olur ve kıraç dağlar insanlara kalır. İçimiz buruluyor Hasankeyf için Fırtına vadisi için ne diyelim? İçimiz burulsa da enerji uğruna sineye mi çekeceğiz? Karar sizin. Ancak kömürdeki durumunda hidrolikten pek farklı olmadığını sakın unutmayınız.!	In the construction of the Birecik dam, thousands of families lost their gardens and agricultural land. Many historical monuments were flooded. Since 1994, the amount of expropriation has exceeded 400 million YTL but still, as of September 2006 there are many victims who could not get their money from expropriation. Before considering how expensive the dam construction is, look at Yusufeli in Milliyet newspaper dated 26 June 2006. (Top) "None of those vineyards and gardens will remain. When the dam is built, the plains disappear and the arid mountains remain. We grieve for Hasankeyf. What can we say for the Fırtına Valley? Will we condone everything just for the sake of energy? The decision is yours to make. But do not forget that the problems of coal are not that different from those of hydraulic.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Enerji Çeşitleri Hakkında yalanlar 2: Ülkemiz su kaynaklarının %15'i kullanılmaktadır efsanesinin doğrusu [Accessed 15.01.2017]
410	Rüzgâr enerjisinin aleyhte kullanılan yönleri de mevcuttur. Gürültü kirliliği, kuşların gece çarparak ölmesi, doğru akım ürettiği için akü ve alternatif gerilim değiştirici (convertor) bulunması hem manyetik kirlilik hem de akü nedeni ile çevre problemi yarattığını karşıtlar sürekli gündeme getirir.	There are also disadvantages of wind energy. The noise pollution, the collision of birds at night, the generation of direct current and the presence of a battery and an alternating voltage convertor are some of them. They also lead to magnetic pollution and environmental concerns due to the battery. These are the main arguments of the opponents.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Enerji Çeşitleri Hakkında yalanlar 4: Rüzgâr enerjisi tüm elektrik sorununu çözecektir efsanesinin doğrusu [Accessed 15.01.2017]
411	1000 MW'lık bir nükleer santral yatımı 1.5 milyar dolara mâl olurken aynı elektriği üretmek için 6 milyar dolarlık Rüzgâr yatırımı yapılması gerekliliği ortadadır. Ayrıca bu yatırım rüzgâr esmediği zaman atıl duracaktır.	While a 1000 MW nuclear power plant investment is worth 1.5 billion dollars, it is necessary to invest 6 billion US dollars to produce the same amount of electricity. Moreover, this investment will be idle when the wind is not blowing.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Enerji Çeşitleri Hakkında yalanlar 4: Rüzgâr enerjisi tüm elektrik sorununu çözecektir efsanesinin doğrusu [Accessed 15.01.2017]
412	Kaçak (çalıntı) elektrik gelişmekte olan ülkelerin bir gerçeğidir. Kaçak elektriği tasarruf edilecek bir meta olarak görmekte, bunları yakalayınca tüketimin azalacağını düşünmekte yanlıştır. Çünkü ortada bir kullanıcı vardır, sadece abone değildir, sayacı yoktur. Ya da sayaç dışı kullanımı mevcuttur. Siz bunları düzeltince veya yakalayınca harcama belki biraz azalabilir, ama ortadan kalkacağını söylemek ciddi bir hata olur.	Electricity theft is a reality of the developing countries. It is also wrong to think that the stolen electricity is a commodity that can be saved, and that consumption will decrease when you catch those who stole it. Because there is a user and there is a gauge; these people are not just subscribers. Some people have non-counter use. If you catch them, consumption may be reduced a little, but it will be a serious mistake to say it will be eradicated completely.	ProNukeNGO2	Pro-Nuclear NGOs	NukTe Web Site, Enerji Çeşitleri Hakkında yalanlar 7: Kayıp-Kaçak bitse enerjide ciddi rahatlama olacaktır efsanesinin doğrusu [Accessed 15.01.2017]
413	1970'lerden bugüne hep aynı argüman kullanılıyor. Enerji açığımız var deniyor. Ama Türkiye'de bir enerji açığı söz konusu değil. Var olan kapasitemi yeterli bize. Zaten Akkuyu'ya kurulacak dört reaktörden gelecek 4800 MW oransal olarak kurulu gücümüz içinde çok az bir orana tekabül ediyor.	The same argument has always been used since the 1970s. We have a pressing need for energy. But in Turkey there is no problem of lack of energy. The existing capacity is enough for us. 4800 MW that will be produced from the four reactors to be installed in Akkuyu, corresponds to a very small proportion of our existing power.	LocalNGO5	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 2: Seyfettin Atar [Accessed 15.01.2017]
414	Akkuyu tamamen Rusya'ya ait olacak. Böyle bir santralden teknoloji transferi vs. olmayacağı da açıkça ortada.	Akkuyu will belong completely to Russia. It is also clear that there will be no technology transfer from such a plant.	LocalNGO5	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014:

ArgID	Argument	Translation	Who	Role	Source
					Bölüm 2: Seyfettin Atar [Accessed 15.01.2017]
415	En iyi enerji üretme yolu enerjiyi verimli kullanmaktır.	The best way to generate energy is to use energy efficiently.	LocalNGO5	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 2: Seyfettin Atar [Accessed 15.01.2017]
416	Akdeniz su sıcaklığında Akkuyu verimli çalışmayacak	Akkuyu will not work efficiently in Mediterranean water temperature	LocalNGO5	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 2: Seyfettin Atar [Accessed 15.01.2017]
417	Ruslarla yapılan anlaşmaya göre atık konusu muğlakta	According to an agreement with the Russians, the waste issue is still unresolved	LocalNGO5	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 2: Seyfettin Atar [Accessed 15.01.2017]
418	Akkuyu turizm cenneti aslında. Mersin-Antalya karayolu nükleer santral yapılacak diye bilerek bakir bırakıldı. (Turizm yatırımı yapılmadı demek istiyor)	Akkuyu is actually a tourism paradise. The motorway between Mersin-Antalya was left untouched knowing that a nuclear power plant would be built. (Wants to say that no tourism investment has not been made)	LocalNGO5	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 2: Seyfettin Atar [Accessed 15.01.2017]
419	Akkuyu'da köylülere iş vaadi verilmiş. Okul, kitap, kırtasiye gibi, köylüyü kandırmak için destekler sağlanmış. Ama bu santralden kimseye iş çıkmayacak. En fazla güvenlik görevlisi olurlar.	The villagers were promised jobs in Akkuyu. In order to persuade villages, the company distributed school books and stationery. But this plant will not work for anyone. At best, they will become the security officers of the plant.	LocalNGO5	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 2: Seyfettin Atar [Accessed 15.01.2017]
420	Karadeniz zaten Çernobil'den çok etkilendi. Yıllarca artan/süregelen kanser ölümleri. Bu nedenle biz nükleeri ve radyasyonu iyi biliyoruz	The Black Sea has been heavily affected by Chernobyl already. Look at the increasing/ongoing incidences of cancer. This is how we have come to learn about nuclear and radiation.	LocalNGO3	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 3: Metin Gürbüz [Accessed 15.01.2017]
421	Sinop NKP – 60 birleşeni var. Fakat nükleer karşıtı mücadele termik ve HES karşıtı mücadele gibi güçlü değil.	There are 60 constituent parts in Sinop power plant. But the anti-nuclear struggle is not as strong as the thermal and anti-HEPP struggle.	LocalNGO3	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 3: Metin Gürbüz [Accessed 15.01.2017]
422	Bu bölgede doğadan geçim çok yaygın. Balıkçılık, tarım vb. bu bölgede çok yaygın.	It is very common for the locals here to make a living from the nature. They are mostly engaged in fishing, agriculture etc.	LocalNGO3	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 3: Metin Gürbüz [Accessed 15.01.2017]
423	Sinop'ta nükleer santral için belirlenen yer: 1983 tarihli bakanlar kurulu kararıyla koruma altında Turizm potansiyeli yüksek Temiz deniz Balık üreme bölgesi İnceburun yarım adasının %99 Ormanlık alan	The designated place for nuclear power plant in Sinop: Is protected under the decision of the cabinet of 1983 Has high tourism potential Has clean sea Is a fish breeding area 99% of the Inceburun peninsula is covered by forests	LocalNGO3	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 3: Metin Gürbüz [Accessed 15.01.2017]
424	1970li yıllarda bu bölgedeki eski yerel ormanları kesip endüstriyel	In the 1970s, they cut old local forests in this area and turned them	LocalNGO3	Local NGOs	Nükleer Tehdit ve Akdeniz

ArgID	Argument	Translation	Who	Role	Source
	plantasyona çevirdiler. Kısır çam ağaçları diktiler. Şimdi de kesiyorlar. Biz diktik biz kesiyoruz diyorlar. Bölgeye yaklaşamıyoruz, ne karadan ne de denizden. Kolluk kuvvetleri engel oluyor. Bu güzel bölgeyi halktan koparacaklar.	into industrial plantations. Sterile pine trees were planted instead. Now they cut them too. They say "We planted them and we have the right to cut them". We cannot get close to the area, neither from the land nor from the sea. Law enforcement officers are blocking our way. They will take this beautiful region from the people.		and activists	Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 3: Metin Gürbüz [Accessed 15.01.2017]
425	Bu santraller enerji santrali değildir. Bu iktidar silahlanma amacı taşıyor aslında. İktidarlarını silahla taçlandırmak istiyorlar.	These are not just power plants. This government actually aims to develop nuclear arms. They want to crown their rule with arms.	LocalNGO3	Local NGOs and activists	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 3: Metin Gürbüz [Accessed 15.01.2017]
426	Parti olarak nükleer enerjiye kategorik olarak karşıyız. Usulüne göre yapılmış bir santral bile istemiyoruz.	As a political party, we are categorically opposed to nuclear energy. We do not want a power station even if has been equipped with the latest safety measures.	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]
427	Halkın talebi de bu yönde olduğu için karşıyız. Mersin halkı şimdiye kadar yapılan anketlerde hep %70-80 civarında hayır dedi bu projeye. Ama çok yerel köyler (0 noktası) o kadar karşı değiller artık ne yazık ki. Oralarda bu direnç düşmüş durumda. Oradan bir ses çıkmayınca, Mersin'deki hareket de son 10 yıldır bir durağanlık içinde. Bu sorunu çözmemiz lazım. Mersin halkının mücadelede yalnız olmadığını bilmesi gerekiyor. Mersin'de bir kadercilik başladı ne yazık ki	We are against nuclear because it is not what the public wants. 70-80% of the people in Mersin always said no to this project, survey after survey. But many local villagers (0 point) are not so against it anymore unfortunately. This resistance has weakened there. With no action from there, the movement in Mersin has been in a stagnation for the last 10 years. We need to solve this problem. Mersin's people need to know that they are not alone in their fight. Unfortunately, fatalism has taken over in Mersin	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]
428	Bu nükleer santrallerin Türkiye'nin öngörülebilir enerji açığını kapatmakla herhangi bir rasyonel ilgilisi yok.	These nuclear plants have nothing to do with meeting the estimated energy need in Turkey.	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]
429	Açık olan bir şey, nükleer santrallerin elektrik enerjisi üretmekte en gayri iktisadi yapılar olduğudur. Çıplak maliyetler göz önünde bulundurulduğunda küçük bir kar varmış gibi görünse de bütün toplumsal maliyetleri ve doğan zararları göz önüne alınca bu yapıların sürdürülemez, karşılanamaz, altından kalkılamaz yapılar olduğu belli.	What is clear is that nuclear power plants are the most non-economic structures in generating electricity. Although it seems that there is a small profit when considering the initially visible costs, it is obvious that these structures are harmful, unsustainable and unacceptable, considering all the social costs they incur	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]
430	Zaten iktidar da enerji açığı ile ilgilenmiyor. İktidar nükleer kulübüne üye olmak istiyor. Atom bombası yapma kapasitesini elinde tutmak istiyor. Silahlanma ve bölgesel hakimiyet kurmak niyetinde. İktisadi argümanlar kadar bu politik argüman üzerinde de durmalıyız.	The government is not interested in the energy shortage anyway. It wants to become a member of the nuclear club. It aims to have the resources to make atom bombs. It intends to establish arms and regional dominance. We must take into account political arguments as much as economic arguments.	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]
431	Ama ne yazık ki Türkiye'deki insanların öncelikleri arasına nükleer girebilmiş değil. Cinsiyet/etnik/ekonomik özgürlükler daha önemli hala. O yüzden Türkiye'de muhalif hareketi bu yönde mobilize edemiyoruz henüz	But unfortunately the people in Turkey just do not prioritize nuclear in their personal agendas. Gender/ethnic/economic struggles are still considered more important, which is why we cannot mobilize the opposition in Turkey yet.	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]
432	Muhalefet partileri belediyelerin ellerinde bulunan kapasiteleri kullanarak sürdürülebilir enerji örnekleri yapmalılar. Böylece halk bunun mümkün olduğunu anlayacaktır.	The opposition parties should develop sustainable energy projects using resources they have at the municipality level, so that the people will understand that sustainable energy is possible.	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
433	Anti-nükleer mücadele anti-kapitalist mücadeleden ayrı düşünülemez – Nükleer de kapitalizm de kar odaklı mekanizmalar çalıştırırlar	Anti-nuclear struggle cannot be considered irrespective of anti-capitalist struggle – Both nuclear and capitalism operate on profit-oriented mechanisms.	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]
434	Nükleer artık "bon pour l'orient" olarak görülüyor. Global güçler nükleeri terkederken Türkiye gibi devletlere satılmaya çalışılıyor	Nuclear is now considered to be "bon pour l'orient" (good enough for the east). Global forces are trying to sell nuclear to countries like Turkey when they are quitting it.	MP3	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 5: Ertuğrul Kürkçü [Accessed 15.01.2017]
435	Halk istemiyor, çünkü halk sağlığını seviyor.	People do not want (the plant) because people are keen on being healthy.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
436	Halk istemiyor zira tarım ürünlerini satamayacağını biliyor dış pazarlarda da, iç pazarlarda da. Kimse bu ürünleri almak istemez eğer bilirlerse.	People do not want (the plant) because they know that they cannot sell agricultural products either in foreign or in domestic markets. If anyone knows where they are coming from nobody will want to buy these products.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
437	Nükleer santral yapılınca balıkçılık ölecek	Fishing will die when nuclear the power plant is built.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
438	Akdeniz'de soğutma amacıyla çok fazla su kullanılacak ve su sıcaklığı daha da yükselecek – yaşam bitecek.	In the Mediterranean, too much water will be used for cooling purposes, and the water temperature will rise further, thereby ending life in the region.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
439	Turizm bitecek, kimse santral yakınında denize girmek istemez.	Tourism will end, nobody would want to swim close to a nuclear plant.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
440	Atıkların nasıl halledileceğini daha dünya bilmiyor. Türkiye'de de nasıl çözüleceği belli değil.	Even the world does not know how to handle the wastes. It is unclear how it will be dealt with in Turkey.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
441	Referandumun da bir seçenek olabileceğini düşünüyoruz, çünkü AKP seçmeni de istemiyor nükleeri.	We think the referendum may be an option too, because the AKP supporters do not want nuclear either.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
442	AKP halka yalan söylüyor. Atıkları Rusya halledecek diyorlar. Projenin tam adı: Nükleer güç santrali, atık depolama merkezi, rıhtım ve yaşam merkezi.	AKP is lying to the public. They say that Russia will handle the wastes. However, the full name of the project is: nuclear power plant, waste storage center, dock and life center.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı

ArgID	Argument	Translation	Who	Role	Source
					[Accessed 15.01.2017]
443	Halk biliyor ki Türkiye'nin nükleere ihtiyacı yok. Hedef enerji üretmek değil. Zaten AKP'nin enerji bakanı da meclis kürsüsünde "Nükleer santral sadece enerji demek değil" dedi.	People already know that Turkey does not need nuclear. The primary aim is not to produce energy anyway. Even the Energy Minister of AKP said in the parliament, "Nuclear power plant does not only mean energy".	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
444	Sadece güneşi kullanarak bile Türkiye enerji ihtiyacının tamamını karşılayabilir. Buna bir de rüzgarı, güneşi, jeotermali eklerseniz hayli hayli yeter	Even using only the sun, Turkey can meet all of its energy needs. Add to that the wind, the sun, geothermal powers, it will be more than enough.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
445	Halk güneş enerjisinin daha ucuz olduğunu da biliyor. Konya-Karapınar'da yapılacak güneş santralinin maliyeti belli. Akkuyu'daki santral için 25 milyar dolar deniyor. Eğer aynı gücü konya karapınar'dan üretmek istersek 9 milyar dolara mal oluyor.	People, too, know solar energy is cheaper. The cost of the solar plant in Konya-Karapınar is a case in point. The Akkuyu plant costs 25 billion dollars. To produce the same amount of power from Konya-Karapınar, we would only need 9 billion dollars.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
446	Halk istemediği halde, ihtiyaç olmadığı halde, daha pahalı olduğu halde, hükümet neden nükleer istiyor. İki boyutu var: Rant ve silah boyutları.	Why does the government want nuclear although there is no real need, it is more expensive and people do not want it? There are two dimensions: Self-interests and developing nuclear weapons.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
447	Buraya kaçak liman yapılıyor. Burada liman yapıldığında foklar ölüyor. Halk bunu da biliyor.	An illegal harbour is being built here. When a harbour is constructed, seals die here. The locals know this too.	MP1	Member of Parliament	Nükleer Tehdit ve Akdeniz Havzası'nda İşbirliği Paneli_6 Kasım 2014: Bölüm 6: Aytuğ Atıcı [Accessed 15.01.2017]
448	Bu nükleer santralin çevreye vereceği etkiyi minimize etmek için gereken her türlü çalışma yapılıyor	Every effort is being made to minimize the impact this nuclear plant will have on the environment.	LocalGovn7	Local Government	Sinop valisi Yavuz Selim Köşger nükleer santral ağaç kesim açıklaması - 13.04.2014 [Accessed 15.01.2017]
449	Nükleer teknolojide en son noktanın, en son gelişmelerin tatbik edileceği bir nükleer santral olacak bu. Hem Japonların hem Fransızların geliştirdikleri son teknoloji olan Atmea 1 tipi bir nükleer santral kurulacak. Güvenlik önlemleri açısından da en son teknoloji kullanılacak, ..., atıkların bertarafı açısından da en son teknoloji kullanılacak demektir. Dolayısıyla, Sinop'ta kurulacak nükleer santral dünyadaki en gelişmiş model.	It will be the ultimate point in nuclear technology, a nuclear power plant where the latest developments will be applied. Atmea 1 type nuclear power plant will be installed, which is the latest technology developed both by Japanese and French. The latest technology will also be used in terms of safety precautions, and waste disposal. Therefore, the nuclear power plant in Sinop will be the most advanced model in the world.	LocalGovn7	Local Government	Sinop valisi Yavuz Selim Köşger nükleer santral ağaç kesim açıklaması - 13.04.2014 [Accessed 15.01.2017]
450	Vali Köşger, Sinop'ta yapılması planlanan nükleer santralin turizme olumsuz etkisi olmayacağını ifade etti. Köşger, "Bilindiği gibi Fransa'nın merkezinde sadece altı adet nükleer santral var ve yıllardır turizm anlamında hiçbir düşüş yok, aksine hep artış oluş. Fransa enerjisinin yüzde 75'ini nükleer santrallerden karşılıyor. (...) Maalesef kendi kuyruğumuza teneke bağlayarak bir yerlere gelmek söz konusu olmaz. Sinop özellikle sanayisi ile, kültür ve turizmi ile önümüzdeki yıllarda çok mesafe kat edeceğine inanıyorum	Governor Köşger stated that the nuclear power plant designated to be built in Sinop would not have a negative impact on tourism. "As is known, there are six nuclear power plants in the center of France and there has been no decline in terms of tourism for years, on the contrary, there is always an increase. France receives 75 percent of its energy from nuclear power plants. (...) There is no point in slowing down our pace. I believe that Sinop will reach develop greatly in the coming years, especially with its industry, culture and tourism.	LocalGovn7	Local Government	Vali Köşker: "Nükleer Santralin Turizme Olumsuz Etkisi Yok - *Hürriyet Daily,* [Accessed 15.01.2017]
451	Sanayileşme noktasında bir devlet projesi olan nükleer santral anlaşması yapıldı. İnşallah en kısa sürede faaliyete geçer ve Sinop'a	At the point of industrialization, they made a nuclear power plant contract which is a state project. I hope that the plant goes into	LocalGovn7	Local Government	Vali Köşger, Nükleer Santralle İlgili Konuştu,

ArgID	Argument	Translation	Who	Role	Source
	hak ettiği ivmeyi kazandırır.	operation as soon as possible and accelerates Sinop's development.			Haberler.com [Accessed 15.01.2017]
452	Türkiye`nin orta vadeli program ve 2023 hedeflerinde büyüme, şüphesiz en önemli gündem maddesidir. Ama büyümenin sağlayıcısı ve temel bileşeni olarak şüphesiz üretim, üretimin ihracata dayalı artışı ve bunu sağlayacak girdiler olan enerjideki maliyetler ve arz, yani temin konusu en az bu kavramlar kadar öne çıkmaktadır. Türkiye`nin büyümesinden daha öte bir enerji talebi her yıl karşısına çıkmaktadır. Yılda yaklaşık yüzde 7-8 oranındaki bir enerji talebi, ekonominin dinanizmini, üretime dayalı beklentilerin artışını ve Türkiye`nin 2023 hedefine doğru hızla yol alışının çok açık bir göstergesi ve oranıdır. Bunun karşılanması bugünkü enerji kaynaklarımız açısından ne yazık ki mümkün görülmemektedir. Türkiye`nin doğal bir zenginliğe sahip olmamasına, bu noktada enerjinin yüzde 70`ine varan bir dışa bağımlı ülke olmasına rağmen ortaya koyduğu performans, her açıdan takdir edilmek ve altı çizilmekle beraber, 2023 ve sonrası hedeflerine ulaşmak için enerjide arz çeşitliliğine ve özelliğine göre nükleer enerjinin gecikmiş de olsa artık elde edilmesinde zorunluluk bulunmaktadır	Growth is the most important agenda item in Turkey's medium term program and 2023 targets. But as a catalyst and the most basic component of growth, the processes of production, increase of production based on exports, and the costs and supply of energy, which are the inputs to the growth, are at least as important as these concepts. The energy demand of Turkey each year turns out to be bigger than its growth. An energy demand of around 7-8% per annum is a clear indication of the economy's dynamism, the increase in production-based expectations and the rapid progression of Turkey towards its 2023 target. It is unfortunately not possible to meet this demand with our present energy sources. Although Turkey does not have a natural richness and is 70% dependent on foreign energy sources, its performance deserves praise. However, in order to achieve the targets of 2023 and later, there is a necessity that we should diversify our energy supply and nuclear energy should be finally obtained, no matter how late.	LocalGovn3	Local Government	NÜKLEER ENERJİ MERSİN`DE MASAYA YATIRILDI, Refleks Gazetesi, [Accessed 15.01.2017]
453	..biz artık enerji girdilerinde ve arz temininde hem öngörülebilir hem de sürdürülebilir olan ve şüphesiz ekonomik maliyeti ile de en ucuz girdi olan nükleer enerji santralleri ve enerji terimini artık Türkiye gündeminde, üretimin tam merkezinde tutma durumundayız. Nükleer enerji santralini gerçekleştirmek, enerjinin diğer kalemlerini ret etmek değil, bunları dışlamak değil, bunlardan vaz geçmek değildir. Tam aksine hepsini, bu ülkenin sahip olduğu bütün enerji kaynaklarını en ekonomik kullanmak ve en fazla verimi elde etmek anlamımda bir çabayı ve planlamayı da içermektedir.	We now have to keep nuclear power plants and nuclear energy on the agenda of Turkey, as nuclear is both predictable and sustainable in energy inputs and supply, and undoubtedly the cheapest input. To construct a nuclear power plant is not to reject other types of energy or to exclude them. On the contrary, they are all involved in the effort and plans to make the most economic use of all the energy resources of this country and to obtain the maximum yield.	LocalGovn3	Local Government	NÜKLEER ENERJİ MERSİN`DE MASAYA YATIRILDI, Refleks Gazetesi, [Accessed 15.01.2017]
454	..dünyanın bugün kalkınmış tüm ülkelerinde kullanılan ve şüphesiz ki ekonomik kalkınma açısından çok önemli bir hazırlayıcı, girdi ve enerji temininde kaynak olan nükleer enerjiyi sadece bir merkezde değil, 2023`e doğru bu enerji açığını kapatmak için çoğaltmak ve kullanmak zorunda ve durumundadır.	Nuclear energy, which is used in all the developed countries of the world today and undoubtedly a crucial preparatory, input and energy source for economic development, should be used to cover the energy gap towards 2023, not just at one center.	LocalGovn3	Local Government	NÜKLEER ENERJİ MERSİN`DE MASAYA YATIRILDI, Refleks Gazetesi, [Accessed 15.01.2017]
455	Türkiye'de bir ilk olan Akkuyu Nükleer Santrali, Türkiye'nin ekonomisi ve geleceği için çok önemli bir projedir. Nükleer güç santralinin, zorlu mühendislik çalışmalar gerektiren yapılarının inşaatı sayesinde, benzersiz tecrübe edinecek olan Türk mühendislik ve inşaat firmalarını sürece dahil ediyoruz.	Akkuyu Nuclear Power Plant, a first in Turkey, is a very important project for Turkey's economy and future. Thanks to the building of the nuclear power plant's construction that require rigorous engineering work, we are incorporating Turkish engineering and construction firms into the construction process, hoping that they will gain unparalleled experience in the process.	Business4	Business Groups	Akkuyu Nükleer Genel Müdürü Fuad Akhundov, Uluslararası Atom Enerjisi Ajansı'nın Viyana'daki toplantısında Akkuyu Nükleer Santral Projesi'ni anlattı - [Accessed 15.01.2017]
456	Akkuyu'da çift koruma kalkanı kullanılacağını vurgulayan Mihail Maltsev, "Bu sistem, çevreye radyasyon sızması ihtimalini ortadan kaldırıyor. Ayrıca, fırtına, tsunami gibi doğal afetler ve uçak çarpması gibi kazalardan korunmasını sağlıyor" dedi. Mihail Maltsev, "Fukuşima'dan gereken dersler çıkarıldı. Stres testleri yapılarak süreçler geliştirildi. Fukuşima'dan daha tehlikeli olabilecek ana pompalarda yaşanabilecek kazalara karşı senaryolar geliştirildi" diye konuştu.	Mihail Maltsev, who emphasized the use of double layered containment shell in Akkuyu, said, "This system removes the possibility of radiation leakage to the environment, and provides protection from natural disasters such as storms, tsunamis and plane crashes." Mikhail Maltsev added, "Lessons were taken from Fukushima. Stress tests were conducted to improve the processes. Scenarios were developed against the accidents that could happen in the main pumps which could be more dangerous than Fukushima.	Business6	Business Groups	Akkuyu`yu en üst düzeyde güvenlik - [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
		"			
457	Akkuyu NGS azami derecede güvenli olacak. Ona göre hazırlıyoruz. Japonya'da yaşanan Fukuşima kazası ve 500 tonluk dev uçağın düşmesi olasılığını göz önünde bulundurarak santral yapıyoruz. Santralimiz için en üst, fevkalade düzeyde modern emniyet sistemleri ile donatılacak. Santral, terör, deprem, sel ve diğer olası tehlikelerden korunacak ve ucuz elektrik verecek	Akkuyu nuclear power plant will be safe at maximum level. We are making the power plant, taking into consideration the possibilities of a similar accident like Fukushima in Japan or the collision of a 500-ton giant plane. Our plant will be equipped with modern safety systems at an extraordinary level. The plant will be protected from terrorism, earthquakes, floods and other potential hazards and will provide cheap electricity.	Business8	Business Groups	Akkuyu`yu en üst düzeyde güvenlik - [Accessed 15.01.2017]
458	Hükümetimiz de nükleer güç santrali konusunda yerli katkı payını artırmak konusunda kararlı. Enerji Bakanlığı ve Sanayi Bakanlığı ile bu bakanlıkların illerdeki birimleri yerli katkı payını arttırmak amacıyla zaman zaman bizleri bilgilendiriyor. .... Nükleer santralleri çevre ve güvenlik açısından da yerinde görme ve değerlendirme şansımız oldu. Novovorenej'de santral çevresinde yoğun tarım yapıldığını gözlerimizle görmek bizim açımızdan etkileyici oldu. Muhteşem bir doğaya sahip şehirde, patates ve ayçiçek üretimi yapılıyor. Nükleer santralin aslında bir endüstriyel tesis, bir fabrikadan farkı yok. Yüksek güvenlikli bir endüstriyel tesis gibi çalışıyor.	Our government is determined to increase the share of domestic contribution on the nuclear power plant. The Ministry of Energy, the Ministry of Industry and the provincial units of these ministries inform us from time to time in order to increase domestic contribution. .... We had a chance to see and evaluate the nuclear power plants in terms of environment and safety. It was impressive for us to see with our eyes that intensive farming was done around the plant in Novovorenej. Potatoes and sunflowers are produced in a city of magnificent nature. The nuclear plant is actually an industrial plant, no different from a factory. It works like a high-security industrial facility.	Business3	Business Groups	Tekirdağlı sanayiciler nükleer teknolojiyi yerinde gördü - [Accessed 15.01.2017]
459	...nükleer enerji, ülkemiz için ucuz bir enerji olması, enerjide arz ve kaynak çeşitliliğini artırması, baz enerji olması, ülkemizde ileri teknoloji yetkinliğinin ve malzeme biliminin gelişmesine katkı sağlaması gibi avantajlara sahiptir	Nuclear energy has advantages such as being cheap energy for our country, increasing energy supply and resource diversity, being a base energy source, enhancing the competence in advanced technology and development of material science in our country	Business7	Business Groups	Ülkemizde Nükleer Enerji Ve Nükleer Sanayi - OSTIM Gazetesi - [Accessed 15.01.2017]
460	Yaklaşık 550 bin parçadan oluşan nükleer santraller; inşaat, elektrik-elektronik ve makine imalat sanayi altında faaliyet gösteren pek çok sektöre iş imkânı sunması ile Türk Sanayisine dinamizm kazandırarak yeni istihdam alanları da yaratacaktır.	Nuclear power plants consisting of approximately 550 thousand parts will create new employment areas for Turkish Industry by offering business opportunities in many sectors operating under the construction, electrical-electronic and machinery manufacturing industries.	Business7	Business Groups	Ülkemizde Nükleer Enerji Ve Nükleer Sanayi - OSTIM Gazetesi - [Accessed 15.01.2017]
461	Nükleer sektör; havacılık, uzay ve savunma sanayi gibi riskli endüstri kolları içerisinde olduğu için güvenlik ve kalite gereksinimi en üst seviyededir. Türk firmalarının bu sektöre girişi, firmalarımıza uluslararası güvenlik standartları ve kalite yönetim sistemleri (üretim sistemi, çevre ve iş sağlığı ve güvenliğine ilişkin) ile çalışma kültürü kazandıracaktır.	Safety and quality requirements are at the highest level in the nuclear sector compared to other risky sectors such as aviation, space and defence industries. When Turkish firms enter this sector, our firms will gain the habit of working in international safety standards and with quality management systems (production system, environment and occupational health and safety).	Business7	Business Groups	Ülkemizde Nükleer Enerji Ve Nükleer Sanayi - OSTIM Gazetesi - [Accessed 15.01.2017]
462	... nükleer santrallere yönelik geliştirilecek kapasite enerji (başta termik santraller olmak üzere diğer elektrik üretim santralleri), maden, demir-çelik, denizcilik, havacılık, uzay, savunma, otomotiv gibi katma değeri yüksek sanayi kollarına da nüfuz edecektir. Bahsi geçen sektörlerde yaşanacak pozitif gelişmeler ülkemizin ihracatını artırıcı, ithalatını ve cari açığını azaltıcı etkiye sahip olacaktır.	The capacity to be developed for nuclear power plants will also penetrate into high value-added industries such as energy (other power generation plants, in particular thermal power plants), mining, iron and steel, maritime, aviation, space, defence and automotive. Positive developments in these sectors will increase the exports of our country and decrease the imports, hence reducing the current deficit	Business7	Business Groups	Ülkemizde Nükleer Enerji Ve Nükleer Sanayi - OSTIM Gazetesi - [Accessed 15.01.2017]
463	Nükleer santral projeleri sadece inşaat sürecinde, reaktörlerin tasarımına bağlı olarak 12 ile 14 bin kişi istihdam sağlayabiliyor	In the construction process, nuclear power plant projects can employ 12 to 14 thousand people depending on the design of reactors.	Business5	Business Groups	Nükleer santral inşaat sürecinde 14 bin istihdam olanağı - TRTHaber - [Accessed 15.01.2017]
464	Türk firmalarının nükleer projelerinin tedarikçileri haline getirmek için yurt dışından teknoloji ve deneyim transferi yapmak için uğraşıyoruz. Bu amaçla İngiltere, Fransa, Kanada ve Bulgaristan nükleer sanayi dernekleri ile iş birlikleri yaptık. ... İleride bu projelerin	We are trying to transfer technology and experience from abroad to turn Turkish companies into nuclear suppliers. For this purpose we have worked with the nuclear industry associations of the UK, France, Canada and Bulgaria. ... If we can increase the number of	Business5	Business Groups	Nükleerde işbirliği artıyor - Dünya Daily - [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
	sayısını artırıp, kendi nükleer tedarik zincirimizi de oluşturabilirsek, Türkiye'nin dünyanın en büyük ekonomileri arasındaki yükselişini hızlandırabiliriz	these projects and build our own nuclear supply chain in the future, we can accelerate the rise of Turkey among the world's largest economies.			
465	Türkiye nükleer teknolojiye sahip olduğunda nükleer tedarik zincirini kuracak ve G-20 ülkeleri içerisinde daha fazla ihracat yapabilecek	When Turkey possesses nuclear technology, it will establish a nuclear supply chain and increase its exports to G-20 countries	Business5	Business Groups	Nükleer teknoloji Türkiye'nin ihracatını artıracak - Anadolu News Agency - [Accessed 15.01.2017]
466	Güvenilir enerji politikaları oluşturabilmek için dünyada nükleer endüstrinin baş aktörlerinden ABD'nin söz konusu konseyiyle yaptığımız anlaşmanın iki ülke arasındaki işbirliğini geliştireceğine inanıyorum. Nükleer enerjinin güvenli bir şekilde gelişmesine yönelik atılan bu adım, koordinasyonumuzu daha da güçlendirecek. ABD Nükleer Altyapı Konseyi ile imzalanan işbirliği anlaşması, hem teknoloji transferi sağlayacak hem de şirketler arasında işbirliğinin önünü açacaktır.	I believe that the agreement we have made with the US, one of the leading actors of the nuclear industry in the world, to develop reliable energy policies will improve the cooperation between the two countries. This step towards the safe development of nuclear energy will further strengthen our coordination. The cooperation agreement signed with the US Nuclear Infrastructure Council will provide both technology transfer and cooperation between companies.	Business5	Business Groups	Türkiye Nükleer Sanayi Derneği ABD'li şirketlerle işbirliğine gidiyor - USA Sabah - [Accessed 15.01.2017]
467	Mersin Vali Yardımcısı Cezmi Türk Göçer, Türkiye'nin günümüzde enerji tüketimi artış hızına göre dünyada Çin'den sonra ikinci sırada yer aldığını belirterek, Türkiye'nin yılda yaklaşık 60 milyar dolarlık enerji ithalatı yaptığını söyledi. Akkuyu ve Sinop'ta nükleer santrallerin devreye alınması ile Türkiye'nin doğalgaz ithalatında yıllık olarak 7.2 milyar dolara kadar tasarruf yapabileceğini ifade edenGöçer, "Bu yolla sağlanacak tasarruf ile Türkiye'nin dış ticaret açığını yaklaşık yüzde 10 azaltabiliriz" dedi. Vali Yardımcısı Göçer ayrıca, NGS yapım projelerine iştirak etmenin Türk şirketlerinin nükleer santrallerin yapımında deneyim kazandıracağını, binlerce kişiye ilave istihdam oluşturacağını vurguladı.	Mersin Deputy Governor Cezmi Türk Göçer stated that Turkey is in second place in the world after China according to the increase in the rate of energy consumption and said that Turkey imports approximately 60 billion dollars of energy per year. When Akkuyu and Sinop nuclear power plants come into operation, Turkey could save up to 7.2 billion dollars in natural gas imports annually, he said. "We can reduce the foreign trade deficit of Turkey by about 10% with the savings provided this way". Göçer also emphasized that participating in NPP construction projects will give Turkish companies experience in the construction of nuclear power plants and create additional employment for thousands of people.	LocalGovn2	Local Government	Türk kamu personeli Novovoronej NPP-2'yi ziyaret etti - [Accessed 15.01.2017]
468	"Türkiye, gittikçe daha da çok kalkınan ve gelişen bir ülkedir. Gelişmiş ülkelere baktığımızda tamamında nükleer santrallerin işletildiğini görüyoruz. Günümüzde 31 ülkede toplam 448 nükleer santral işletilmekte, 61 nükleer santral ise yapım aşamasındadır. Bunların en fazla olanı ABD'de 100 nükleer santral faaliyette, 4 tane de yapım aşamasındadır. Ülkesinin elektrik ihtiyacının önemli bir kısmını nükleer santrallerden karşılayan Fransa'da ise 58 adet nükleer santral işletilmektedir. Dünyanın en fazla turist çeken başkentlerinden biri olan Paris'in etrafında da 8 adet aktif olarak enerji üreten nükleer santral bulunmaktadır	"Turkey is an increasingly developing and improving country. When we look at developed countries, we see that all have operating nuclear power plants. Currently, 448 nuclear power plants are active in 31 countries and 61 nuclear power plants are under construction. In the US, which has 100 plants in operation, construction is underway for 4 more plants. In France, where a significant portion of the country's electricity needs are met by nuclear power plants, 58 nuclear power plants are in operation. There are 8 active nuclear power plants around Paris, one of the world's most tourist attracting capitals.	LocalGovn6	Local Government	Vali Çakacak: "Akkuyu Nükleer Santrali'nin yapımı daha hızlı devam edecek" - Akdeniz Postası - [Accessed 15.01.2017]
469	"Nükleer santral istemiyoruz. Bize güneş, rüzgar, su yeter!" yazılı dövizde nükleer santralin, tarımı, balıkçılığı, hayvancılığı ve turizmi yok edeceğine, insan sağlığını bozacağına dikkat çekildi.	The placard that reads "We do not want nuclear. Give us water, wind and sun instead" aims to underline the fact that a nuclear plant will end agriculture, fishing, animal husbandry and tourism in the region and will damage human health.	MP4	Member of Parliament	Nükleer santrale karşı Meclis'te döviz açtı - Gerçek Gündem - [Accessed 15.01.2017]
470	Sinop nükleer enerji santralinin elektrik üretimi açısından dışa bağımlılığını azaltacak söylemi AKP'nin koskoca bir yalanıdır.	It is a huge lie of AKP that the nuclear plant in Sinop will reduce foreign dependence in electricity production.	MP2	Member of Parliament	Nükleer santrale karşı Meclis'te döviz açtı - Gerçek Gündem - [Accessed 15.01.2017]
471	Japonya'daki Fukuşima kazası nükleer santrallerin güvenilir olmadığını bir kez daha acı şekilde göstermiştir. Bu kaza nükleer alanda dünyanın en ileri teknolojisinin bile nükleer felaketlerde savunmasızlığını ortaya koymuştur. Bakan, Sinop ve Mersin için 'En	The Fukushima accident in Japan has once again shown that nuclear power plants are not reliable. This accident revealed the vulnerability of even the most advanced nuclear technology in the face of a nuclear disaster. The minister says, Sinop and Mersin are the safest	MP2	Member of Parliament	Nükleer santrale karşı Meclis'te döviz açtı - Gerçek Gündem - [Accessed 15.01.2017]

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	güvenli yer' diyor. Japonya ve Rusya en büyük nükleer darbeyi yemiş sabıkalı iki ülkedir. Siz kalkıp onlara nükleer santral yaptırarak üstüne bir de güvenlikten söz ediyorsunuz	of NPPs. Japan and Russia are the two countries with the largest number of nuclear accidents. You have the nerve to let them build a nuclear plant and you're talking about security.			
472	CHP Sinop Milletvekili Barış Karadeniz ise, facianın ardından yıllardır Karadeniz'de her evde en az 2 adet kanser hastası olduğuna vurgu yaptı	CHP Sinop deputy Barış Karadeniz emphasized that there were at least 2 cancer patients in each house in Karadeniz for years after the accident.	MP2	Member of Parliament	Nükleer santrale karşı Meclis'te döviz açtı - Gerçek Gündem - [Accessed 15.01.2017]
473	Yılda yüzde 7 ila 8 oranındaki enerji talebi, üretime dayalı beklentilerin artışını ve 2023 hedefine hızlı yol alımının açık oranıdır. Bunun karşılanması bugünkü enerji kaynakları ile mümkün görülmemektedir.	Energy demand of 7 to 8 percent per annum is the clearest indicator of the increase in production-based expectations, and the fast path to reach the 2023 target. It is not possible to meet this with today's energy resources.	LocalGovn3	Local Government	Türkiye İçin Nükleer Enerji Bir Zorunluluk - [Accessed 15.01.2017]
474	Türkiye'nin doğal bir zenginliğe sahip olmamasına ve enerjide yüzde 70'e varan dışa bağımlılığına rağmen ekonomik alanda ortaya koyduğu performans takdir edilmektedir. Ancak, 2023 ve sonrasına ulaşmak noktasında nükleer enerjinin elde edilmesi bir zorunluluktur. Ülkemiz üreticisi ve sanayicisi yüksek maliyetle enerji yerine, düşük ve sabit bir enerji maliyeti ile üretim yapmalıdır. Kendi enerji kaynaklarımız ile üretim ve kalkınma boyutunu planlamak durumundayız. Artık enerji girdilerinde ve arz temininde hem öngörülebilir hem de sürdürülebilir olan, ekonomik maliyeti ile de en ucuz girdi niteliği taşıyan nükleer enerji santralleri temininiTürkiye'nin gündeminde ve üretim merkezinde tutmak zorundayız.	Despite the fact that Turkey does not have natural riches and is 70% dependent on external sources for power, its economic performance deserves praise. However, the attainment of nuclear energy is a necessity, for our path to 2023 and after. In our country, the manufacturer and the industrialist must produce at low cost and at a fixed energy cost instead of energy at high cost. We have to plan the production and development with our own energy resources. We are now obliged to keep nuclear power plants on the agenda of Turkey and at the heart of production, because they are predictable and sustainable in energy inputs and supply, and are the cheapest inputs economically.	LocalGovn3	Local Government	Türkiye İçin Nükleer Enerji Bir Zorunluluk - [Accessed 15.01.2017]
475	Ülkemiz 2023'e giden yolda enerji ihtiyacı açığını kapatmak amacıyla kullanacağı nükleer santralleri 1 merkez olarak düşünmemelidir. Bu tesisleri çoğaltmak durumundayız.	Our country should not think of the nuclear power plants as only one centre to meet the energy demand, on our path to 2023. We have to make more of these facilities.	LocalGovn3	Local Government	Türkiye İçin Nükleer Enerji Bir Zorunluluk - [Accessed 15.01.2017]
476	Tüm bunların yanında Akkuyu Nükleer Santrali'nin güvenilirliği konusunda da sıkı denetimler yapılıyor, güvenlik ölçeğinde izlenen süreçte, her düzeydeki önlem alınacaktır. Unutulmamalıdır ki, nükleer santrale dayalı enerji üretmek bir üst lige çıkmaktır.	In addition to all these, strict controls are being made on the reliability of Akkuyu Nuclear Power Plant and measures will be taken at every level in the process followed by the security scale. It should not be forgotten that producing energy, based on a nuclear power plant means moving up to the higher league.	LocalGovn3	Local Government	Türkiye İçin Nükleer Enerji Bir Zorunluluk - [Accessed 15.01.2017]
477	ÇED raporu oldu bittiye getirilerek geleceğimiz ipotek altına alınmaya çalışılmaktadır.	The result of the EIA report is presented to the stakeholders as a fait accompli, thereby mortgaging our future.	LocalNGO4	Local NGOs and activists	NKP Mersin Basın Açıklaması: Çernobil, Fukuşima HAYIR DEMEK İÇİN YETER! - [Accessed 15.01.2017]
478	Bizler biliyoruz ki Ülkemizin nükleer santrale ihtiyacı yok.	We know for a fact that our country does not need a nuclear power plant.	LocalNGO4	Local NGOs and activists	NKP Mersin Basın Açıklaması: Çernobil, Fukuşima HAYIR DEMEK İÇİN YETER! - [Accessed 15.01.2017]
479	Canlı yaşamı için son derece kirli olan, güvenli olmayan, pahalı olan dışa bağımlı bu enerji yatırımından biran önce vazgeçilmelidir.	This energy investment, which is highly dirty, unsafe and expensive, is dependent on outsourcing and must be abandoned.	LocalNGO4	Local NGOs and activists	NKP Mersin Basın Açıklaması: Çernobil, Fukuşima HAYIR DEMEK İÇİN YETER! - [Accessed 15.01.2017]
480	Hukuksuz ve haksız ÇED karar sürecine karşı her platformda mücadelemizi güçlendirerek devam ettireceğiz.	We will continue to strengthen our struggle on every platform against the illegal and unfair EIA decision process.	LocalNGO4	Local NGOs and activists	NKP Mersin Basın Açıklaması: Çernobil, Fukuşima HAYIR DEMEK

ArgID	Argument	Translation	Who	Role	Source
					İÇİN YETER! - [Accessed 15.01.2017]
481	Bir sır gibi saklanarak nükleer santral projesi halkımıza dayatılmaktadır.	Hid like a secret, the nuclear power plant project is imposed on our people.	LocalNGO4	Local NGOs and activists	NKP Mersin Basın Açıklaması: Çernobil, Fukuşima HAYIR DEMEK İÇİN YETER! - [Accessed 15.01.2017]
482	Türkiye'nin narenciye deposu Mersin'in gelecekte üreteceği her türlü tarım ürünlerinin üzerinde nükleer simgesinin yer almaması arzusuyla bakanlığımıza bu ürünlerimizden de uyarı anlamında bir koli gönderiyoruz	In order not to include the nuclear symbol on all kinds of agricultural products that Mersin (the main citrus producer in the country) will produce in the future, we send a parcel to the ministry as a sign of warning.	LocalNGO5	Local NGOs and activists	MERSİN NKP'DEN ; BAKANLIĞA İMZA VE LİMON EYLEMİ - [Accessed 15.01.2017]
483	Sokakları limon ve portakal ağaçlarından yayılan mis gibi kokularla anılan Mersin'in adını, dünyaya nükleer ile duyurmak istemiyoruz. Toplum olarak; yok edilen tarım alanları nedeniyle köyden kente göçün yarattığı sonuçları bugün sosyal, ekonomik ve kültürel yok oluş ile fazlasıyla yaşıyoruz. Kentlerde kar hırsıyla düşük ücretlere ve güvencesiz çalışma şartlarına mahkum edilen işçiler iş kazalarına kurban verilirken, bu acıların vebali hepimizin boynundadır.	We do not want to make Mersin famous for its nuclear power plant as it is famous for streets smelling of lemon and orange. As a society, we live with the social, economic and cultural destruction that results from the migration from the village to the city, resulting from the eradication of agriculture. The workers in the cities who are convicted to low wages and precarious working conditions because of their bosses' greed for profit, are victims of job accidents, and we are all equally guilty of their deaths.	LocalNGO5	Local NGOs and activists	MERSİN NKP'DEN ; BAKANLIĞA İMZA VE LİMON EYLEMİ - [Accessed 15.01.2017]
484	Türkiye'nin enerji açığı yalanı ve enerji ihtiyacını nükleer enerji ile kapatılabileceği ısrarına karşı biz geleceğimizin nükleerde olmadığı ve yenilenebilir enerjinin dünyamız için doğru çözüm olduğu inancıyla bu mücadeleyi sürdürmekte kararlıyız.	Despite the allegation that Turkey suffers from energy deficit and the insistence that only nuclear plants can meet its energy need, we are determined to continue our struggle as we firmly believe that our future lies not in nuclear but in renewable energy.	LocalNGO5	Local NGOs and activists	MERSİN NKP'DEN ; BAKANLIĞA İMZA VE LİMON EYLEMİ - [Accessed 15.01.2017]
485	Akkuyu'da hukuksuz bir şekilde yapılması planlanan nükleer santral projesiyle ilgili ÇED raporu, Çevre Bakanlığı tarafından iki hafta önce halkın görüşüne açıldı. Ancak yaklaşık 4 bin sayfalık rapora itirazlar için sadece 10 günlük göstermelik bir süre tanındı. Ancak biz yılmadan bıkmadan durmadan bu mücadeleyi sürdüreceğiz	The EIA report on the nuclear power plant project planned to be done illegally in Akkuyu was made public by the Ministry of Environment two weeks ago. However, only about a 10-day period was granted for the objection to the 4,000-page report. But we will continue to fight for this cause dauntlessly.	LocalNGO5	Local NGOs and activists	MERSİN NKP'DEN ; BAKANLIĞA İMZA VE LİMON EYLEMİ - [Accessed 15.01.2017]
486	Akkuyu'da yapılacak bir nükleer santral, hem Akkuyu'yu hem de tüm Türkiye'yi geri dönülemez felaketlere götürecektir	A nuclear power plant in Akkuyu will inflict irreversible damage on Akkuyu and the rest of Turkey.	LocalNGO5	Local NGOs and activists	MERSİN NKP'DEN ; BAKANLIĞA İMZA VE LİMON EYLEMİ - [Accessed 15.01.2017]
487	Nükleer enerjinin dünyada hala çözülemeyen radyoaktif atıklarının depolanması, okuduğumuz kadarıyla Akkuyu'da çözülmüş olmasını da hayretle karşılıyoruz.	We are surprised to read that the authorities in Akkuyu power plant seem to have found a solution to the problem of radioactive waste storage, which still remains an unresolved issue around the world.	LocalNGO5	Local NGOs and activists	MERSİN NKP'DEN ; BAKANLIĞA İMZA VE LİMON EYLEMİ - [Accessed 15.01.2017]
488	Akkuyu'da en son teknolojinin kullanılacağı söyleniyor, ancak Japonya'daki Fukuşima felaketi, en son teknolojilerin bile nükleer santrallerde felaketleri engelleyemediğini ortaya koymuştur. Her zaman dediğimiz gibi nükleer santrallerin güvenliğinde son nokta yoktur.	Akkuyu is said to be using the latest technology, but the Fukushima disaster in Japan has revealed that even the latest technologies cannot prevent disasters in nuclear power plants. As we have always said, there is no "final point" of security when it comes to the security of nuclear power plants.	LocalNGO5	Local NGOs and activists	MERSİN NKP'DEN ; BAKANLIĞA İMZA VE LİMON EYLEMİ - [Accessed 15.01.2017]
489	Deprem kuşağında olan bölgemizde, uygulanması planlanan nükleer santrallerin dünyada henüz denenmemiş ve işletmeye alınmamış olması bir kaza yaşanması olasılığını da arttıracağı da bilimsel bir gerçektir.	It is a scientific fact that the nuclear plants that are planned for our region, located on the seismic belt, may lead to unprecedented disasters as these plants were never tried or operated.	LocalNGO5	Local NGOs and activists	MERSİN NKP'DEN ; BAKANLIĞA İMZA VE LİMON EYLEMİ - [Accessed 15.01.2017]

ArgID	Argument	Translation	Who	Role	Source
490	Akkuyu Yer lisansının yeniden onaylanabilmesi için Akkuyu nükleer santralinden en fazla etkilenecek olan Mersin-Adana ve Antalya halkının,ve bu bölgelerde bulunan Meslek odalarının olumlu görüşlerinin alınması gerekliliği bulunmaktadır	In order to be able to reauthorize Akkuyu site permit, it is necessary to take the positive opinions of the locals and the trade associations in Mersin, Adana and Antalya, because they will be most affected from Akkuyu nuclear power plant.	LocalNGO4	Local NGOs and activists	AKKUYU YER LİSANSININ İPTALİNİ İSTİYORUZ. [Accessed 15.01.2017]
491	Bugün Akkuyuya yakın bölgelerde insan nüfusu çok kalabalıklaşmış, tarım çok gelişmiş özelikle Silifke, Aydıncık,Bozyazı ve Anamur da sera tarımı ihracatı Akdeniz tarım ihracatında çok önemli bir yer almaktadır. Özellikle bu bölgede balıkçılık insanların en önemli geçim kaynağı olmuştur. Turizm açısından da bölgede Silifke-Kargıcık ,Silifke-Taşucu-Boğsak,Silifke-Narlıkuyu-Akyar,Silifke-Ovacık ,Gülnar-Ortaburun,Anamur-Melleç Turizm Merkezlerinin yanında Akkuyu bölgesine yakın olan Antalya da turizm önemli gelişmeler kaydedilmiştir.	Today, the population is very crowded in areas close to Akkuyu. Agriculture is very advanced. Especially Silifke, Aydıncık, Bozyazı and Anamur are very important in the export of greenhouse agriculture and Mediterranean agriculture. Especially fishing in this region has been the most important source of people's livelihood. In terms of tourism, important developments have been recorded in Antalya, which is close to the Akkuyu region, alongside the Silifke-Kargicik, Silifke-Tasucu-Bogsak, Silifke-Narlikuyu-Akyar, Silifke-Ovacik, Gülnar-Ortaburun and Anamur-Melleç Tourism Centers.	LocalNGO4	Local NGOs and activists	AKKUYU YER LİSANSININ İPTALİNİ İSTİYORUZ. [Accessed 15.01.2017]
492	Güvensiz,kaza riskleri çok yüksek ve pahalı olan nükleer santraller, ülkemizin enerji sorununu çözemez ve Cari açığını kapatamaz.	Nuclear power plants are unsafe, expensive and have a very high risk of accidents. They cannot solve the energy problem of our country, nor can they finance the current deficit.	LocalNGO4	Local NGOs and activists	MERSİN NÜKLEER KARŞITI PLATFORM İNSAN ZİNCİRİ VE BASIN AÇIKLAMASI [Accessed 15.01.2017]
493	Deprem kuşağında olan Ülkemizde nükleer santraller kurulamaz.	Nuclear power plants cannot be constructed in our country which is located on a seismic belt.	LocalNGO4	Local NGOs and activists	MERSİN NÜKLEER KARŞITI PLATFORM İNSAN ZİNCİRİ VE BASIN AÇIKLAMASI [Accessed 15.01.2017]
494	Akkuyu nükleer santrali Ülkemizi nükleer çöplük deposu haline getirecek,Sağlığımızı bozacak, bölgemizin tarımına,turizmine çok büyük darbe vuracak ve kamu kaynaklarımızı zarara uğratacaktır	Akkuyu nuclear power plant will make our country a nuclear waste repository. It will ruin our health, it will have a great impact on the agriculture and tourism of our region and will harm our public resources.	LocalNGO4	Local NGOs and activists	MERSİN NÜKLEER KARŞITI PLATFORM İNSAN ZİNCİRİ VE BASIN AÇIKLAMASI [Accessed 15.01.2017]
495	Nükleer varsa hamsi mamsi yok. Bizler ailelerimizin geçimini Sinop palamutu ile sağlıyoruz. Balıkçılığımız yok ediliyor. 600 balıkçımız var. 4000 kişi balıkçılıkla geçiniyor. Bu kadar insanı aç bırakmaya kimsenin hakkı yok. Ailelerimizin açlığa mahkum edilmesine izin vermeyeceğiz.	If there is nuclear, there will be no anchovies whatsoever. We make a living by selling Sinop acorns. Our fishery is being destroyed. We have 600 fishermen. 4000 people make a living by fishing. Nobody has the right to let so many people starve. We will not allow our families to be doomed to hunger.	LocalResident19	Local residents	SİNOP'TAN TÜRKİYE'YE NÜKLEERSİZ YAŞAM ROTASI [Accessed 15.01.2017]
496	Binlerce yıl yok olmayan bu nükleer santralleri ne yapacağız?	What will we do with these nuclear power plants that are impossible to dispose of for thousands of years?	LocalNGO1	Local NGOs and activists	SİNOP'TAN TÜRKİYE'YE NÜKLEERSİZ YAŞAM ROTASI [Accessed 15.01.2017]
497	Sizler Sinoplular ve Karadeniz halkı, Çernobil Felaketi`nin etkilerini ülkemizde en derinden yaşayanlarsınız. Ceremesini sizlerin ve çocuklarımızın çekeceği nükleer santrallar; sizler, bizler karşı durduğumuz sürece kurulamaz. Bilimin ve tekniğin insanlığın yararına kullanılması gerektiğini savunan biz mühendisler, ülkemizin enerji üretmek için nükleer santrala ihtiyacı olmadığını söylüyoruz.	You, the people of Sinop and the Black Sea, have suffered the worst effects of the Chernobyl Catastrophe in our country. Nuclear power stations, where you and your children will suffer, cannot be established as long as we, the people, are standing in opposition. We, the engineers who advocate that science and technology should be used for the benefit of mankind, say that our country does not need a nuclear power plant to produce energy.	LocalNGO2	Local NGOs and activists	SİNOP'TA NÜKLEER'E HAYIR MİTİNGİ
498	...tüm dünyada enerji üretimi için yeni yöntemler keşfedilip, insan ve çevre sağlığına duyarlı teknolojiler geliştirilirken; bu eski köhnemiş nükleer santrallara ülkemizin pazar yapılmasına geçit vermeyeceğiz	New technologies for energy production all over the world have been discovered and technologies that are sensitive to human health and environmental have been developed. While these are happening all around the world, we cannot let our country become a market for these old-fashioned nuclear power plants.	LocalNGO2	Local NGOs and activists	SİNOP'TA NÜKLEER'E HAYIR MİTİNGİ
499	Nükleer felaketler, her türlü kazadan farklı olarak, yaşadığımız anla	Nuclear disasters do not only have an impact on the moment they	LocalNGO2	Local NGOs	SİNOP'TA NÜKLEER'E

ArgID	Argument	Translation	Who	Role	Source
	sınırlı etkiler yaratmakla kalmamaktadır. Tüm canlı varlıkların genetiğini değiştiren, binlerce yıla yayılan olumsuz etkiler zinciri oluşmaktadır. Üstelik nükleer santralların olumsuz etkisi kazalarla da sınırlı değildir. Sızıntılar yaşanmakta, toprağınız, havanız, suyunuz radyoaktif hale gelmektedir.	happen. There is a chain of negative effects lasting thousands of years, changing the genetics of all living beings. Moreover, the adverse effects of nuclear power plants are not limited to accidents. There are leakages and our soil, air, and water becomes radioactive.		and activists	HAYIR MİTİNGİ
500	Geçici süreyle ve ucuz işgücü olarak istihdam sağlayacak inşaat işleri dışında nükleer santralların iş kapısı yaratması mümkün değildir. Yaratacağı sınırlı sayıdaki iş imkanını da pekala yenilenebilir enerji kaynaklarıyla sağlayabilirler.	It is not possible for nuclear power plants to create employment except for temporary construction jobs that will provide employment as cheap labour. The limited number of jobs nuclear plants will provide can also be provided by renewable energy resources.	LocalNGO2	Local NGOs and activists	SİNOP'TA NÜKLEER'E HAYIR MİTİNGİ

Annex 2: Categorization of the arguments according to environmental justice principles

ID	Justice Dimension	Governance issue	Stakeholder	Keywords
1	Participation	Informed political choice	Scientist19	Political choice
2	Participation	Informed political choice	AntiNukeNGO10	Referendum
3	Participation	Informed political choice	Scientist19	Political choice
4	Economic Distribution	Impacts on national economy	AntiNukeNGO8	National development
4	Participation	Informed political choice	AntiNukeNGO8	Political choice
5	Participation	Informed political choice	AntiNukeNGO12	Referendum
6	Economic Distribution	Energy security	Govn1	Energy need
6	Ecological Distribution	Risk and safety concerns	Govn1	Accident risk
7	Ecological Distribution	Ecological impacts	AntiNukeNGO6	Waste disposal
8	Ecological Distribution	Ecological impacts	AntiNukeNGO9	Waste disposal
9	Ecological Distribution	Ecological impacts	AntiNukeNGO4	Waste disposal
9	Ecological Distribution	Risk and safety concerns	AntiNukeNGO4	Accident risk
10	Recognition	Appropriateness of the existing legal framework	AntiNukeNGO9	Lack of appropriate legal framework
10	Ecological Distribution	Ecological impacts	AntiNukeNGO9	Waste disposal
11	Creation	National hegemony	AntiNukeNGO12	Nuclear bomb
12	Creation	National hegemony	Scientist17	Nuclear bomb
13	Ecological Distribution	Health impacts	AntiNukeNGO9	Exposure to radiation
14	Ecological Distribution	Ecological impacts	AntiNukeNGO9	Impacts on biodiversity
14	Subsistence	Impacts on livelihood	AntiNukeNGO9	Impacts on small scale fisheries
15	Ecological Distribution	Health impacts	AntiNukeNGO7	Exposure to radiation
16	Participation	Informed political choice	AntiNukeNGO9	Transparency
16	Ecological Distribution	Risk and safety concerns	AntiNukeNGO9	Accident risk
17	Participation	Informed political choice	Scientist4	Transparency
17	Ecological Distribution	Risk and safety concerns	Scientist4	Accident risk
18	Recognition	Appropriateness of the existing legal framework	AntiNukeNGO9	Independent supervision body
19	Recognition	Appropriateness of the existing legal framework	Scientist19	Independent supervision body
20	Economic Distribution	Employment	AntiNukeNGO9	Employment
21	Economic Distribution	Energy security	AntiNukeNGO9	Energy need
22	Economic Distribution	Energy security	AntiNukeNGO9	Energy need
23	Ecological Distribution	Ecological impacts	AntiNukeNGO9	Waste disposal
23	Ecological Distribution	Intergenerational equity concerns	AntiNukeNGO9	Intergenerational equity
23	Ecological Distribution	Risk and safety concerns	AntiNukeNGO9	Accident risk
24	Participation	Informed political choice	AntiNukeNGO9	Political choice
25	Creation	Technological progress	AntiNukeNGO9	Technology transfer
26	Creation	Technological progress	Scientist19	Technology transfer
27	Creation	Technological progress	ProNukeNGO1	Technology transfer
28	Creation	Technological progress	Scientist4	Technology transfer
29	Economic Distribution	Energy independence	Scientist13	Energy independence
29	Creation	National hegemony	Scientist13	Nuclear bomb
29	Creation	Technological progress	Scientist13	Technology transfer
30	Economic Distribution	Employment	AntiNukeNGO9	Employment
31	Economic Distribution	Employment	ProNukeNGO1	Employment
31	Economic Distribution	Impacts on national economy	ProNukeNGO1	National development
31	Creation	Technological progress	ProNukeNGO1	Technology transfer
32	Economic Distribution	Employment	Scientist4	Employment
33	Economic Distribution	Impacts on local economy	Scientist4	Local development
34	Economic Distribution	Employment	Scientist14	Employment
35	Ecological Distribution	Risk and safety concerns	AntiNukeNGO6	Accident risk
36	Economic Distribution	Energy security	AntiNukeNGO9	Energy need
37	Recognition	Appropriateness of the existing legal framework	Scientist4	Requirement of proper EIA
37	Economic Distribution	Energy security	Scientist4	Lack of proper infrastructure
38	Participation	Local participation in decision making	Scientist4	Local participation
39	Economic Distribution	Energy security	ProNukeNGO2	Energy need
40	Economic Distribution	Energy security	Scientist10	Lack of proper infrastructure

40	Economic Distribution	Energy security	Scientist10	Energy need
41	Economic Distribution	Affordability	Scientist4	Electricity price
42	Economic Distribution	Affordability	Scientist3	Electricity price
43	Economic Distribution	Affordability	AntiNukeNGO12	Electricity price
44	Ecological Distribution	Impacts on climate change	Scientist4	Climate change
44	Ecological Distribution	Land use impacts	Scientist4	Land use
45	Ecological Distribution	Land use impacts	Scientist15	Land use
46	Ecological Distribution	Impacts on climate change	Scientist14	Climate change
47	Ecological Distribution	Ecological impacts	LocalNGO6	Impacts on biodiversity
47	Ecological Distribution	Land use impacts	LocalNGO6	Land use
48	Economic Distribution	Energy security	Scientist9	Capability for distributed energy production
49	Economic Distribution	Affordability	Scientist18	Electricity price
51	Economic Distribution	Energy security	AntiNukeNGO12	Energy security
52	Economic Distribution	Energy security	AntiNukeNGO12	Energy security
53	Ecological Distribution	Ecological impacts	AntiNukeNGO3	Impacts on biodiversity
54	Economic Distribution	Energy security	ProNukeNGO2	Energy need
56	Ecological Distribution	Risk and safety concerns	Scientist19	Accident risk
57	Economic Distribution	Affordability	AntiNukeNGO12	Electricity price
57	Ecological Distribution	Risk and safety concerns	AntiNukeNGO12	Accident risk
57	Economic Distribution	Social equity concerns	AntiNukeNGO12	Security risks
58	Recognition	Implementation of existing legal framework	AntiNukeNGO9	Disregard for precedence principle
59	Economic Distribution	Impacts on local economy	AntiNukeNGO9	Impacts on agricultural production
60	Ecological Distribution	Health impacts	LocalNGO6	Exposure to radiation
60	Economic Distribution	Impacts on local economy	LocalNGO6	Accident rumor
60	Ecological Distribution	Risk and safety concerns	LocalNGO6	Accident risk
60	Economic Distribution	Impacts on trade balance	LocalNGO6	Current account deficit
61	Economic Distribution	Impacts on local economy	LocalNGO6	Impacts on agricultural production
61	Ecological Distribution	Risk and safety concerns	LocalNGO6	Accident risk
61	Economic Distribution	Impacts on trade balance	LocalNGO6	Current account deficit
62	Economic Distribution	Impacts on local economy	LocalResident25	Impacts on tourism
62	Economic Distribution	Impacts on local economy	LocalResident25	Accident rumor
63	Ecological Distribution	Ecological impacts	AntiNukeNGO9	Impacts on biodiversity
64	Ecological Distribution	Ecological impacts	AntiNukeNGO1	Impacts on biodiversity
65	Participation	Power inequality in decision making	LocalResident15	Disregard for opponent views
66	Economic Distribution	Impacts on national economy	LocalResident11	National development
68	Participation	Power inequality in decision making	LocalResident13	Disregard for opponent views
69	Creation	Cultural impacts	LocalResident17	Loss of landscape- İdentity/sense of place
69	Participation	Power inequality in decision making	LocalResident17	Disregard for opponent views
69	Economic Distribution	Social equity concerns	LocalResident17	Displacement
70	Economic Distribution	Employment	LocalResident4	Employment
70	Ecological Distribution	Health impacts	LocalResident4	Health Impacts
71	Participation	Power inequality in decision making	LocalResident1	Disregard for opponent views
72	Economic Distribution	Impacts on local economy	LocalResident29	Local development
74	Creation	Cultural impacts	LocalResident8	Loss of landscape- İdentity/sense of place
74	Ecological Distribution	Ecological impacts	LocalResident8	Impacts on biodiversity
74	Economic Distribution	Impacts on local economy	LocalResident8	Impacts on fisheries
75	Economic Distribution	Impacts on local economy	LocalResident23	Impacts on agricultural production
76	Creation	Cultural impacts	LocalResident20	Loss of landscape- İdentity/sense of place
76	Economic Distribution	Employment	LocalResident20	Employment
77	Ecological Distribution	Ecological impacts	LocalResident27	Impacts on biodiversity
77	Ecological Distribution	Health impacts	LocalResident27	Health Impacts
77	Ecological Distribution	Intergenerational equity concerns	LocalResident27	Intergenerational equity
78	Ecological Distribution	Ecological impacts	LocalResident21	Impacts on biodiversity
78	Ecological Distribution	Health impacts	LocalResident21	Health Impacts
79	Ecological Distribution	Health impacts	LocalResident6	Health Impacts
80	Participation	Power inequality in decision making	LocalResident30	Incapability to change or affect decisions
81	Participation	Local participation in decision making	LocalResident5	Local participation
81	Participation	Power inequality in decision making	LocalResident5	Incapability to change or affect decisions
81	Economic Distribution	Social equity concerns	LocalResident5	Displacement
82	Ecological Distribution	Ecological impacts	LocalResident9	Soil contamination

82	Ecological Distribution	Ecological impacts	LocalResident9	Air Pollution
82	Ecological Distribution	Health impacts	LocalResident9	Health Impacts
82	Participation	Power inequality in decision making	LocalResident9	Incapability to change or affect decisions
84	Subsistence	Impacts on livelihood	LocalResident9	Impacts on subsistence farming
84	Economic Distribution	Impacts on local economy	LocalResident9	Rentier income
85	Ecological Distribution	Intergenerational equity concerns	LocalResident25	Intergenerational equity
86	Ecological Distribution	Health impacts	LocalResident10	Health Impacts
87	Creation	Cultural impacts	AntiNukeNGO9	Loss of landscape- İdentity/sense of place
87	Participation	Local participation in decision making	AntiNukeNGO9	Local participation
88	Recognition	Implementation of existing legal framework	AntiNukeNGO12	Problems related to site license and choice of location
89	Ecological Distribution	Health impacts	LocalResident7	Exposure to radiation
89	Economic Distribution	Impacts on local economy	LocalResident7	Impacts on fisheries
90	Economic Distribution	Impacts on local economy	LocalResident3	Accident rumor
91	Creation	Cultural impacts	Scientist19	Loss of landscape- İdentity/sense of place
91	Ecological Distribution	Ecological impacts	Scientist19	Impacts on biodiversity
91	Economic Distribution	Impacts on local economy	Scientist19	Impacts on tourism
92	Ecological Distribution	Health impacts	LocalNGO3	Exposure to radiation
93	Economic Distribution	Employment	LocalResident2	Employment
93	Economic Distribution	Impacts on local economy	LocalResident2	Local development
94	Ecological Distribution	Ecological impacts	AntiNukeNGO9	Impacts on biodiversity
95	Economic Distribution	Impacts on local economy	AntiNukeNGO9	Accident rumor
95	Economic Distribution	Impacts on local economy	AntiNukeNGO9	Impacts on agricultural production
95	Economic Distribution	Impacts on local economy	AntiNukeNGO9	Impacts on fisheries
96	Participation	Power inequality in decision making	AntiNukeNGO9	Disregard for opponent views
97	Creation	Cultural impacts	LocalGovn1	Loss of landscape- İdentity/sense of place
99	Ecological Distribution	Risk and safety concerns	LocalResident2	Accident risk
100	Participation	Local participation in decision making	LocalResident26	Local participation
101	Economic Distribution	Impacts on local economy	LocalResident24	Impacts on fisheries
102	Ecological Distribution	Ecological impacts	LocalResident28	Impacts on biodiversity
102	Economic Distribution	Impacts on local economy	LocalResident28	Impacts on fisheries
102	Economic Distribution	Social equity concerns	LocalResident28	Displacement
103	Economic Distribution	Impacts on national economy	LocalResident12	National development
103	Creation	Technological progress	LocalResident12	Advances in technology
104	Economic Distribution	Impacts on national economy	LocalResident31	National development
104	Creation	National hegemony	LocalResident31	Regional power
105	Economic Distribution	Employment	LocalResident14	Employment
105	Economic Distribution	Impacts on local economy	LocalResident14	Local development
106	Ecological Distribution	Health impacts	AntiNukeNGO9	Health Impacts
106	Ecological Distribution	Risk and safety concerns	AntiNukeNGO9	Accident risk
107	Economic Distribution	Employment	LocalGovn7	Employment
107	Economic Distribution	Impacts on local economy	LocalGovn7	Local development
108	Economic Distribution	Employment	LocalGovn7	Employment
108	Economic Distribution	Impacts on local economy	LocalGovn7	Local development
108	Recognition	Implementation of existing legal framework	LocalGovn7	Problems related to site license and choice of location
109	Recognition	Implementation of existing legal framework	Scientist19	Problems related to site license and choice of location
109	Ecological Distribution	Risk and safety concerns	Scientist19	Accident risk
110	Economic Distribution	Impacts on local economy	Scientist19	Impacts on agricultural production
110	Economic Distribution	Impacts on local economy	Scientist19	Impacts on tourism
111	Economic Distribution	Impacts on local economy	Scientist19	Impacts on tourism
112	Creation	Technological progress	Scientist19	Technology transfer
113	Economic Distribution	Energy security	Scientist19	Energy need
114	Economic Distribution	Energy security	Scientist19	Energy need
115	Economic Distribution	Energy security	Scientist19	Energy need
116	Economic Distribution	Energy security	Scientist19	Energy need
117	Creation	National hegemony	Scientist19	Nuclear bomb
118	Participation	Informed political choice	Scientist19	Political choice
119	Economic Distribution	Impacts on national economy	Scientist19	National development
120	Economic Distribution	Impacts on national economy	Scientist19	National development
121	Economic Distribution	Impacts on national economy	Scientist19	National development
122	Economic Distribution	Energy security	Scientist19	Energy need

125	Economic Distribution	Energy security	Scientist19	Capability for distributed energy production
126	Ecological Distribution	Ecological impacts	Scientist19	Waste disposal
126	Participation	Informed political choice	Scientist19	Political choice
127	Participation	Informed political choice	Scientist19	Political choice
128	Recognition	Implementation of existing legal framework	Scientist19	Problems related to site license and choice of location
129	Participation	Informed political choice	Scientist19	Political choice
130	Economic Distribution	Energy security	Scientist19	Energy need
131	Economic Distribution	Energy security	Scientist19	Lack of proper infrastructure
132	Economic Distribution	Social equity concerns	Scientist19	Security risks
133	Participation	Informed political choice	Scientist19	Ignorance of Ignorance
134	Participation	Informed political choice	Scientist19	Political choice
134	Ecological Distribution	Risk and safety concerns	Scientist19	Accident risk
135	Ecological Distribution	Ecological impacts	Scientist19	Waste disposal
136	Ecological Distribution	Ecological impacts	Scientist19	Waste disposal
136	Ecological Distribution	Intergenerational equity concerns	Scientist19	Intergenerational equity
137	Ecological Distribution	Intergenerational equity concerns	Scientist19	Intergenerational equity
137	Participation	Power inequality in decision making	Scientist19	Disregard for opponent views
138	Participation	Informed political choice	Scientist19	Political choice
141	Economic Distribution	Energy security	Scientist19	Capability for distributed energy production
142	Participation	Informed political choice	Scientist19	Political choice
143	Economic Distribution	Energy security	Scientist19	Energy need
144	Economic Distribution	Energy independence	Scientist19	Energy independence
145	Creation	Technological progress	Scientist19	Technology transfer
146	Creation	National hegemony	Scientist19	Nuclear bomb
147	Ecological Distribution	Ecological impacts	Scientist19	Waste disposal
148	Ecological Distribution	Risk and safety concerns	Scientist19	Accident risk
149	Economic Distribution	Impacts on local economy	Scientist19	Accident rumor
150	Economic Distribution	Impacts on local economy	Scientist19	Impacts on tourism
151	Ecological Distribution	Risk and safety concerns	Scientist19	Accident risk
152	Ecological Distribution	Impacts on climate change	Scientist7	Climate change
152	Ecological Distribution	Ecological impacts	Scientist7	Other emissions
153	Economic Distribution	Impacts on national economy	Scientist7	National development
153	Creation	Technological progress	Scientist7	Advances in technology
154	Creation	Human capital	Scientist7	Human capital
155	Economic Distribution	Energy independence	Scientist7	Energy independence
156	Ecological Distribution	Health impacts	Scientist7	Health Impacts
157	Ecological Distribution	Risk and safety concerns	Scientist7	Accident risk
158	Economic Distribution	Affordability	Scientist7	Electricity price
159	Ecological Distribution	Risk and safety concerns	Scientist7	Accident risk
160	Creation	Technological progress	Scientist7	Technology transfer
161	Ecological Distribution	Impacts on climate change	Scientist7	Climate change
161	Ecological Distribution	Ecological impacts	Scientist7	Air Pollution
162	Ecological Distribution	Health impacts	Scientist7	Health Impacts
163	Ecological Distribution	Ecological impacts	Scientist7	Soil contamination
164	Economic Distribution	Energy independence	Scientist7	Energy independence
164	Economic Distribution	Energy security	Scientist7	Energy need
164	Creation	Technological progress	Scientist7	Technology transfer
165	Participation	Informed political choice	Scientist7	Political choice
166	Recognition	Appropriateness of the existing legal framework	Scientist7	Lack of appropriate legal framework
167	Creation	Human capital	Scientist7	Human capital
168	Creation	Technological progress	Scientist7	Technological capacity
169	Recognition	Implementation of existing legal framework	Scientist7	Disregard for precedence principle
170	Ecological Distribution	Ecological impacts	Scientist7	Waste disposal
171	Ecological Distribution	Ecological impacts	Scientist7	Waste disposal
171	Ecological Distribution	Health impacts	Scientist7	Health Impacts
172	Ecological Distribution	Ecological impacts	Scientist7	Waste disposal
173	Economic Distribution	Impacts on national economy	Scientist7	National development
174	Economic Distribution	Energy independence	Scientist7	Energy independence
175	Economic Distribution	Energy independence	Scientist7	Energy independence
176	Creation	Technological progress	Scientist7	Technology transfer
177	Ecological Distribution	Risk and safety concerns	AntiNukeNGO12	Accident risk
178	Economic Distribution	Energy security	AntiNukeNGO12	Energy need

179	Economic Distribution	Energy independence	AntiNukeNGO5	Energy independence
179	Economic Distribution	Impacts on national economy	AntiNukeNGO5	National development
179	Creation	Peace	AntiNukeNGO5	Peace
180	Economic Distribution	Social equity concerns	AntiNukeNGO5	Social equity
181	Creation	Peace	AntiNukeNGO5	Peace
182	Economic Distribution	Impacts on national economy	AntiNukeNGO5	National development
182	Participation	Informed political choice	AntiNukeNGO5	Political choice
182	Creation	National hegemony	AntiNukeNGO5	Regional power
182	Creation	Peace	AntiNukeNGO5	Peace
183	Economic Distribution	Energy security	AntiNukeNGO5	Capability for distributed energy production
183	Economic Distribution	Social equity concerns	AntiNukeNGO5	Social equity
184	Ecological Distribution	Impacts on climate change	AntiNukeNGO5	Climate change
184	Creation	Peace	AntiNukeNGO5	Peace
185	Economic Distribution	Affordability	AntiNukeNGO12	Electricity price
185	Economic Distribution	Energy security	AntiNukeNGO12	Capability for distributed energy production
186	Economic Distribution	Energy independence	AntiNukeNGO12	Energy independence
187	Economic Distribution	Energy security	AntiNukeNGO12	Capability for distributed energy production
187	Economic Distribution	Energy security	AntiNukeNGO12	Energy need
188	Economic Distribution	Energy security	AntiNukeNGO12	Capability for distributed energy production
188	Participation	Local participation in decision making	AntiNukeNGO12	Local participation
188	Economic Distribution	Social equity concerns	AntiNukeNGO12	Social equity
189	Economic Distribution	Impacts on local economy	AntiNukeNGO12	Impacts on agricultural production
189	Economic Distribution	Impacts on national economy	AntiNukeNGO12	National development
190	Ecological Distribution	Health impacts	Scientist1	Exposure to radiation
190	Ecological Distribution	Intergenerational equity concerns	Scientist1	Intergenerational equity
191	Economic Distribution	Energy security	Scientist12	Capability for distributed energy production
191	Ecological Distribution	Health impacts	Scientist12	Health Impacts
191	Ecological Distribution	Intergenerational equity concerns	Scientist12	Irreversibility
192	Ecological Distribution	Health impacts	AntiNukeNGO12	Health Impacts
193	Recognition	Appropriateness of the existing legal framework	AntiNukeNGO12	Requirement of proper EIA
193	Economic Distribution	Impacts on local economy	AntiNukeNGO12	Local development
194	Participation	Power inequality in decision making	AntiNukeNGO2	Disregard for opponent views
195	Economic Distribution	Affordability	AntiNukeNGO12	Electricity price
195	Creation	Technological progress	AntiNukeNGO12	Advances in technology
196	Economic Distribution	Affordability	AntiNukeNGO12	Electricity price
197	Ecological Distribution	Ecological impacts	Business1	Impacts on biodiversity
197	Economic Distribution	Energy security	Business1	Capacity factor
198	Ecological Distribution	Ecological impacts	AntiNukeNGO12	Waste disposal
198	Economic Distribution	Impacts on local economy	AntiNukeNGO12	Impacts on agricultural production
198	Ecological Distribution	Risk and safety concerns	AntiNukeNGO12	Accident risk
199	Economic Distribution	Energy security	AntiNukeNGO12	Energy need
199	Creation	Peace	AntiNukeNGO12	Peace
200	Participation	Local participation in decision making	AntiNukeNGO12	Local participation
201	Economic Distribution	Employment	AntiNukeNGO12	Employment
201	Ecological Distribution	Health impacts	AntiNukeNGO12	Health Impacts
201	Economic Distribution	Impacts on local economy	AntiNukeNGO12	Impacts on agricultural production
201	Participation	Local participation in decision making	AntiNukeNGO12	Local participation
202	Economic Distribution	Energy security	AntiNukeNGO12	Capability for distributed energy production
203	Economic Distribution	Energy security	AntiNukeNGO12	Capability for distributed energy production
204	Ecological Distribution	Impacts on climate change	Govn2	Climate change
205	Ecological Distribution	Ecological impacts	Govn2	Other emissions
206	Ecological Distribution	Land use impacts	Govn2	Land use
206	Economic Distribution	Social equity concerns	Govn2	Displacement
207	Ecological Distribution	Ecological impacts	Govn2	Waste disposal
207	Economic Distribution	Energy security	Govn2	Energy intensity
208	Ecological Distribution	Ecological impacts	Govn2	Waste disposal
209	Ecological Distribution	Health impacts	Govn2	Exposure to radiation
210	Ecological Distribution	Risk and safety concerns	Govn2	Accident risk
211	Economic Distribution	Energy independence	Govn2	Energy independence

212	Economic Distribution	Energy security	Govn2	Energy diversity
213	Economic Distribution	Affordability	Govn2	Electricity price
214	Economic Distribution	Energy security	Govn2	Base load
215	Ecological Distribution	Impacts on climate change	Govn2	Climate change
216	Creation	Technological progress	Govn2	Technology transfer
217	Creation	Cultural impacts	Govn2	Safety and quality culture
218	Ecological Distribution	Impacts on climate change	Scientist11	Climate change
218	Economic Distribution	Energy security	Scientist11	Energy security
219	Economic Distribution	Impacts on local economy	LocalResident18	Impacts on tourism
220	Economic Distribution	Impacts on national economy	Business10	National development
220	Economic Distribution	Impacts on local economy	Business10	Impacts on tourism
221	Economic Distribution	Impacts on national economy	Scientist20	National development
222	Economic Distribution	Energy independence	Govn3	Energy independence
222	Economic Distribution	Energy security	Govn3	Base load
222	Economic Distribution	Energy security	Govn3	Capacity factor
222	Economic Distribution	Impacts on trade balance	Govn3	Current account deficit
223	Economic Distribution	Impacts on national economy	Scientist16	National development
223	Creation	Technological progress	Scientist16	Advances in technology
224	Ecological Distribution	Ecological impacts	Business2	Waste disposal
224	Economic Distribution	Energy independence	Business2	Energy independence
224	Creation	Technological progress	Business2	Advances in technology
225	Economic Distribution	Impacts on national economy	Business2	National development
226	Economic Distribution	Affordability	ProNukeNGO1	Electricity price
226	Economic Distribution	Energy independence	ProNukeNGO1	Energy independence
226	Economic Distribution	Energy security	ProNukeNGO1	Energy need
226	Economic Distribution	Impacts on national economy	ProNukeNGO1	National development
226	Economic Distribution	Impacts on trade balance	ProNukeNGO1	Current account deficit
227	Economic Distribution	Affordability	Scientist2	Electricity price
227	Economic Distribution	Energy security	Scientist2	Base load
228	Economic Distribution	Energy independence	AntiNukeNGO13	Energy independence
228	Ecological Distribution	Intergenerational equity concerns	AntiNukeNGO13	Intergenerational equity
229	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
229	Ecological Distribution	Health impacts	AntiNukeNGO13	Health Impacts
229	Ecological Distribution	Intergenerational equity concerns	AntiNukeNGO13	Intergenerational equity
229	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Accident risk
229	Economic Distribution	Social equity concerns	AntiNukeNGO13	Social costs
230	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
230	Recognition	Implementation of existing legal framework	AntiNukeNGO13	International law
231	Economic Distribution	Affordability	AntiNukeNGO13	Electricity price
231	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
231	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Accident risk
232	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
232	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Soil contamination
232	Ecological Distribution	Health impacts	AntiNukeNGO13	Health Impacts
233	Ecological Distribution	Impacts on climate change	AntiNukeNGO13	Climate change
233	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Waste disposal
234	Economic Distribution	Affordability	AntiNukeNGO13	Electricity price
234	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Accident risk
234	Creation	Technological progress	AntiNukeNGO13	Technology transfer
235	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
236	Ecological Distribution	Intergenerational equity concerns	AntiNukeNGO13	Intergenerational equity
236	Recognition	Respect for rights	AntiNukeNGO13	Rights
237	Economic Distribution	Energy security	AntiNukeNGO13	Energy need
238	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
238	Recognition	Respect for rights	AntiNukeNGO13	Rights of nature
239	Recognition	Implementation of existing legal framework	AntiNukeNGO13	Disregard for precedence principle
240	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
240	Economic Distribution	Impacts on local economy	AntiNukeNGO13	Impacts on agricultural production
241	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Waste disposal
241	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Accident risk
242	Economic Distribution	Energy independence	AntiNukeNGO13	Energy independence
243	Recognition	Appropriateness of the existing legal framework	AntiNukeNGO13	Lack of appropriate legal framework
243	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Waste disposal

243	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Accident risk
244	Recognition	Appropriateness of the existing legal framework	AntiNukeNGO13	Lack of appropriate legal framework
244	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Waste disposal
245	Recognition	Implementation of existing legal framework	AntiNukeNGO13	Disregard for precedence principle
246	Recognition	Appropriateness of the existing legal framework	AntiNukeNGO13	Lack of appropriate legal framework
247	Ecological Distribution	Impacts on climate change	AntiNukeNGO13	Climate change
247	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
248	Recognition	Implementation of existing legal framework	AntiNukeNGO13	Problems related to site license and choice of location
248	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Earthquake risk
248	Economic Distribution	Social equity concerns	AntiNukeNGO13	Security risks
249	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
249	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Soil contamination
250	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Waste disposal
251	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Tsunami risk
252	Ecological Distribution	Impacts on climate change	AntiNukeNGO13	Climate change
252	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Accident risk
253	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Earthquake risk
254	Creation	Cultural impacts	AntiNukeNGO13	Impacts on cultural heritage
254	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
255	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Impacts on biodiversity
256	Economic Distribution	Energy independence	AntiNukeNGO13	Energy independence
257	Creation	Technological progress	AntiNukeNGO13	Technological capacity
258	Ecological Distribution	Risk and safety concerns	AntiNukeNGO13	Accident risk
258	Economic Distribution	Social equity concerns	AntiNukeNGO13	Liabilities
259	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Waste disposal
259	Ecological Distribution	Health impacts	AntiNukeNGO13	Health Impacts
260	Recognition	Appropriateness of the existing legal framework	AntiNukeNGO13	Lack of appropriate legal framework
261	Ecological Distribution	Health impacts	AntiNukeNGO13	Health Impacts
262	Ecological Distribution	Ecological impacts	AntiNukeNGO13	Waste disposal
262	Ecological Distribution	Health impacts	AntiNukeNGO13	Health Impacts
263	Economic Distribution	Energy independence	AntiNukeNGO10	Energy independence
264	Economic Distribution	Energy independence	AntiNukeNGO10	Energy independence
265	Economic Distribution	Energy security	AntiNukeNGO10	Capability for distributed energy production
266	Economic Distribution	Energy independence	AntiNukeNGO10	Energy independence
266	Economic Distribution	Energy security	AntiNukeNGO10	Base load
267	Ecological Distribution	Impacts on climate change	AntiNukeNGO10	Climate change
268	Ecological Distribution	Impacts on climate change	AntiNukeNGO10	Climate change
269	Ecological Distribution	Risk and safety concerns	AntiNukeNGO10	Accident risk
270	Ecological Distribution	Health impacts	AntiNukeNGO10	Exposure to radiation
270	Participation	Informed political choice	AntiNukeNGO10	Transparency
270	Ecological Distribution	Risk and safety concerns	AntiNukeNGO10	Accident risk
271	Economic Distribution	Affordability	AntiNukeNGO10	Electricity price
271	Economic Distribution	Impacts on national economy	AntiNukeNGO10	National development
272	Economic Distribution	Energy security	AntiNukeNGO10	Energy intensity
272	Economic Distribution	Energy security	AntiNukeNGO10	Energy need
273	Economic Distribution	Affordability	AntiNukeNGO10	Electricity price
273	Economic Distribution	Energy security	AntiNukeNGO10	Energy need
273	Economic Distribution	Impacts on trade balance	AntiNukeNGO10	Current account deficit
274	Economic Distribution	Affordability	AntiNukeNGO10	Electricity price
274	Ecological Distribution	Ecological impacts	AntiNukeNGO10	Waste disposal
274	Ecological Distribution	Risk and safety concerns	AntiNukeNGO10	Accident risk
275	Ecological Distribution	Impacts on climate change	AntiNukeNGO10	Climate change
275	Economic Distribution	Energy security	AntiNukeNGO10	Base load
276	Economic Distribution	Energy independence	AntiNukeNGO10	Energy independence
277	Ecological Distribution	Risk and safety concerns	AntiNukeNGO10	Accident risk
278	Ecological Distribution	Risk and safety concerns	Govn4	Accident risk
279	Ecological Distribution	Risk and safety concerns	Scientist17	Accident risk
280	Ecological Distribution	Health impacts	AntiNukeNGO10	Exposure to radiation
280	Ecological Distribution	Health impacts	AntiNukeNGO10	Health Impacts
281	Participation	Informed political choice	AntiNukeNGO10	Transparency
282	Participation	Informed political choice	AntiNukeNGO10	Transparency

283	Creation	Human capital	AntiNukeNGO10	Human capital
284	Ecological Distribution	Ecological impacts	AntiNukeNGO10	Impacts on biodiversity
284	Ecological Distribution	Intergenerational equity concerns	AntiNukeNGO10	Irreversibility
284	Ecological Distribution	Risk and safety concerns	AntiNukeNGO10	Accident risk
285	Ecological Distribution	Ecological impacts	Scientist8	Impacts on biodiversity
286	Ecological Distribution	Ecological impacts	Scientist8	Impacts on biodiversity
287	Ecological Distribution	Ecological impacts	Scientist8	Impacts on biodiversity
289	Economic Distribution	Energy security	AntiNukeNGO11	Energy need
290	Ecological Distribution	Ecological impacts	AntiNukeNGO11	Impacts on biodiversity
290	Economic Distribution	Social equity concerns	AntiNukeNGO11	Displacement
292	Economic Distribution	Energy security	AntiNukeNGO11	Energy need
293	Economic Distribution	Energy independence	AntiNukeNGO11	Energy independence
293	Economic Distribution	Energy security	AntiNukeNGO11	Base load
294	Economic Distribution	Energy independence	AntiNukeNGO11	Energy independence
294	Economic Distribution	Energy security	AntiNukeNGO11	Base load
295	Economic Distribution	Impacts on national economy	AntiNukeNGO11	National development
296	Economic Distribution	Impacts on national economy	AntiNukeNGO11	National development
298	Recognition	Respect for rights	AntiNukeNGO11	Rights
299	Economic Distribution	Affordability	AntiNukeNGO11	Electricity price
299	Economic Distribution	Energy independence	AntiNukeNGO11	Energy independence
300	Economic Distribution	Impacts on national economy	AntiNukeNGO11	National development
300	Economic Distribution	Social equity concerns	AntiNukeNGO11	Social equity
301	Recognition	Implementation of existing legal framework	AntiNukeNGO11	Problems related to site license and choice of location
302	Recognition	Implementation of existing legal framework	AntiNukeNGO11	Problems related to site license and choice of location
303	Recognition	Appropriateness of the existing legal framework	AntiNukeNGO11	Requirement of proper EIA
303	Participation	Informed political choice	AntiNukeNGO11	Political choice
304	Participation	Informed political choice	AntiNukeNGO11	Referendum
304	Ecological Distribution	Intergenerational equity concerns	AntiNukeNGO11	Intergenerational equity
305	Creation	Technological progress	AntiNukeNGO11	Technology transfer
307	Economic Distribution	Impacts on national economy	ProNukeNGO1	National development
308	Creation	Human capital	ProNukeNGO1	Human capital
308	Ecological Distribution	Risk and safety concerns	ProNukeNGO1	Accident risk
309	Ecological Distribution	Risk and safety concerns	ProNukeNGO1	Accident risk
310	Recognition	Implementation of existing legal framework	ProNukeNGO1	International law
311	Economic Distribution	Energy security	ProNukeNGO1	Energy need
312	Economic Distribution	Energy security	ProNukeNGO1	Energy need
313	Participation	Informed political choice	ProNukeNGO1	Transparency
314	Creation	Technological progress	ProNukeNGO1	Advances in technology
315	Ecological Distribution	Impacts on climate change	ProNukeNGO1	Climate change
315	Ecological Distribution	Ecological impacts	ProNukeNGO1	Environmental impacts
315	Economic Distribution	Energy security	ProNukeNGO1	Energy need
316	Economic Distribution	Energy security	ProNukeNGO1	Base load
316	Economic Distribution	Energy security	ProNukeNGO1	Energy need
317	Ecological Distribution	Ecological impacts	ProNukeNGO1	Impacts on biodiversity
318	Economic Distribution	Energy security	ProNukeNGO1	Energy need
319	Economic Distribution	Energy security	ProNukeNGO1	Capacity factor
319	Economic Distribution	Energy security	ProNukeNGO1	Reliability
320	Economic Distribution	Impacts on national economy	ProNukeNGO1	National development
321	Economic Distribution	Impacts on national economy	Scientist6	National development
322	Economic Distribution	Energy security	Scientist6	Lack of proper infrastructure
322	Economic Distribution	Energy security	Scientist6	Energy need
323	Ecological Distribution	Risk and safety concerns	Scientist6	Accident risk
324	Creation	National hegemony	Scientist5	Nuclear bomb
326	Economic Distribution	Social equity concerns	Scientist18	Social costs
327	Economic Distribution	Affordability	Scientist18	Lifetime costs
328	Economic Distribution	Energy security	Scientist18	Energy security
329	Economic Distribution	Social equity concerns	Scientist18	Social costs
330	Economic Distribution	Energy security	Scientist18	Capacity factor
331	Creation	Peace	Scientist18	Peace
331	Economic Distribution	Social equity concerns	Scientist18	Social equity
332	Economic Distribution	Affordability	Scientist18	Electricity price
333	Ecological Distribution	Health impacts	Scientist14	Exposure to radiation
334	Recognition	Respect for rights	AntiNukeNGO11	Rights

335	Ecological Distribution	Risk and safety concerns	ProNukeNGO1	Accident risk
336	Ecological Distribution	Risk and safety concerns	ProNukeNGO1	Accident risk
337	Creation	National hegemony	ProNukeNGO1	Nuclear bomb
338	Ecological Distribution	Ecological impacts	ProNukeNGO1	Environmental impacts
339	Economic Distribution	Affordability	Scientist18	Lifetime costs
339	Economic Distribution	Energy security	Scientist18	Capacity factor
340	Economic Distribution	Impacts on national economy	ProNukeNGO1	National development
341	Economic Distribution	Energy security	Govn5	Energy diversity
341	Economic Distribution	Impacts on national economy	Govn5	National development
342	Economic Distribution	Energy security	Govn5	Energy need
342	Economic Distribution	Energy security	Govn5	Base load
342	Economic Distribution	Energy security	Govn5	Capacity factor
343	Economic Distribution	Impacts on national economy	Govn5	National development
344	Economic Distribution	Employment	Govn5	Employment
344	Creation	Human capital	Govn5	Human capital
344	Creation	Technological progress	Govn5	Advances in technology
345	Ecological Distribution	Ecological impacts	Govn5	Exposure to radiation
345	Ecological Distribution	Health impacts	Govn5	Exposure to radiation
346	Economic Distribution	Energy security	Govn5	Capacity factor
346	Economic Distribution	Energy security	Govn5	Reliability
347	Economic Distribution	Employment	Govn5	Employment
347	Creation	Technological progress	Govn5	Advances in technology
348	Economic Distribution	Energy independence	Govn5	Energy independence
349	Economic Distribution	Energy security	Govn5	Energy need
350	Economic Distribution	Energy independence	Govn5	Energy independence
350	Economic Distribution	Energy security	Govn5	Energy need
350	Economic Distribution	Energy security	Govn5	Capacity factor
351	Ecological Distribution	Land use impacts	Govn5	Land use
352	Economic Distribution	Energy security	Govn5	Base load
352	Economic Distribution	Energy security	Govn5	Reliability
353	Economic Distribution	Energy security	Govn5	Energy diversity
354	Economic Distribution	Energy security	Govn5	Capacity factor
354	Economic Distribution	Energy security	Govn5	Reliability
355	Economic Distribution	Energy security	Govn5	Reliability
356	Ecological Distribution	Land use impacts	Govn5	Land use
357	Economic Distribution	Energy independence	Govn5	Energy independence
357	Economic Distribution	Impacts on trade balance	Govn5	Current account deficit
358	Creation	Technological progress	Govn5	Technology transfer
359	Economic Distribution	Impacts on local economy	Govn5	Impacts on tourism
360	Economic Distribution	Impacts on local economy	Govn5	Impacts on agricultural production
361	Economic Distribution	Impacts on local economy	Govn5	Impacts on agricultural production
362	Creation	Technological progress	Govn5	Technology transfer
363	Economic Distribution	Energy independence	Govn5	Energy independence
363	Economic Distribution	Energy security	Govn5	Energy security
363	Economic Distribution	Impacts on trade balance	Govn5	Current account deficit
364	Economic Distribution	Energy security	Govn5	Energy need
364	Economic Distribution	Impacts on national economy	Govn5	National development
365	Economic Distribution	Affordability	Govn5	Electricity price
365	Ecological Distribution	Ecological impacts	Govn5	Environmental impacts
365	Economic Distribution	Energy security	Govn5	Energy security
365	Economic Distribution	Energy security	Govn5	Reliability
366	Economic Distribution	Energy security	Govn5	Reliability
367	Ecological Distribution	Impacts on climate change	Govn5	Climate change
368	Ecological Distribution	Ecological impacts	Govn5	Waste disposal
369	Ecological Distribution	Ecological impacts	Govn5	Waste disposal
370	Economic Distribution	Affordability	Govn5	Electricity price
371	Economic Distribution	Employment	Govn5	Employment
372	Economic Distribution	Energy security	Govn5	Energy diversity
373	Creation	Cultural impacts	Govn5	Safety and quality culture
374	Economic Distribution	Affordability	Govn5	Lifetime costs
375	Economic Distribution	Energy security	Govn5	Energy security
376	Ecological Distribution	Ecological impacts	Govn5	Air Pollution
376	Ecological Distribution	Ecological impacts	Govn5	Soil contamination
376	Economic Distribution	Energy independence	Govn5	Energy independence
376	Economic Distribution	Energy security	Govn5	Base load
377	Economic Distribution	Energy security	Business9	Reliability

377	Economic Distribution	Impacts on national economy	Business9	National development
378	Ecological Distribution	Risk and safety concerns	Govn5	Accident risk
380	Ecological Distribution	Impacts on climate change	Govn5	Climate change
381	Economic Distribution	Impacts on national economy	Govn5	National development
382	Economic Distribution	Energy security	Govn5	Energy security
383	Economic Distribution	Impacts on national economy	Govn5	National development
384	Ecological Distribution	Ecological impacts	Govn5	Environmental impacts
384	Economic Distribution	Energy independence	Govn5	Energy independence
384	Economic Distribution	Energy security	Govn5	Energy diversity
384	Economic Distribution	Energy security	Govn5	Energy security
384	Economic Distribution	Energy security	Govn5	Reliability
384	Economic Distribution	Social equity concerns	Govn5	Social costs
385	Ecological Distribution	Impacts on climate change	Govn5	Climate change
385	Economic Distribution	Energy security	Govn5	Base load
385	Economic Distribution	Impacts on trade balance	Govn5	Current account deficit
386	Ecological Distribution	Health impacts	Govn5	Exposure to radiation
387	Ecological Distribution	Health impacts	Govn5	Health Impacts
388	Recognition	Appropriateness of the existing legal framework	Govn5	Legal limits
388	Recognition	Appropriateness of the existing legal framework	Govn5	Requirement of proper EIA
389	Recognition	Appropriateness of the existing legal framework	Govn5	Legal limits
389	Ecological Distribution	Ecological impacts	Govn5	Impacts on biodiversity
390	Economic Distribution	Impacts on local economy	Govn5	Impacts on fisheries
391	Economic Distribution	Impacts on local economy	Govn5	Impacts on tourism
392	Economic Distribution	Impacts on local economy	Govn5	Impacts on agricultural production
393	Ecological Distribution	Ecological impacts	Govn5	Waste disposal
394	Economic Distribution	Energy independence	Govn5	Energy independence
394	Economic Distribution	Impacts on trade balance	Govn5	Current account deficit
394	Economic Distribution	Impacts on trade balance	Govn5	Foreign direct investment
395	Economic Distribution	Energy independence	Govn5	Energy independence
396	Economic Distribution	Impacts on national economy	Govn5	National development
397	Recognition	Implementation of existing legal framework	Govn5	Disregard for precedence principle
398	Economic Distribution	Impacts on national economy	ProNukeNGO2	National development
399	Economic Distribution	Impacts on national economy	ProNukeNGO2	National development
400	Economic Distribution	Energy independence	ProNukeNGO2	Energy independence
401	Ecological Distribution	Risk and safety concerns	ProNukeNGO2	Accident risk
402	Economic Distribution	Affordability	ProNukeNGO2	Electricity price
403	Ecological Distribution	Impacts on climate change	ProNukeNGO2	Climate change
403	Ecological Distribution	Ecological impacts	ProNukeNGO2	Air Pollution
404	Ecological Distribution	Ecological impacts	ProNukeNGO2	Waste disposal
405	Economic Distribution	Energy security	ProNukeNGO2	Energy need
406	Economic Distribution	Employment	ProNukeNGO2	Employment
407	Economic Distribution	Impacts on local economy	ProNukeNGO2	Local development
407	Economic Distribution	Impacts on local economy	ProNukeNGO2	Rentier income
408	Economic Distribution	Energy security	ProNukeNGO2	Reliability
408	Economic Distribution	Energy security	ProNukeNGO2	Base load
409	Subsistence	Impacts on livelihood	ProNukeNGO2	Impacts on subsistence farming
409	Ecological Distribution	Land use impacts	ProNukeNGO2	Land use
409	Economic Distribution	Social equity concerns	ProNukeNGO2	Displacement
410	Ecological Distribution	Ecological impacts	ProNukeNGO2	Noise pollution
410	Ecological Distribution	Ecological impacts	ProNukeNGO2	Impacts on biodiversity
410	Ecological Distribution	Ecological impacts	ProNukeNGO2	Soil contamination
411	Economic Distribution	Affordability	ProNukeNGO2	Lifetime costs
411	Economic Distribution	Energy security	ProNukeNGO2	Capacity factor
412	Economic Distribution	Energy security	ProNukeNGO2	Lack of proper infrastructure
413	Economic Distribution	Energy security	LocalNGO5	Energy need
414	Economic Distribution	Energy independence	LocalNGO5	Energy independence
414	Creation	Technological progress	LocalNGO5	Technology transfer
415	Economic Distribution	Energy security	LocalNGO5	Energy security
416	Recognition	Implementation of existing legal framework	LocalNGO5	Problems related to site license and choice of location
417	Ecological Distribution	Ecological impacts	LocalNGO5	Waste disposal
418	Economic Distribution	Impacts on local economy	LocalNGO5	Local development
419	Economic Distribution	Employment	LocalNGO5	Employment

420	Ecological Distribution	Health impacts	LocalNGO3	Health Impacts
422	Subsistence	Impacts on livelihood	LocalNGO3	Impacts on small scale fisheries
422	Subsistence	Impacts on livelihood	LocalNGO3	Impacts on subsistence farming
423	Ecological Distribution	Ecological impacts	LocalNGO3	Impacts on biodiversity
424	Participation	Informed political choice	LocalNGO3	Transparency
425	Creation	National hegemony	LocalNGO3	Political choice
425	Creation	Peace	LocalNGO3	Peace
427	Participation	Informed political choice	MP3	Referendum
428	Economic Distribution	Energy security	MP3	Energy need
429	Economic Distribution	Affordability	MP3	Electricity price
429	Economic Distribution	Social equity concerns	MP3	Social costs
430	Creation	National hegemony	MP3	Regional power
430	Creation	Peace	MP3	Regional power
432	Ecological Distribution	Ecological impacts	MP3	Environmental impacts
433	Creation	Peace	MP3	Peace
434	Creation	Technological progress	MP3	Advances in technology
435	Ecological Distribution	Health impacts	MP1	Health Impacts
436	Economic Distribution	Impacts on local economy	MP1	Impacts on agricultural production
437	Economic Distribution	Impacts on local economy	MP1	Impacts on fisheries
438	Ecological Distribution	Ecological impacts	MP1	Impacts on biodiversity
439	Economic Distribution	Impacts on local economy	MP1	Impacts on tourism
440	Ecological Distribution	Ecological impacts	MP1	Waste disposal
441	Participation	Informed political choice	MP1	Referendum
442	Ecological Distribution	Ecological impacts	MP1	Waste disposal
443	Participation	Informed political choice	MP1	Political choice
443	Creation	National hegemony	MP1	Nuclear bomb
444	Economic Distribution	Energy security	MP1	Energy need
445	Economic Distribution	Affordability	MP1	Electricity price
446	Economic Distribution	Energy security	MP1	Energy need
446	Participation	Informed political choice	MP1	Political choice
446	Creation	National hegemony	MP1	Nuclear bomb
447	Ecological Distribution	Ecological impacts	MP1	Impacts on biodiversity
448	Ecological Distribution	Ecological impacts	LocalGovn7	Environmental impacts
449	Ecological Distribution	Ecological impacts	LocalGovn7	Waste disposal
449	Ecological Distribution	Risk and safety concerns	LocalGovn7	Accident risk
449	Creation	Technological progress	LocalGovn7	Advances in technology
450	Economic Distribution	Impacts on local economy	LocalGovn7	Impacts on tourism
451	Economic Distribution	Impacts on local economy	LocalGovn7	Local development
452	Economic Distribution	Energy independence	LocalGovn3	Energy independence
452	Economic Distribution	Energy security	LocalGovn3	Energy security
452	Economic Distribution	Impacts on national economy	LocalGovn3	National development
453	Economic Distribution	Affordability	LocalGovn3	Electricity price
453	Economic Distribution	Energy security	LocalGovn3	Reliability
454	Economic Distribution	Energy security	LocalGovn3	Energy need
454	Economic Distribution	Impacts on national economy	LocalGovn3	National development
455	Economic Distribution	Impacts on national economy	Business4	National development
455	Creation	Technological progress	Business4	Technology transfer
456	Ecological Distribution	Risk and safety concerns	Business6	Accident risk
457	Ecological Distribution	Risk and safety concerns	Business8	Earthquake risk
458	Ecological Distribution	Ecological impacts	Business3	Environmental impacts
458	Economic Distribution	Impacts on local economy	Business3	Impacts on agricultural production
458	Ecological Distribution	Risk and safety concerns	Business3	Accident risk
459	Economic Distribution	Affordability	Business7	Electricity price
459	Ecological Distribution	Ecological impacts	Business7	Environmental impacts
459	Economic Distribution	Energy security	Business7	Base load
459	Creation	Technological progress	Business7	Advances in technology
460	Economic Distribution	Employment	Business7	Employment
460	Economic Distribution	Impacts on national economy	Business7	National development
461	Creation	Cultural impacts	Business7	Safety and quality culture
462	Creation	Technological progress	Business7	Advances in technology
462	Economic Distribution	Impacts on trade balance	Business7	Current account deficit
463	Economic Distribution	Employment	Business5	Employment
464	Creation	Technological progress	Business5	Technology transfer
465	Economic Distribution	Impacts on trade balance	Business5	Current account deficit
466	Creation	Technological progress	Business5	Technology transfer
467	Economic Distribution	Employment	LocalGovn2	Employment

467	Economic Distribution	Energy security	LocalGovn2	Energy need
467	Creation	Technological progress	LocalGovn2	Technology transfer
467	Economic Distribution	Impacts on trade balance	LocalGovn2	Current account deficit
468	Economic Distribution	Energy security	LocalGovn6	Energy need
468	Economic Distribution	Impacts on local economy	LocalGovn6	Impacts on tourism
468	Economic Distribution	Impacts on national economy	LocalGovn6	National development
469	Economic Distribution	Energy security	MP4	Energy need
469	Ecological Distribution	Health impacts	MP4	Health Impacts
469	Economic Distribution	Impacts on local economy	MP4	Impacts on agricultural production
470	Economic Distribution	Energy independence	MP2	Energy independence
471	Ecological Distribution	Risk and safety concerns	MP2	Accident risk
472	Ecological Distribution	Health impacts	MP2	Health Impacts
473	Economic Distribution	Energy security	LocalGovn3	Energy need
474	Economic Distribution	Affordability	LocalGovn3	Electricity price
474	Economic Distribution	Energy independence	LocalGovn3	Energy independence
474	Economic Distribution	Impacts on national economy	LocalGovn3	National development
475	Economic Distribution	Energy security	LocalGovn3	Energy need
476	Ecological Distribution	Risk and safety concerns	LocalGovn3	Accident risk
476	Creation	Technological progress	LocalGovn3	Advances in technology
477	Recognition	Implementation of existing legal framework	LocalNGO4	Disregard for law
477	Ecological Distribution	Intergenerational equity concerns	LocalNGO4	Intergenerational equity
478	Economic Distribution	Energy security	LocalNGO4	Energy need
479	Economic Distribution	Affordability	LocalNGO4	Electricity price
479	Ecological Distribution	Ecological impacts	LocalNGO4	Environmental impacts
479	Economic Distribution	Energy independence	LocalNGO4	Energy independence
479	Ecological Distribution	Risk and safety concerns	LocalNGO4	Accident risk
480	Recognition	Implementation of existing legal framework	LocalNGO4	Disregard for law
481	Participation	Local participation in decision making	LocalNGO4	Transparency
482	Economic Distribution	Impacts on local economy	LocalNGO5	Impacts on agricultural production
483	Economic Distribution	Impacts on local economy	LocalNGO5	Impacts on agricultural production
483	Economic Distribution	Social equity concerns	LocalNGO5	Displacement
484	Economic Distribution	Energy security	LocalNGO5	Energy need
485	Recognition	Implementation of existing legal framework	LocalNGO5	Disregard for law
486	Ecological Distribution	Intergenerational equity concerns	LocalNGO5	Irreversibility
487	Ecological Distribution	Ecological impacts	LocalNGO5	Waste disposal
488	Ecological Distribution	Risk and safety concerns	LocalNGO5	Accident risk
488	Creation	Technological progress	LocalNGO5	Advances in technology
489	Ecological Distribution	Risk and safety concerns	LocalNGO5	Earthquake risk
490	Recognition	Implementation of existing legal framework	LocalNGO4	Problems related to site license and choice of location
491	Subsistence	Impacts on livelihood	LocalNGO4	Impacts on small scale fisheries
491	Economic Distribution	Impacts on local economy	LocalNGO4	Impacts on tourism
492	Economic Distribution	Affordability	LocalNGO4	Electricity price
492	Economic Distribution	Energy security	LocalNGO4	Energy need
492	Ecological Distribution	Risk and safety concerns	LocalNGO4	Accident risk
492	Economic Distribution	Impacts on trade balance	LocalNGO4	Current account deficit
493	Ecological Distribution	Risk and safety concerns	LocalNGO4	Earthquake risk
494	Ecological Distribution	Ecological impacts	LocalNGO4	Waste disposal
494	Ecological Distribution	Health impacts	LocalNGO4	Health Impacts
494	Economic Distribution	Impacts on local economy	LocalNGO4	Impacts on agricultural production
494	Economic Distribution	Social equity concerns	LocalNGO4	Social costs
495	Subsistence	Impacts on livelihood	LocalResident19	Impacts on small scale fisheries
496	Ecological Distribution	Intergenerational equity concerns	LocalNGO1	Intergenerational equity
497	Economic Distribution	Energy security	LocalNGO2	Energy need
497	Ecological Distribution	Intergenerational equity concerns	LocalNGO2	Intergenerational equity
498	Creation	Technological progress	LocalNGO2	Advances in technology
499	Ecological Distribution	Ecological impacts	LocalNGO2	Soil contamination
499	Ecological Distribution	Health impacts	LocalNGO2	Health Impacts
499	Ecological Distribution	Intergenerational equity concerns	LocalNGO2	Intergenerational equity
500	Economic Distribution	Employment	LocalNGO2	Employment

Annex 3: Operationalizing multicriteria matrices from the perspectives of the stakeholder groups:

Table A3.1

Stakeholder		SH Group - Govn			Scale		National	
	Issues	BAU	Nuke	NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts		205, 207, 208, 345, 365, 367, 368, 369, 384, 389, 393	368, 376				
	Health impacts		209, 345, 386	387				
	Impacts on climate change		204, 215, 380, 385	204,				
	Intergenerational equity concerns							
	Land use impacts		206, 351		206, 351, 356			
	Risk and Safety Concerns		210, 278, 378, 6					
Economic Distribution	Affordability		213, 365, 370, 374					
	Employment		344, 347, 371					
	Energy independence		211, 341, 222, 348, 350, 357, 363, 384, 394, 395	222, 350, 341, 376	341			
	Energy security		6, 207, 212, 214, 222, 346, 350, 341, 342, 349, 352, 354, 363, 364, 365, 366, 372, 375, 376, 382, 384, 385	346, 366, 376	222, 346, 352, 355, 342, 350, 354, 355, 366, 353			
	Impacts on trade balance		222, 357, 363, 385, 394	222				
	Impacts on local economy		359, 360, 391, 392, 390					
	Impacts on national economy		341, 343, 360, 361, 364, 381, 383, 396					
	Social equity concerns		206, 384		206			
Participation	Local participation in decision making							
	Informed political choice							
	Power inequality in decision making							
Recognition	Appropriateness of the existing legal framework		388, 389					
	Implementation of existing legal framework		388, 389, 397					
	Respecting rights							
Subsistence	Impacts on livelihood							
Creation	Cultural impacts		217, 373					
	Human capital		344,					
	National hegemony							
	Peace							
	Technological progress		216, 347, 344, 358, 362					

Table A3.2								
Stakeholder		SH Group: Pro-Nuke NGO			Scale		National	
	Preliminary Criteria	BAU	Nuke	NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts	315	315, 403, 338, 404	315, 403	317, 410			
	Health impacts							
	Impacts on climate change	315	315, 403	315, 403				
	Intergenerational equity concerns							
	Land use impacts			409	409			
	Risk and Safety Concerns	308	308, 335, 401, 309, 336					
Economic Distribution	Affordability		226, 411, 402	226, 402	411			
	Employment		31, 406					
	Energy independence	226	226, 400	226, 400	226			
	Energy security	226, 311	39, 226, 54, 315, 319, 411	54, 39, 405	39, 312, 316, 318, 319, 405, 408, 411	54, 412		
	Impacts on trade balance			226	226			
	Impacts on local economy		407					
	Impacts on national economy		226, 320, 398, 307, 340, 399					
	Social equity concerns			409	409			
Participation	Local participation in decision making							
	Informed political choice				313			
	Power inequality in decision making							
Recognition	Appropriateness of the existing legal framework		310					
	Implementation of existing legal framework		310					
	Respecting rights							
Subsistence	Impacts on livelihood	409		409	409			
Creation	Cultural impacts							
	Human capital		308					
	National hegemony		337					
	Peace							
	Technological progress		27, 31, 314, 226					

Table A3.3								
Stakeholder		SH Group - Business			Scale		National	
	Issues	BAU	Nuke	NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts		224, 458, 459		197			
	Health impacts							
	Impacts on climate change							
	Intergenerational equity concerns							
	Land use impacts							
	Risk and Safety Concerns		456, 457, 458					
Economic Distribution	Affordability		459					
	Employment		460, 463					
	Energy independence		224	224				
	Energy security		377, 459		197			
	Impacts on trade balance		462, 465					
	Impacts on local economy		220, 458, 460					
	Impacts on national economy		220, 225, 277, 455					
	Social equity concerns							
Participation	Local participation in decision making							
	Informed political choice							
	Power inequality in decision making							
Recognition	Appropriateness of the existing legal framework							
	Implementation of existing legal framework							
	Respecting rights							
Subsistence	Impacts on livelihood							
Creation	Cultural impacts		461					
	Human capital							
	National hegemony							
	Peace							
	Technological progress	224	224, 225, 455, 459, 462, 464, 466					

Table A3.4								
Stakeholder		SH Group - Academics				Scale		
	Issues	BAU	Nuke		NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts		91, 135, 126, 147, 285, 286, 287	152, 170, 161, 163, 171, 172		126			
	Health impacts		190, 191, 333	156, 162, 171					
	Impacts on climate change		46	44, 152, 161, 218	328	218			
	Intergenerational equity concerns		136, 337, 190, 191						
	Land use impacts		44, 45						
	Risk and Safety Concerns		17, 56, 109, 151, 133, 134, 148, 323	157, 159, 279					
Economic Distribution	Affordability		327	41, 42, 158	327, 329	49, 332, 339, 126			
	Employment		32, 34						
	Energy independence	122	29, 144	155, 168, 174, 175					
	Energy security	120, 122, 322	37, 40, 115, 48, 113, 130, 131, 191, 143, 328	164	328, 123				
	Impacts on trade balance								
	Impacts on local economy		110, 149, 111, 150	33					91, 150
	Impacts on national economy	119	321	153, 173, 221, 223					
	Social equity concerns		132, 326		329	531			
Participation	Local participation in decision making		38						
	Informed political choice		1, 3, 17, 118, 126, 127, 129, 133, 138, 134, 142, 165						
	Power inequality in decision making		137						
Recognition	Appropriateness of the existing legal framework		19, 37	166					
	Implementation of existing legal framework		109, 128						
	Respecting rights								
Subsistence	Impacts on livelihood								
Creation	Cultural impacts		91						
	Human capital		154, 166						
	National hegemony		12, 29, 117, 146, 324						
	Peace					331			
	Technological progress		2, 29, 112, 145	28, 153, 160, 164, 168, 176, 223					

Table A3.5								
Stakeholder		SH Group: Anti-Nuke NGOs			Scale		National	
	Issues	BAU	Nuke	NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts		229, 230, 231, 232, 233, 235, 240, 241, 243, 244, 247, 249, 250, 254, 255, 259, 262, 7, 8, 9, 10, 14, 23, 53, 63, 64, 94, 274, 284	53	238, 53, 290	238, 53		
	Health impacts		229, 232, 259, 261, 262, 13, 15, 106, 192, 201, 270, 280	201				
	Impacts on climate change	184	233, 247, 252, 184, 267, 275		268, 275	275	184	
	Intergenerational equity concerns		229, 236, 23, 284, 304					
	Land use impacts							
	Risk and Safety Concerns		229, 231, 234, 241, 243, 248, 251, 253, 258, 9, 16, 23, 35, 57, 106, 177, 198, 269, 270, 274, 277, 284					
Economic Distribution	Affordability		231, 43, 57, 185, 196, 271, 274, 299	185	43, 185, 195, 196, 273, 274	195		
	Employment		20, 30, 201	201				
	Energy independence		256, 179, 264, 276, 299	276, 293, 294	228, 242, 266	228, 242	228, 242, 186,	
	Energy security	51, 199, 289, 293	237, 21, 22, 36, 52, 178, 183, 265, 272, 275, 290	272, 294	237, 21, 22, 178, 183, 185 187, 266, 292, 294, 293	237, 52, 199, 273	13, 199, 187, 202, 203	
	Impacts on trade balance				273	273,		
	Impacts on local economy		240, 4, 179, 182	189, 201		189		193
	Impacts on national economy	4, 295	4, 179, 182, 271		295, 300	189, 295, 297		
	Social equity concerns	180	229, 248, 258, 57, 183, 188	188	290, 300		183, 188	
Participation	Local participation in decision making		87, 188, 200, 201	188, 201		200	188	
	Informed political choice	4	2, 4, 16, 24, 182, 270, 281, 282, 303, 304		4,		24	
	Power inequality in decision making		96, 194					
Recognition	Appropriateness of the existing legal framework		243, 244, 246, 260, 10, 18, 193, 303					
	Implementation of existing legal framework		230, 239, 245, 248, 58, 88					
	Respecting rights	298, 334	236, 301, 302, 334		238	238		
Subsistence	Impacts on livelihood							
Creation	Cultural impacts		254, 87					87
	Human capital							
	National hegemony		11, 182					
	Peace	184	179, 181, 182, 184, 283				184, 199	
	Technological progress	306	234, 25, 305		195, 305, 306	105, 305, 306		

Table A3.6								
Stakeholder		SH Group - MPs			Scale		National	
	Issues	BAU	Nuke	NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts		438, 440, 442, 447		432			
	Health impacts		435, 469, 472					
	Impacts on climate change							
	Intergenerational equity concerns							
	Land use impacts							
	Risk and Safety Concerns		471					
Economic Distribution	Affordability		429		445			
	Employment							
	Energy independence		470					
	Energy security		428, 430, 446		444			
	Impacts on trade balance							
	Impacts on local economy		436, 437, 439, 469					
	Impacts on national economy							
	Social equity concerns		429					
Participation	Local participation in decision making							
	Informed political choice		427, 441, 442, 443, 446					
	Power inequality in decision making							
Recognition	Appropriateness of the existing legal framework							
	Implementation of existing legal framework							
	Respecting rights							
Subsistence	Impacts on livelihood							
Creation	Cultural impacts							
	Human capital							
	National hegemony		430, 443, 446					
	Peace		430, 446					
	Technological progress		434,					

Table A3.7								
Stakeholder		SH Group - Local NGOs			Scale		Local	
	Issues	BAU	Nuke	NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts		47, 417, 423, 424, 479, 487, 494, 499		498			423
	Health impacts		60, 81, 420, 494, 499		498			
	Impacts on climate change							
	Intergenerational equity concerns		477, 486, 496, 497, 499					
	Land use impacts		47					
	Risk and Safety Concerns		60, 61, 479, 488, 489, 492, 493					
Economic Distribution	Affordability		479, 492					
	Employment		419, 500		500			
	Energy independence		414, 479					
	Energy security		413, 478, 484, 492, 497					
	Impacts on trade balance		60, 61, 492					60, 61
	Impacts on local economy		60, 61, 418, 482, 483, 491					60, 418
	Impacts on national economy							
	Social equity concerns		81, 483, 494					
Participation	Local participation in decision making		81, 481					
	Informed political choice		424					
	Power inequality in decision making		81					
Recognition	Appropriateness of the existing legal framework							
	Implementation of existing legal framework		416, 477, 480, 485, 490					
	Respecting rights							
Subsistence	Impacts on livelihood		14, 422, 491					
Creation	Cultural impacts							
	Human capital							
	National hegemony		425					
	Peace		425					
	Technological progress		414, 488, 498		498			

Table A3.8								
Stakeholder		SH Group - Local residents			Scale		Local	
	Issues	BAU	Nuke	NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts		74, 77, 78, 82, 102	75				
	Health impacts		70, 71, 77, 78, 79, 82, 86, 89	71, 75				79
	Impacts on climate change							
	Intergenerational equity concerns		77, 85					
	Land use impacts							
	Risk and Safety Concerns		99					
Economic Distribution	Affordability							
	Employment		76, 70, 93, 105					93
	Energy independence							
	Energy security							
	Impacts on trade balance							
	Impacts on local economy		62, 74, 89, 84, 90, 101, 102, 72, 93, 105, 219	75				79, 93
	Impacts on national economy		66, 104, 103					
	Social equity concerns		69, 102					
Participation	Local participation in decision making		100					
	Informed political choice							
	Power inequality in decision making		65, 68, 69, 71, 80, 82	71				
Recognition	Appropriateness of the existing legal framework							
	Implementation of existing legal framework							
	Respecting rights							
Subsistence	Impacts on livelihood		14, 84, 495					
Creation	Cultural impacts		69, 74, 76					
	Human capital							
	National hegemony		104					
	Peace							
	Technological progress		103					

Table A3.9			
Stakeholder	SH Ggroup - Local Govn	Scale	

	Issues	BAU	Nuke	NonRenw	Renw	TechFix	NewImg	LocDev
Ecological Distribution	Ecological impacts		448, 449					
	Health impacts							
	Impacts on climate change							
	Intergenerational equity concerns							
	Land use impacts							
	Risk and Safety Concerns		449, 476					
Economic Distribution	Affordability		453, 474					
	Employment		107, 108, 467					
	Energy independence		452, 474					
	Energy security		108, 452, 453, 454, 467, 468, 473, 475					
	Impacts on trade balance		467					
	Impacts on local economy		107, 108, 450, 451, 468					
	Impacts on national economy		452, 453, 454, 468, 474					
	Social equity concerns							
Participation	Local participation in decision making							
	Informed political choice							
	Power inequality in decision making							
Recognition	Appropriateness of the existing legal framework							
	Implementation of existing legal framework		108					
	Respecting rights							
Subsistence	Impacts on livelihood							
Creation	Cultural impacts		97					
	Human capital							
	National hegemony							
	Peace							
	Technological progress		449, 467, 476					

Annex 4: Résumé de thèse

La croissance sans précédent de la consommation et de la production a accru les besoins en énergie et en matières premières, l'utilisation des ressources atteignant des niveaux exceptionnellement élevés dans le monde entier. Aujourd'hui, contrairement à la conviction que l'économie "dématérialisera" et que la croissance économique sera dissociée des ressources naturelles et des impacts environnementaux, l'extraction des ressources (pétrole, cuivre, or, uranium et biomasse, par exemple) continue de se développer (JW Moore, 2000). Cela enflamme souvent les mouvements de justice environnementale contre des projets tels que les barrages, les centrales thermiques et nucléaires, les mines, la pêche industrielle et l'élimination des déchets (Martinez-Alier, 2002, 2012).

Globalement, les conflits de distribution écologique se produisent à différents endroits du monde, pour une variété de thèmes et à plusieurs échelles. Certains parlent de la répartition inégale des risques liés aux déchets dangereux (par exemple, l'affaire Love Canal aux États-Unis); d'autres impliquent l'extraction de métaux et de minéraux aux dépens de la destruction des moyens de subsistance des peuples autochtones (par exemple, le conflit des mines d'argent et d'or de Wirikuta au Mexique); et quelques autres concernent la privatisation de biens communs tels que les pâturages (par exemple, le cas des Sarıkeçili Nomads en Turquie). Dans de nombreux cas, les conflits résultent non seulement de la répartition inégale des coûts et des avantages économiques et écologiques, mais également du manque de participation à la prise de décision et de la reconnaissance des droits et des identités (Schlosberg, 2007). De plus, alors que certains conflits, tels que le changement climatique, sont observés à l'échelle mondiale, d'autres à l'échelle locale, comme dans le cas de la construction d'éoliennes près d'un petit village.

Les conflits de distribution écologiques résultant du métabolisme social croissant du monde et l'expansion des frontières des marchandises qui en résulte, sont confrontés à des défis importants pour la gouvernance, en particulier lorsqu'il existe des interactions multiples, entre la nature et les individus qui possèdent de systèmes de valeurs différents, à travers différentes échelles (du local au global). L'interaction actuelle entre les échelles semble être définie par le pouvoir juridictionnel - une manière qui favorise les échelles internationales et / ou nationales, qui négligent les processus en cours qui se déroulent à d'autres échelles. Il existe une disparité entre les échelles où les décisions sont prises et les actions sont effectuées. Par conséquent, un mécanisme de gouvernance, avec non seulement des propriétés participatives prenant compte des différents systèmes de valeurs, mais avec des mécanismes de coordination entre plusieurs échelles, devient nécessaire.

Dans la littérature scientifique, les cadres d'évaluation délibératifs multicritères / multipartites sont présentés comme des outils utiles de gouvernance des conflits et d'aide à la décision. Ces cadres sont importants pour appuyer les décisions concernant des problèmes politiques présentant des objectifs contradictoires dans différents domaines ou dimensions (tels que les domaines économique, social, environnemental, institutionnel ou culturel) et entre différentes parties prenantes (Montis, Toro, Droste-Franke, Omann, etc.). Stagl, 2000). Ils permettent la comparaison simultanée de plusieurs options politiques, en prenant en compte un large éventail de critères (ou de questions de gouvernance), et contribuent donc à « aider à surmonter la barrière

de critère unique qui impose souvent un contexte irréaliste dans le domaine de l'aide à la décision » (Banville , Landry, Martel et Boulaire, 1998, page 16). En principe, les cadres multicritères participatifs sont très capables d'intégrer de multiples perspectives et différents langages d'évaluation, grâce à leur capacité à concilier incommensurabilité et pluralisme, de manière transparente. Ils sont donc utilisés pour évaluer les compromis et les conséquences de décisions complexes. Comme Gamboa (2008, p. 138) le souligne, « la structure multicritère peut être considérée comme une expression sociale, qui met en évidence à la fois la diversité des points de vue et les effets des alternatives sur différentes dimensions (…) (Il est très utile afin de favoriser à la fois la discussion et la pratique de la démocratie délibérative ». Dans ce contexte, la littérature multicritère participative bien établie et diversifiée (Banville, Landry, Martel et Boulaire, 1998; Chamaret, O'Connor, et Recóché, 2007; De Marchi, Funtowicz, Lo Cascio et Munda, 2000; Munda, 2008; O'Connor et Spangenberg, 2008) propose une évaluation multi-acteurs viable et des mécanismes de gouvernance pour les conflits socio-environnementaux.

À cette arrière-plan, cette thèse maintient que les méthodes d'évaluation multicritères délibératives et multi-acteurs pourraient ouvrir de nouvelles voies pour les mécanismes de gouvernance environnementale pour les conflits avec des interactions transversales et vise à montrer l'importance d'une perspective multi-échelle dans un cadre multicritère. Dans une tentative d'opérationnaliser cet objectif, elle utilise le cas conflictuel de la production d'énergie nucléaire en Turquie et l'évalue aux échelles nationales et locales dans le contexte national et mondial des mouvements de justice environnementale. Elle démontre que l'élaboration d'un problème de décision conflictuel par une méthode multicritère / multi-échelle est utile pour i) identifier les défis résultant des interactions entre les parties prenantes et ii) les présenter de manière transparente et compréhensible.

Cet exercice d'évaluation multicritères, mené d'une perspective à l'échelle, est ensuite utilisé pour identifier et explorer les sources de tensions, divergences et conflits d'intérêts entre parties prenantes, étant donné l'organisation transparente de diverses catégories d'informations. Dans l'ensemble, l'analyse aide à comprendre les conflits qui surviennent en raison des interactions complexes entre les échelles et ceux qui résultent de la pluralité des valeurs (O'Connor et al., 2006). Un tel cadrage du problème montre de manière explicite pourquoi et comment le choix d'une échelle particulière pour une décision politique aurait de l'importance pour un mécanisme de gouvernance efficace dans la médiation de conflits. Il souligne l'identification d'au moins trois types de sources de conflit d'échelle entre les parties prenantes nationales et locales:

> i) Choix de l'échelle compte pour proposer différents ensembles d'alternatives à des fins de comparaison: les parties prenantes locales et nationales proposent différents ensembles d'options politiques.
>
> ii) Choix de l'échelle est important pour la définition des priorités: les parties prenantes locales et nationales diffèrent par les questions de gouvernance qu'elles accordent la priorité.
>
> iii) Choix de l'échelle est important pour la perception d'un problème de gouvernance particulier: les

parties prenantes locales et nationales peuvent percevoir différemment l'ampleur ou la taille d'un impact particulier.

Ces trois types de sources de conflit, identifiés par le biais de cet exercice multicritères, montrent bien à quel point les perceptions, les valeurs et les priorités des personnes sont affectées par leur taille et expliquent pourquoi un ensemble unique de solutions proposées par les parties prenantes dans une échelle particulière crée des résultats inefficaces et / ou indésirables dans d'autres échelles. Nul doute que l'identification des sources de conflit liées à l'échelle ainsi que les liens et les interactions entre les parties prenantes locales et nationales est une étape nécessaire pour trouver des voies de médiation pour un conflit de distribution écologique spécifique. On espère qu'une telle formulation du problème aidera à traiter, voire à résoudre complètement, les trois types de sources de conflits liés à l'échelle identifiés ci-dessus, comme suit:

i) Premièrement, grâce à l'exercice multicritère, un ensemble d'options politiques plus complet peut être identifié - ces options peuvent être proposées par des acteurs à différentes échelles.

ii) Ensuite, le problème du choix social peut être traité à l'aide d'un ensemble plus large de problèmes de gouvernance, mis en avant par les parties prenantes nationales et locales.

iii) Enfin, s'il est mené de manière participative et délibérative, l'exercice multicritères est en mesure de réunir les membres des différents groupes de parties prenantes et que l'exercice lui-même peut devenir un processus collaboratif d'apprentissage et de gestion des conflits.

À cet égard, le recours à une approche multicritères d'une perspective à l'échelle pour encadrer le conflit sur les centrales nucléaires en Turquie fournit des informations importantes et des avantages substantiels, en termes de définition plus précise des problèmes et de compréhension plus complète des problèmes actuels, d'analyses améliorées des processus dépendants de l'échelle et comment les perceptions et les perspectives des parties prenantes dépendent de leur échelle. Globalement, cela permet de mieux comprendre les relations inter-échelles entre les processus environnementaux, sociaux et économiques, et il est plus que probable d'intégrer différentes perspectives de différentes échelles dans le processus de prise de décision. Bien que la meilleure compréhension d'un problème ne signifie pas nécessairement qu'une meilleure décision politique sera prise, «elle fournit une base solide pour prendre de meilleures décisions et pour responsabiliser les décideurs» (Reid et al., 2006, p. 1) .

La thèse est divisée en deux parties principales. La première partie propose un examen théorique, empirique et méthodologique des conflits environnementaux rencontrés dans le monde, ainsi qu'un cadre multicritères afin de mieux situer l'importance de l'ampleur de ces conflits. La deuxième partie analyse un cas de conflit du monde réel - l'introduction de l'énergie nucléaire dans le portefeuille énergétique de la Turquie - pour montrer comment une approche multicritères / multipartites avec une vaste étendue d'échelles spatiales peut servir d'évaluation et de gouvernance potentielle. outil pour un conflit de distribution écologique.

Pour ouvrir la voie à une discussion fondée sur les conflits de distribution écologique, le chapitre 1 de la première partie tentera d'abord de répondre aux questions de ce qui est distribué et de la manière dont il est

distribué, et de lier cette discussion à la problématique de la justice environnementale. Il présentera également un bilan empirique des conflits écologiques dans le monde en présentant l'état des luttes récentes en matière de justice environnementale décrites dans EJAtlas. Les liens intersectoriels au sein de conflits environnementaux seront également discutés sur la base d'exemples spécifiques, choisis à nouveau avec précaution dans EJAtlas.

Le chapitre 2 tentera de positionner les outils d'évaluation multicritères en tant que procédure d'évaluation et de gouvernance de conflit à plusieurs échelles. À cette fin, nous commencerons par un bref aperçu théorique de la gouvernance à plusieurs échelles pour les interactions homme-environnement, en essayant d'abord de répondre aux questions suivantes: quelle est l'échelle, pourquoi et comment at-elle une importance? Ensuite, il présentera brièvement les propriétés des méthodes multicritères multipartites, en décrivant brièvement trois cadres de travail multicritères délibérants et multicritères: L'évaluation multicritères sociale (SMCE) (Munda, 2004), Cartographie multicritères (MCM) (Coburn & Stirling, 2016) et la matrice de délibération dans le cadre INTEGRAAL (O'Connor et al., 2006). En s'appuyant sur le cadre INTEGRAAL, ce chapitre se terminera par une présentation sur la manière dont une approche multicritères / multi-acteurs peut servir d'évaluation et d'outil de gouvernance potentiel pour les conflits de distribution écologique ayant une grande portée à des échelles spatiales.

La deuxième partie commence par le chapitre 3, qui présente la situation actuelle des conflits liés à la distribution de l'environnement en Turquie, en utilisant la carte turque de la justice environnementale. Ceci sera suivi d'un bref compte rendu du statu quo de la gouvernance environnementale en Turquie. Ensuite, un bref résumé des conflits liés à l'énergie sera présenté, en se concentrant sur quatre principaux types de conflits sur la production d'énergie: i) charbon et combustibles fossiles ii) énergie hydraulique, iii) énergies renouvelables telles que l'énergie éolienne, solaire et géothermique, et iv) nucléaire. Enfin, le chapitre se terminera par une tentative d'identification des interactions croisées dans les conflits liés à l'énergie en Turquie.

Le chapitre 4 examinera d'abord l'évolution historique de l'énergie nucléaire dans le monde et présentera les tendances récentes. Ensuite, il se concentrera sur le cas particulier de la Turquie, en racontant d'abord son histoire du nucléaire pour tenter de donner un contexte au débat sur l'énergie nucléaire. Le chapitre 5 utilisera ce débat pour montrer que le cadre multicritères / à échelles multiples présenté au chapitre 2 peut offrir un mécanisme de gouvernance des conflits au service de la justice environnementale. À cette fin, le chapitre 5 est divisé en trois parties: premièrement, une analyse exploratoire qualitative et textuelle du débat nucléaire en Turquie est présentée pour identifier les parties prenantes, les alternatives politiques et les problèmes de gouvernance concernés. Ensuite, les jugements de chaque acteur, dans chaque alternative politique et dans toutes les questions de gouvernance sont présentés dans la matrice de délibération en trois dimensions conçue par O'Connor et al. (2006). Enfin, les principaux types de conflits identifiés liés à l'échelle sont présentés, afin de montrer i) comment et dans quelle mesure l'importance de l'échelle est déterminante dans la gestion des conflits de distribution écologique et ii) comment un cadre multicritère offre des voies pour résoudre correctement ces conflits.

En réunissant différentes parties prenantes pour discuter de questions conflictuelles à différentes échelles et en prenant en compte différents langages d'évaluation, cette thèse vise à contribuer à la littérature sur l'évaluation multicritère / multipartite délibérante, en particulier dans la définition et la compréhension des conflits croisés. Le cadre de délibération élaboré tente d'améliorer les liens entre les niveaux local et mondial et de générer un processus tenant compte des besoins tant environnementaux que socio-économiques. En tant que telle, l'étude vise à contribuer au changement d'orientation souhaité des politiques environnementales allant de la gestion environnementale technocratique à la gouvernance environnementale participative.

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Titre : Gouvernance d'échelle transversale utilisant les méthodes d'évaluation multicritères, multi-acteurs pour arbitrer les conflits environnementaux : Le cas des centrales nucléaires en Turquie

Mots clés : Justice Environnementale ; Methodes Multi-critères ; Conflits Environnementaux ; Turquie ; Gouvernance Environmental

Résumé : Les conflits de distribution écologiques résultant du métabolisme social croissant du monde et l'expansion des frontières des marchandises qui en résulte, sont confrontés à des défis importants pour la gouvernance, en particulier lorsqu'il existe des interactions multiples, entre la nature et les individus qui possèdent de systèmes de valeurs différents, à travers différentes échelles (du local au global). L'interaction actuelle entre les échelles semble être définie par le pouvoir juridictionnel - une manière qui favorise les échelles internationales et / ou nationales, qui négligent les processus en cours qui se déroulent à d'autres échelles. Il existe une disparité entre les échelles où les décisions sont prises et les actions sont effectuées. Par conséquent, un mécanisme de gouvernance, avec non seulement des propriétés participatives prenant compte des différents systèmes de valeurs, mais avec des mécanismes de coordination entre plusieurs échelles, devient nécessaire

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Title : Cross-scale governance using multi-criteria, multi-stakeholder evaluation methods to mediate environmental conflicts: The case of nuclear power plants in Turkey

Keywords : Environmental Justice; Multicriteria Methods; Environmental Conflicts; Turkey, Environmental Governance

Abstract : The ecological distribution conflicts arising from the growing social metabolism of the world and the resulting expansion of the commodity frontiers pose important challenges for governance, especially when there are multiple interactions between the nature and people holding different value systems, across different scales (from local to global). The current interaction between scales seems to be defined by the jurisdictional power – a manner that is inclined to favour the international and/or national scales, which overlook the ongoing processes taking place in other scales. Such a discrepancy gives rise to a mismatch between the scales where the decisions are made and actions are undertaken, calling for a governance mechanism – one with participatory properties taking into account the different value systems and coordination mechanisms across multiple scales.

At this background, this thesis argues that deliberative and multi-stakeholder multi-criteria evaluation methods might open new avenues for environmental governance mechanisms for the conflicts with cross-scale interactions and aims to show the importance of a multi-scale perspective within multi-criteria framework. In an attempt to operationalize this aim, it uses the conflicted case of nuclear energy production in Turkey and assesses it at national and local scales within the context of national and global environmental justice movements. It is shown that framing a conflicted decision-making problem through multi-scale/multi-stakeholder method is helpful: i) in identifying the challenges resulting from the cross-scale interactions between stakeholders and ii) in presenting them in a transparent and comprehensible manner.