Energy -SHIFTS

ENERGY SOCIAL SCIENCES & HUMANITIES INNOVATION FORUM TARGETING THE SET-PLAN

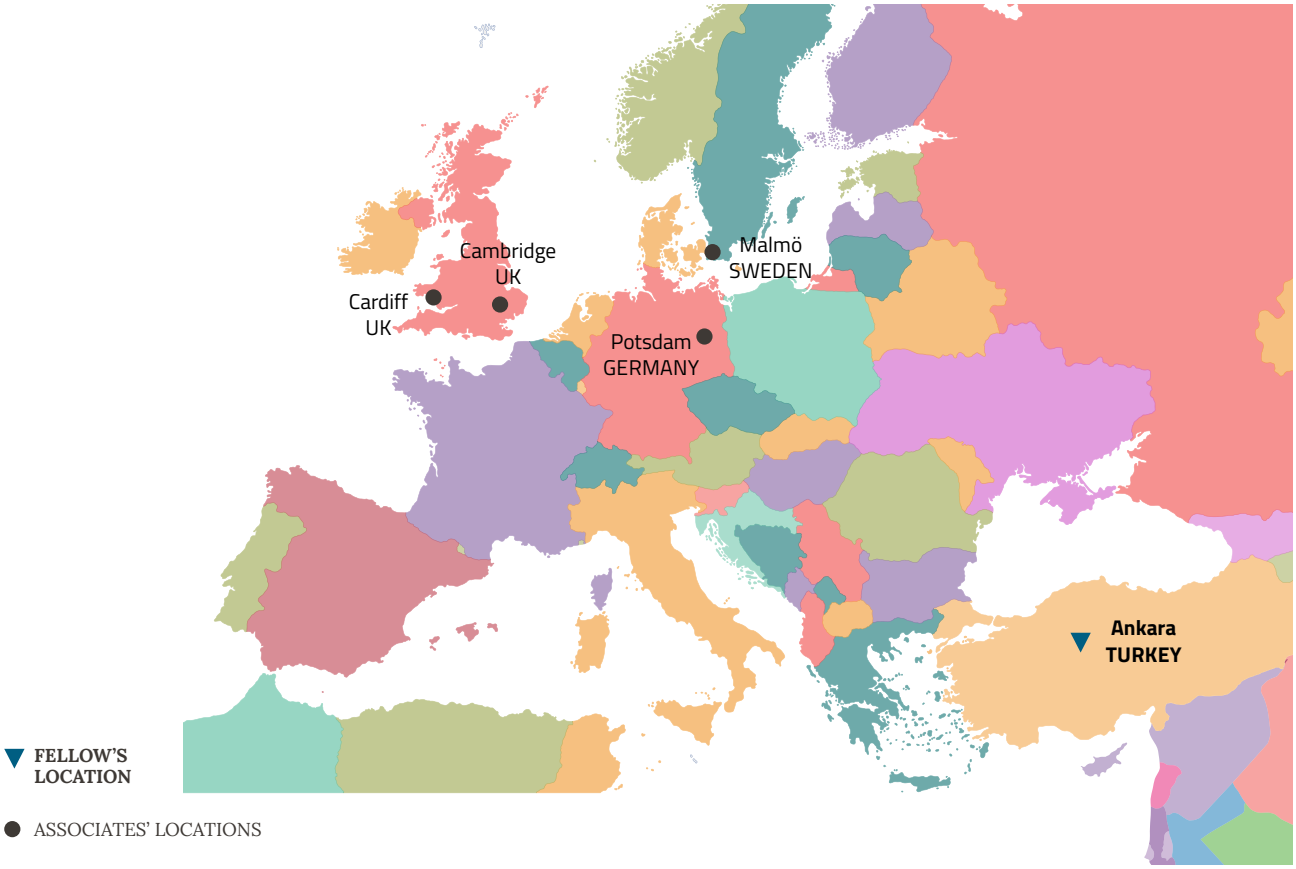
Incorporating citizens' values into Turkish energy policy decisions

KEYWORDS Modelling; Scenarios; Acceptance; Cultural contexts
TIMEFRAME Fellowship meetings with Associates took place in June 2020
ENERGY-SHIFTS RAPPORTEUR Rosie Robison

Energy-SHIFTS Policy Fellow

Görkem Güngör

Energy and Natural Resources Expert, Ministry of Energy and Natural Resources as well as PhD Researcher, Middle East Technical University[1], Ankara, Turkey



1 Gorkem's participation in the Energy-SHIFTS project as a Policy Fellow was personal and not institutional, and thus this report doesn't necessarily reflect the opinion of the Ministry of Energy and Natural Resources or Middle East Technical University.

This Energy-SHIFTS Policy Fellowship report is part of a wider collection published in November 2020 describing dialogue between 21 energy policyworkers and [86] social scientists and humanities scholars, available via energy-shifts.eu.

Policy context

Görkem is a researcher working on climate change and energy policy development at the Turkish Ministry of Energy and Natural Resources. He has an academic background in nuclear Engineering and Earth System Science (specifically, mathematical modelling of energy systems under environmental constraints using dynamic linear optimization solvers).

His current work involves the development of long-term energy planning and scenarios for Turkey. This primarily uses energy economics and mathematical modelling, using GAMS for both demand-side management and power supply strategies. Additionally, together with Middle East Technical University, he has some experience of qualitative research regarding the social dimensions of energy and climate policies. For example, running a pilot survey with energy experts on their perceptions for global and national energy and climate policies, as well as an expert elicitation survey to assess the narratives of socio-economic pathways and perceptions on climate change, energy technologies and environmental behaviour, in the Turkish context. From these experiences, he is keen to promote greater integration of social dimensions into the Ministry's modelling work, and hoped to explore this with his Fellowship.

Although climate change is a global issue requiring national actions, Görkem also sees how these national policy decisions are made by individuals (policymakers) through consultation at different levels with other individuals or groups. He therefore recognises how the values and beliefs of all groups – and the influence of local Turkish social norms – play a crucial role in the policymaking process. A secondary area of interest for his Fellowship was therefore to learn more about how research from across the Social Sciences and Humanities (SSH) can bring understanding of citizens' values into policy.

> *"Current problems we face such as poverty, energy access, air pollution or climate change can't be solved relying only on engineering and mathematical methods. Therefore I believe that science should adopt a human-centred approach starting from the core values, beliefs and actions of individuals which affect societies and technologies. My objective is to collaborate with social scientists in my work on the acceptability of policy decisions related to climate change and the energy supply system."*
>
> Görkem Güngör

Policy challenges

Based on the policy context above, Görkem prepared the following SSH-related questions to stimulate discussion with his matched Policy Associates; these were sent to Associates prior to conversations.

His overarching question was: How can a better understanding of citizens' values and beliefs related to climate change affect decisions of energy policymakers?

Underlying this, the two policy problems associated with his Fellowship were:

- how to better incorporate social science understandings into energy modelling processes; and,
- how might citizens' values and beliefs differ in different cultural contexts, and how can understanding of these feed into energy policy decisions.

Matched Policy Associates

Given the policy challenges outlined above, as well as specific disciplinary interests highlighted by Görkem, the Energy-SHIFTS team sought in particular experts to bring insights from social psychology, ecological philosophy, behavioural economics, and environmental ethics. The four Associates matched with Görkem were therefore:

Anders Melin - Senior Lecturer, Institute for Urban Research, Department of Global Political Studies, Malmö University, Sweden. Anders works across Ethics, International Relations, Humanities and Religious Studies, with a particular interest in energy and climate justice. Anders was invited due to his expertise in environmental ethics, as his work on how issues of justice can be considered during the construction and evaluation of energy scenarios.

Diana Süsser - Research Associate, Energy Transition Dynamics group, Institute for Advanced Sustainability Studies, Potsdam, Germany. Diana has a background in Human Geography and Environmental Sciences, and her research focuses on energy and climate policy, including policy-model interactions. Diana was invited due to her significant expertise in the integration of social aspects into energy models, bridging between technical and social energy research.

Aled Jones - Director, Global Sustainability Institute, Anglia Ruskin University, Cambridge, UK. SSH-related disciplines/research interests to be added by Associates or from online profile. Aled was invited due to his expertise in socio-economic aspects of energy system modelling, and work as part of the Centre for the Understanding of Sustainable Prosperity which seeks to understand how we can prosper within the world's environmental, social and economic limits. Sarah Hafner (PhD Researcher, Associate matched with Fellow Holly Jeffers) also joined Aled's call with Görkem.

Emily Cox - Research Associate, Understanding Risk Research Group, School of Psychology, Cardiff University, UK. Emily works across Environmental Policy and Social Psychology, focusing on social science dimensions of energy technologies such as public perceptions and ethics. Emily was invited to bring in-depth psychological expertise as well as due to her experience of working with engineers and technical energy experts.

Discussion points and SSH insights

Each Policy Associate wrote a response to Görkem's policy challenges, including extensive references to further research, and one-to-one conversations followed between 4 and 18 June 2020. At the end of the Fellowship programme, on 23 June, Görkem took part in an online workshop with other Fellows and Associates working on similar policy challenges under the 'Citizen Engagement' thematic category. In this section, we share insights from the Associates and Fellow, related to the policy challenges posed. Quotes from the Associates are shown in italics in the main text.

Integration of scenario narratives into modelling

Görkem's work involves modelling, in order to forecast both future energy power generation and energy supply/demand. With colleagues, he has been involved in extending these energy modelling studies to partly include social factors, to date primarily using survey and expert elicitation methods. However, as Görkem identified at the start of his Fellowship, this work could go a lot further, as one Associate explained: "*energy models are currently not able to sufficiently reflect social, political and technical interactions, e.g. renewable acceptance/opposition, renewable community ownership and policy design effects, and little attention is payed to actors and behaviours (e.g. politics, beliefs), which leads to an oversimplification of social realities.*" As another Associate highlighted, even where models to seek

to involve individual behaviours, a common critique is that of the 'rational actor' assumption, which simply does not reflect how people engage with decisions around energy use: "*the 'rationality' assumption is not just associated with citizen behaviours but concerns the behaviour of all actors in these models.*"

A significant portion of the Fellowship conversations were on the topic of models, with Associates bringing a range of in-depth perspectives to the question of how to better include social science understandings into energy modelling. As one Associate commented "*Every modeller I've ever met has asked me this question, and unfortunately the simple answer is that human beings cannot generally be quantified!*". Nevertheless, there has been extensive research into how to approach this issue, including work which explores how different methods may provide different advantages. These include assessments from the SENTINEL[2] project which has sought to look at how policymakers across a range of country contexts are currently using models to inform their (energy transition related) decision making. This has shown the range of different strategies being used to "*Integrate human behaviour and social risks and opportunities*" into models, which as one Associate flagged up "*has been identified as one of four key challenges for models in the 21st century*".

The most commonly mentioned method for this type of integration was around using socio-technical narratives in the process of scenario building, which are then used either as the basis of models or to inform their development; there are a number of ways that qualitative input can be incorporated into this narrative/scenario building process. Although there are limitations, and some criticism that narratives often do not fully inform the final scenarios, this approach is generally seen as a significant improvement on simple cost optimisation techniques. Associates also discussed ways that this scenario building process may be made more participatory, including the use of discourse theory.

Görkem particularly felt that bringing scenario narratives into modelling using either 'bridging' or 'merging' strategies may be immediately useful for his work. Bridging looks to have twin tracks of modelling work and social science exploration, which engage in dialogue at key points, to inform each other[3]. Merging is more in-depth, and assumes that models can explicitly include social factors, and fundamentally adjusting models to take account for new variables or processes. Apart from scenario building, other approaches Associates flagged as ways to bring social factors more fully into models included: fuzzy cognitive (systems mapping); expert elicitation; agent based models; models using system dynamic principles. Importantly, Associates also highlighted what features models may need to be able to replicate or deal with in order to be able to simulate transitions.

Based on conversations with Associates, Görkem felt it would be important to look at ways to include narrative storylines into modelling processes, but importantly for these to be developed from not just the views of policy experts but other active energy stakeholders as well. Citizen involvement is discussed in more detail in the next two subsections.

Citizens' values in different cultural contexts

Görkem was interested broadly in how citizens' values and beliefs may differ in different cultural contexts. Conversation with Associates – and the academic style of asking questions *about* the question one is interested in – helped to refine this question, in two ways: (1) exploring the different types of 'cultural context' there may be; and (2) expanding consideration to ethical issues.

Firstly then, one Associate raised the multiple meanings of culture, and therefore the difference facets that may need to be considered when working with Turkish citizens. The most immediate use of the term often refers to geography, for example looking at the experience of citizens in Turkey as compared to other countries; this may depend on levels of familiarity in that country for example with climate change or energy issues. Secondly however, culture can be strongly tied to characteristics which are not primarily geographical. This may link into a sense of a religious community or indeed a workplace community (including the cultures present in policymaking organisations). These communities may in turn have a number of shared values, and Associates highlighted that given globalised communications systems this shared-values understandings are even more important, since people may also spend more time in contact with groups they are separated from geographically. Thirdly, the term has precise

2 Sustainable Energy Transition Laboratory, see: https://sentinel.energy/. One interesting insight from the project showed the widespread use of models in policymaking, with almost two-third of 48 energy system modelling tools found to have a direct or indirect policy impact.

3 Trutnevyte, E., Hirt, L.F., Bauer, N., Cherp, A., Hawkes, A., Edelenbosch, O.Y., Pedde, S. and van Vuuren, D.P., 2019. Societal transformations in models for energy and climate policy: the ambitious next step. *One Earth*, 1(4), pp.423-433.

meaning in certain fields, specifically: "*cultural context can refer … to Cultural Theory*[4]*. This posits that worldviews broadly fall into four categories: egalitarian, individualist, hierarchical, and fatalist. A person's worldview is influenced by their upbringing, peer group, experience etc, and is a strong predictor of their beliefs*". This discussion led to Görkem further developing his questions of interest with regards cultural dimensions, in particular to focus on cultural biases for further consideration in energy transition scenario narratives.

How to actually use insights into values in the policy work process was also discussed, with some of the tensions there may be in terms of politically trying to appeal to dominant worldviews. One Associate pointed out this can bring difficulties for climate action: **"***as we've seen in the US, this can lead to issues such as climate change becoming highly politicised and polarised.*" There may also be ethical questions in altering messaging around climate change to try to appeal to certain groups, if this leads to certain risks being downplayed for example. Görkem flagged up at the start of his Fellowship his interest in the ethical and moral aspects of the policy challenges he is working on. This was also brought into discussion on how philosophical and religious worldviews may impact on environmental protection issues. The role of theology in the energy debate is arguably very under-represented in energy policymaking, however was an interesting point of discussion with Associates, drawing on the rich vein of work in this area and reflecting :**"***Since the 1970s, there has been an increasing debate about humanity's moral relationship to nature within the world religions.***"**

All of this discussion led to expansion of possibilities for exploration in Görkem's work, as he explains:

> *"I understand that the question on values and decisions of policy makers could be reformulated to include collective behaviour and group dynamics. As a researcher I am involved with interdisciplinary studies mainly with economists but I believe there is a lot of potential for studies in ethics for energy issues also having impact to modelling studies."*
>
> Görkem Güngör

Methods for citizen participation

Finally, some of Görkem's Associate meetings moved on to discuss how to expand methods for citizen participation, with recent examples given from national government exercises across Europe. Associates highlighted that involvement of experts and policymakers in discussion may exclude important parts of the picture. As one Associate explained: **"***expert elicitation will only ever give a very partial view of social issues... publics are extremely plural, and engage in the energy system in a vast array of positive and proactive ways***"**

This is a topic which was also developed further in the online workshop discussions with a number of Fellows and their matched Associates, for example on the increasing use of digitisation to bring people into deliberation processes. Ultimately, there is a need for considering a very diverse range of actors, in order to achieve: "*systematic long term planning with transparency around changes in future policy targets .. consider[ing] relevant sectors, stakeholders, and additional co-benefits and adverse side-impacts of policies. These can then be ambitious and act as a driver for innovation.*"

Translation to policy impacts

For Görkem, the Fellowship reinforced his desire to engage actively with social scientists to strengthen his policy work. He plans to take this forward in two specific ways:

1. **Further exploring the integration of social science research into the Ministry's energy models**
   Görkem's previous work has tended to include social studies at the end of a modelling process, for example his expert elicitation study mainly used the results of a modelling study as the basis of discussion. However, following his meetings he feels: "*integrating views at the start of the modelling study, before the narrative development, is more important*", and this is something he will seek to discuss with colleagues and researchers whom

4 Douglas, M. and Wildavsky, A., 1983. *Risk and culture: An essay on the selection of technological and environmental dangers.* Univ of California Press.

he is acquainted with for further improvement of energy scenario narratives. Additionally, he is keen that such narrative scenarios should be developed not solely based on the views of policy experts, but also including other active energy stakeholders.

> *As we extend the time horizon of our models, many more assumptions come into play (e.g. customer preferences of technologies). We need more of a basis for these assumptions.*

Görkem Güngör

2. **Development of workshops with social scientists**
   As Görkem highlighted, in the Ministry, when it comes to the social sciences there is a strong focus on economics. He has found the experience of expanding his knowledge of other disciplines very useful, especially regarding customer preference and evaluation, but also the potential for studies in ethics to have a greater impact on modelling studies. Görkem is aware there are *"biases in decision making from relying only on consultation with social scientists instead of active engagement with them"* and this sees a great benefit for the Energy Ministry to hold workshops with social scientists, not only for consultation, but to discuss and cooperate at the beginning of processes. This is something he will look to develop by promoting this issue in seminars and workshops through collaboration with the academia.

> *Active engagement with social scientists instead of solely consulting them would create more robust and long lasting policy recommendations.*

Görkem Güngör

Learnings from Associates

Associates were asked what they learnt about on-the-ground energy policy challenges from their virtual meeting with Görkem. Here we share some of their reflections which particularly focussed on the learnings possible when considering a new country context.

"I learnt a lot about the Turkish context, particularly their energy security challenges and the difficulty of balancing the 'trilemma' there (or of even getting policy-makers to accept that there is a trilemma which needs balancing!). Turkey is making great steps towards mitigating climate change, yet import dependence is a very real threat, and win-wins on the demand-side are challenging in an emerging economy context. Overall though, ***I was surprised to learn that policy dynamics are very similar in Turkey. Just like [my own country], policy-makers are still prone to prioritising cost, and as a result tend to only include economists as representatives of 'social science'****. Also, policy-makers are reluctant to embrace complexity, and complex answers to societal questions are not easy for them to use."*

"[When considering the Energy Ministry, I learnt] they may be ***very focussed on their specific areas****."*

"[I learnt more about] ***the relevance [for policy work] of better understanding people's behaviour and energy use****."*

"I learned about ***the challenges of Turkey to consider regional socio-cultural differences in policy-making****. People's values and past experiences play a large role for their attitude towards renewables. Regarding modelling, I learned that Turkey is currently evaluating its renewable energy potential. Modelling is still quite new to Turkey, but close collaborations with science could contribute to exploit its potential. Social aspects are not a priority for Turkish energy policy-making, however, there is an increasing awareness about the importance of people's values and attitudes."*