



ELSEVIER

Contents lists available at ScienceDirect

Energy Research & Social Science

journal homepage: www.elsevier.com/locate/erss

Original research article

Energy infrastructure and the fate of the nation: Introduction to special issue

Gavin Bridge^{a,*}, Begüm Özkaynak^b, Ethemcan Turhan^c^a Durham University, United Kingdom^b Boğaziçi University, Turkey^c Environmental Humanities Lab, Division of History of Science, Technology and Environment, KTH Royal Institute of Technology, Sweden

ARTICLE INFO

Keywords:

Infrastructure
 Political economy
 Nation
 Development
 Scale
 Geopolitics
 Liberalisation
 Investment
 Inequality
 Technopolitics
 Socio-technical imaginary

ABSTRACT

In this article we introduce a Special Issue of *Energy Research and Social Science* focused on energy infrastructure and the political economy of national development. Many countries are experiencing transformational growth in energy infrastructure, such as transmission and distribution systems; import, export and storage facilities; the development of domestic energy resources; and construction of new power generating stations based on wind, water, coal, gas and nuclear sources. Large-scale projects like these are frequently justified by appeals to grand narratives – promoting economic growth, securing energy supply, modernizing energy service provision, and transitioning to more environmentally sustainable energy systems - in which the fate of the nation is closely tied to infrastructural development. The papers in this collection present compelling empirical evidence of how claims for energy infrastructure's national significance and/or necessity intersect with the (re)production of political and economic power. Drawing on case material from Africa, the Americas, Asia, Australia and Europe, they highlight the capacity of different energy technologies and infrastructural assemblages to shape political and economic outcomes beyond their role in storing, transporting or transforming energy. This Introduction to the Special Issue does three things. First, it characterises the scale and significance of the contemporary 'infrastructural moment', observing how, in many national contexts, energy policy-making remains centralised and divorced from public participation. Second, it critically differentiates existing literature on the political economy of energy infrastructure to identify five distinctive ways in which research understands the 'political work' infrastructure performs. Third, it introduces the papers in the Special Issue and organises them into four key themes. Overall, the Introduction affirms the importance for social science of understanding the economically and politically constitutive power of energy infrastructures. The critical reflexivity this requires is essential to moving towards energy infrastructures that are just, equitable and sustainable.

1. Introduction

Securing reliable, affordable and environmentally sustainable energy supplies is one of the grand challenges of the 21st century. Energy infrastructure sits at the middle of this challenge, a point of convergence for a wide range of policy objectives from economic growth and national security to mitigating climate change and social inequality.¹ The scale of the energy infrastructure challenge is very large indeed. The International Energy Agency estimates \$44 trillion is required in new energy supply infrastructure in the period to 2040 [1], while an annual expenditure of \$45 billion is required to address UN Sustainable Development Goal 7 and deliver affordable, sustainable and

reliable access to modern energy services.² Developing new and upgraded electricity and gas transmission systems in Europe is expected to cost around €210 billion before 2022 [2]; and in the US, the 'infrastructure investment gap' for electricity generation, transmission and distribution is estimated to be \$177 billion between 2016 and 2025 [3]. Calls for new or expanded energy infrastructure are now common across many different areas of socio-economic, political and environmental policy, from promoting economic growth and ensuring national security, to modernizing housing and transport services and transitioning to more sustainable forms of living. In short, investing in energy infrastructure offers an apparent 'solution' to a range of contemporary challenges.

* Corresponding author.

E-mail addresses: g.j.bridge@durham.ac.uk (G. Bridge), begum.ozkaynak@boun.edu.tr (B. Özkaynak), ethemcan@kth.se (E. Turhan).¹ The EU's 2011 Infrastructure Package, for example, targeted support for new energy infrastructure to meet multiple objectives around energy security, energy market liberalization and decarbonization. With the Lisbon Treaty (2009), energy infrastructures became a shared competence between member states and the European Commission.² Data from IEA (2014) and the SE4All Finance Committee Report (2015); as cited in World Bank, see <http://www.worldbank.org/en/topic/energy/brief/sustainable-development-goal-on-energy-sdg7-and-the-world-bank-group><https://doi.org/10.1016/j.erss.2018.04.029>

Received 4 March 2018; Received in revised form 13 April 2018; Accepted 13 April 2018

2214-6296/© 2018 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Our starting points for this Special Issue³ are two-fold. First is a recognition that many countries are experiencing transformational growth in energy infrastructure. This growth has materialized in a variety of forms, from high-profile megaprojects such as large power generation facilities, oil and gas pipelines, electricity transmission systems, and major resource extraction projects; to a vast array of smaller-scale infrastructures that are replicated across multiple urban and regional contexts, including gas and electricity distribution systems, energy storage facilities, off-grid power generation, and a variety of ‘smart’ infrastructures that create new dynamics of energy management. While the build-up of these and other energy infrastructure is not itself a novel phenomenon, there are reasons (as we outline below) to consider the current period of transformational growth historically distinctive and to take seriously what we are calling the contemporary ‘infrastructural moment.’ Our second starting point is the observation that promotion and development of energy infrastructure is frequently justified by reference to ‘grand narratives’ that imply some form of universal benefit and/or urgent necessity. These invoke ostensibly common objectives and shared scales, such as the importance of addressing global climate change, securing urban competitiveness, or driving national development and, in this way, forge a connection between specific material investments and broader improvement of social conditions. In this Special Issue we are interested in the articulation of energy infrastructure with projects of improvement (economic growth, modernization, decarbonization, enhancing security) at the national scale, and how claims about the importance, necessity or urgency of energy infrastructure often position it as a vital national project on which the ‘fate of the nation’ depends.

A primary objective in bringing together this Special Issue, then, is to critically examine what happens politically and economically when questions of energy infrastructure intersect with nationally-scaled projects of development. We suggest the current conjuncture is marked by a ramping up of energy infrastructure investment in ways that make it possible to speak of an ‘infrastructural moment’. This is characterized, in part, by the scale of current investments and the prospective possibilities of future energy infrastructure: here the ‘financing gap’ alluded to in the first paragraph is key, as it positions energy infrastructure as an investible proposition and an asset class from which future returns may be derived [4,83]. The infrastructural moment is also characterized by the way energy infrastructures draw together and advance the material interests of specific actors and groups across multiple scales, including international capital. It is in this multi-actor and multi-scalar context, then, that a resurrection or ‘return’ of the national imaginary/national scale concerning debates on and policy approaches to energy has to be understood. The circumstances surrounding this reassertion of the national in policy debates are complex and stem from several different trajectories. In some contexts, for example, it reflects a post-neoliberal turn and the reassertion of the national state as an economic actor (i.e. resource nationalism in Venezuela, Bolivia and Ecuador), although in circumstances where the capacity of the national state to act depends on its ability to articulate domestic resource rents with international credit and debit (such as the role of Chinese infrastructural loans in financing hydroelectric power development in Ecuador, see Purcell and Martinez-Esquerria [82]). In other contexts, it signals the rise of a populist and authoritarian form of economic nationalism (i.e. Turkey, Poland, India, the USA), where energy projects

are harnessed to claims for national security and development in ways that occlude the particular interests of private capital and suppress dissent (see, for example, Arifi and Späth [96]; Finley-Brook et al. [102]). In countries that embraced economic liberalization in the energy sector and the growth of energy investment and trade (such as the UK), claims for the national importance of new energy infrastructure reflect concerns about growing import dependency and the way energy systems are no longer ‘nationally’ contained but shaped by decisions at multiple scales. In such contexts, the scaling of energy infrastructure as a national policy concern also reflects the limited capacity of national governments in liberalised and globalised energy markets to directly deliver a response to public concerns around energy security, climate change and the affordability of energy. Elsewhere, the assertion of the nation around energy infrastructures is an artefact of international agreements (i.e. SDGs, the Paris Agreement) signed and ratified by nation-states—which lend legitimacy to the national scale via compliance.

It is important that social science research on energy better understand these complex intersections between energy infrastructure and the political economies of national development, we suggest, for at least three reasons. First, claims about the national significance of infrastructure ‘do political work’ by, for example, licensing state intervention in energy systems, establishing political authority, and marginalizing criticism. Several of the papers in this collection present compelling evidence for how claims for energy infrastructure’s national significance and/or necessity intersect with the (re)production of political power, and how appeals to common interests are used to secure particular interests and prioritize some interests and scales over others. This line of enquiry is important because, in many countries, energy policy-making remains centralized and divorced from public participation. Questions about who bears the costs of power stations, pipelines and other energy infrastructures deemed ‘critical’ to national security or development now animate calls for more inclusive and sustainable energy systems. Opposition to such infrastructure is increasingly framed in terms of democratic participation, citizenship and social justice, with each of these terms making alternative claims on the national state in regard to the decision-making procedures and socio-environmental consequences of infrastructural development. Some of the papers in this Special Issue explore such questions about the socially-constitutive power of energy systems empirically, highlighting the capacity of different energy technologies and infrastructural assemblages to reproduce social power and shape political and economic outcomes ([5,6,67]).

A second reason for social science research on energy to take seriously the intersections of energy infrastructures with national development concerns the role of energy infrastructure in enabling and sustaining particular forms of political economy. This includes, for example, the importance of electricity transmission systems, gas pipelines and storage facilities to constituting wholesale energy markets and enabling the adoption of economic liberalization policies in national energy sectors. Chile’s introduction of wholesale markets for electricity in 1978, and comprehensive electricity and gas sector privatization in the UK beginning in the 1980s illustrate how infrastructures for circulating gas and electricity have been a key experimental site for economic deregulation and the introduction of market principles, commercial logics and private capital into national economies (for the case of Turkey in relation to hydroelectric infrastructures, see Eren [86]; Erenşü [99]). Other examples include the significance of energy infrastructure (and infrastructure in general as an asset class) to processes of financialization and the evolution of the macro-economy; the influence of infrastructural form on the scope for collective mobilization and the capacity of labor, through its control of key investments that shape the distribution of social power and the evolution of the welfare state (Mitchell [67]; see also Prinz and Pegels [84] on the labour movement’s influence on Germany’s energy transition; and the influence of infrastructural scale, complexity and capital costs on the centralization of

³ The origins of this Special Issue (although not its final form) lie in an interdisciplinary workshop the authors convened in Istanbul in June 2016 with the support of a British Council Katip Çelebi-Newton Fund Researcher Links Workshop Grant. The workshop brought together around 30 UK and Turkey-based social science researchers for five days at Boğaziçi University in Istanbul, to explore the social processes underway around energy infrastructure. It included participation by local community organizations, public institutions, environmental NGOs and energy professionals from the public and private sectors. Following the Istanbul workshop, the authors worked with the Editors of ERSS to issue a global call for papers on the Special Issue theme.

Download English Version:

<https://daneshyari.com/en/article/6557373>

Download Persian Version:

<https://daneshyari.com/article/6557373>

[Daneshyari.com](https://daneshyari.com)