

Political Economy of Energy, Adaptation and Resilience (PEEAR)

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This brief document lays out a vision for a new program to be housed at Harvard University and directed by Professor Dustin Tingley. The program will house projects on the political economy of energy transitions, adaptation, and (if successful) societal resilience.

Energy Transition

The political economy analysis of the energy transition is a developing field that is drawing in scholars with backgrounds in (for example) politics, economics, sociology, business, and engineering. This burgeoning area increasingly draws direct interest from applied policy, business, legal, and public health communities.

From fossil fuel extraction and processing to end-use consumer products, the global economy is driven by fossil energy sources. The shift away from fossil energy sources (as currently consumed) and to diversified energy sources has and will continue to generate distributional impacts--winners and losers—whose fates are determined by the intersection of politics and economics.

My earlier work in this space, including a recent book, *Uncertain Futures How to Solve the Climate Impasse*, draws on political economy theories (credible commitment problems) and social science methodologies to characterize these challenges and show how policy design can help alleviate these challenges (Gazmararian and Tingley, 2023; see also Gaikwad, Genovese and Tingley, 2023; Hu and Tingley 2022). More recently I take up the call to ensure that clean energy generation is available to low-income communities (Gazmararian and Tingley, working), ways to unlock cross-border climate finance flows (Gaikwad, Genovese and Tingley, working), and economic development/workforce opportunities for high voltage inter-regional transmission (Moudgalya, Ornstein, Tingley, working).

I am beginning a deep dive into a topic discussed in the above book but not treated in depth: the local public finance implications of the energy transition. We are phasing out a major contributor to local and state public budgets, and their replacement is all but certain. Pockets of scholars at Harvard and across the world are picking up on this challenge. These public finance implications will be immense, and figuring out the

optimal way to expand clean energy production while also contributing to public coffers will be key. Further, as we phase out fossil energy production, those resources will need to be safely closed down. Unfortunately, this is precisely when firms will have minimal incentives to do so themselves, which will put further fiscal strains on governments.

I am also planning to extend efforts around credible solution formation in countries like South Africa, India, and Indonesia. All will require more listening to local communities coupled with clear frameworks for credible policy impact evaluation and stakeholder-focused experimentation.

Climate Adaptation

Adaptation to climate change is typically discussed in terms of physical infrastructure (barriers to prevent flooding, burying electrical lines, forest fire prevention) and changes to where people live, work, and extract resources from. These critical investments should remain focal and first order but reflect just a portion of how communities and broader society must respond to climate change. I see opportunities in three additional areas.

Governments will need to grapple with constrained abilities to govern. Simply put, just as extreme heat can impact educational attainment and worker productivity, government will face similar challenges. For example, in earlier work we showed the impact of heat on public health workers (Obradovich, Tingley, and Rahwan 2018). Adapting to a warming planet will also mean governments and their workers adapting.

Society will need to develop and adopt new ways of dealing with risk. For example, attention has been paid to how insurers are exiting risky insurance markets exposed to storms and wildfires. The political responses to this are less studied at the individual or institutional level. Furthermore, local and state governments buy insurance products like families and firms do. How will they proceed when coverage costs outstrip local fiscal resources (including, per above, in places that see declining finances due to the winding down of fossil extraction)? Similarly, a recent NSF Center submission emphasizes the connection between climate change and pandemic behavior and preparedness.

Geoengineering, including some of my own work (Burns et al. 2016, Dai et al. 2021, Mahajan, Tingley, and Wagner 2019, Tingley and Wagner 2017), is often discussed in reference to large-scale stratospheric engineering. Unsurprisingly these technologies are highly controversial. There is, however, very little work on the political economy of more local forms of geoengineering, such as those that seek to cool urban environments. Local-level geoengineering adaptation solutions will have fewer planetary-wide effects but would nevertheless potentially reduce suffering, especially in marginalized communities.

Resilience

In a world of profound change—changes to the energy system and the physical and financial realities of governance—a research program that points towards resilience is crucial. All of the projects discussed are problem + solutions projects. Political economy theories, coupled with insights from other disciplines such as business and engineering, help us characterize the exact nature of problems from which we can devise solutions. And with an arsenal of solutions, humanity will demonstrate resilience.

Research and Impact Resource Needs

Pursuing the PEEAR vision will require substantial financial and institutional resources. These resources include:

Project management and coordination

Grant writing

Research assistants

Pre-doctoral research fellow(s)

Post-doctoral research fellow(s)

Public and elite opinion polling

Travel and field research support

Stakeholder convening

Curriculum development for internal Harvard students and external students and stakeholders

Impact management and broad dissemination

Some of these resources might be marshaled via collaboration with existing efforts in HKS, HBS, FAS, and Salata. However, the need for singular strategic direction and differentiation is vital to build an internal community and an external-facing brand.

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