

Governing the energy-water nexus; sustainable resource governance for development in Turkey

Project Background Information/Introduction:

In Turkey's Western Anatolia, unprecedented funds are committed to the development of geothermal resources and energy infrastructure. Deep geothermal energy projects, in particular, grew in size and number in the last 15 years. These are almost always located in the proximity of largely agrarian communities in peri-urban and rural settings with a longstanding tradition of agriculture such as fig, grape and/or olive production. Geothermal energy as a local, clean and green energy option, is very much celebrated by national governments and private sector for its power production and economic growth potential. However, geothermal energy projects are increasingly proven to be difficult and controversial in terms of social and environmental sustainability. This research aims to fill this interface by delving into the governance of contested geothermal energy projects in Turkey.

Research Aim/Objectives/Questions/Hypotheses:

The aim of this study is to understand the dynamic relationship between the state, private companies and citizens in the development and management of geothermal energy. The goal of this inquiry is to gain a better understanding of relevant knowledge and value systems and their disparities, actor-institution networks and water-energy policies as part of states' larger political economic objectives. In this way, this study will map the implications of energy policies for localities and it will analyse the distribution of socio-environmental costs and benefits from generating electricity from geothermal resources. In that regard, environmental conflicts are on the focus of this study that limit the peaceful and synergetic co-existence of geothermal energy projects and their social and ecological environs.

Data/Methods/Analysis:

This study seeks to engage with key actors in Turkey's geothermal energy sector. It is designed as a case study defined by Yin (2009, p. 18) as "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context". This study plans a hybrid research design marrying: (1) a discourse analysis of infrastructure-led-energy-based developmentalism and (2) an ethnographic inquiry to see local communities' experiences of water-energy nexus intensification and management, and the ensuing environmental change in selected cases. While discourse analysis helps me understand the place of the water-energy nexus within the national development discourse in Turkey; the latter sheds light on the

materiality of the water-energy nexus on the ground, including valuable insights into the distribution of socio-environmental costs and benefits from developing energy sources. Case studies are commonly used methods in social sciences. According to George and Bennett (2005) case study approach is well-suited to the detailed exploration of hypothesized causal mechanisms and process tracing in that it links concepts to contexts and causes to outcomes. Research participants include government officials, state institutions, private companies, NGOs, CSOs and local communities.

Contributions to the SDGs:

In the first two decades of the 21st Century, many countries experienced transformational growth in energy infrastructure, i.e., the construction of new power generating stations based on wind, solar, rivers (small-hydro) and geothermal energy (REN21, 2020). Today, developing sufficient, affordable and socially-and-environmentally sustainable energy systems is one of the grand challenges of the century. Renewable energy is sitting at the heart of this challenge, a point of convergence for a range of policy objectives from economic and rural development to energy sovereignty and democracy, national security, the fight against climate change and social justice. Benefits of renewable energy also find ripples in the global development discourse as in the United Nation's (UN) 2030 Agenda for Sustainable Development (often abbreviated to simply "SDGs" where SDGs stand for Sustainable Development Goals). In that regard, SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure) and SDG 13 (Climate Action) would be direct outcomes of renewable energy development. Due to complex interconnections between the human and natural systems; when governed appropriately, development of renewable energy has the potential to contribute to multiple other SDGs, including SDG 2 (Zero Hunger), SDG 6 (Clean Water and Sanitation), SDG 15 (Life on Land) and SDG 16 (Peace, Justice and Strong Institutions) among others.

Lessons learnt and key takes/reflections:

Energy is a research area of both natural and social science. Hence research on 'geothermal energy and society' is not only necessary but also timely considering the pace of transition to renewable energy systems on a global scale. Energy is spreading to new geographies, discontents around the benefits (and burdens) from energy development are sometimes considered 'critical' and 'adversarial' to national security and development. Energy infrastructure that is deemed so urgent, necessary and significant naturally does some political "work" beyond its role in energy generation, storage or transmission (Bridge et al., 2018). For example, it enfranchises the nation state to establish political authority in energy geographies, allocate political power to certain interest groups and marginalize critical others. Development of energy systems that serve to states' political economic intentions can thus produce and reproduce

economic and political power on an array of areas and scales (Peet et al., 2011). Hence, the take from this study and other social science research alike, is that the social and environmental sustainability of energy projects are very much contingent on governance and environmental politics.

Project Information:

- Project Duration: 3 Years
- Project Resources (funded by): Durham University
- Author: Burag Gurden

References:

Bridge, G., Özkaynak, B., & Turhan, E. (2018). Energy infrastructure and the fate of the nation: Introduction to special issue. *Energy Research and Social Science*, 41(April), 1–11.
<https://doi.org/10.1016/j.erss.2018.04.029>

Eren, A. (2018). Transformation of the water-energy nexus in Turkey: Re-imagining hydroelectricity infrastructure. *Energy Research & Social Science*, 41(April), 22–31.
<https://doi.org/10.1016/j.erss.2018.04.013>

Erensü, S. (2018). Powering neoliberalization: Energy and politics in the making of a new Turkey. *Energy Research & Social Science*, 41(May), 148–157.
<https://doi.org/10.1016/j.erss.2018.04.037>