

ACCELERATING A LOW-CARBON ENERGY TRANSITION: THE ROLE OF POLICY ENTREPRENEURSHIP

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A recent UN report highlighted that the world is on course for 3° C warming by the end of this century. Even a rise in temperature of half a degree beyond the Paris Accord target of 1.5 °C is likely to expose an additional 23 percent of the global population to extreme heat as well as increase mean sea level by 6 centimeters by 2100, which would cause more frequent coastal flooding, double plant and animal species loss, reduce marine fisheries by twice as much, and wipe out 99 percent of coral reefs. Scientists estimate that to restrict temperature rise by 2100 to 1.5 °C, global greenhouse gas emissions need to be cut by 45 percent from 2010 levels *within 12 years*. As energy accounts for over 60 percent of global greenhouse gas emissions, many have turned to low-carbon energy technologies as part of the solution. Low-carbon energy requires higher efficiency in energy generation, distribution, and end-use as well as universal access to modern energy, but without causing increases in demand that might result in higher overall emissions. In short, a low-carbon energy transition is necessary.

Scholars have identified numerous areas in which work is necessary to catalyse the energy transition, including resources, technologies, economics, behaviour, and policies. However, the role of *entrepreneurship* in fostering policy innovation has been neglected. In this brief, I draw on primary research on energy policy innovation that focuses on the adoption of new goals or means within a policy arena to identify different types of policy entrepreneurship necessary for moving a policy from agenda setting to implementation. First, I examine cases of energy policy innovation in India, a ‘fast-moving’ and ‘high-impact’ country for the global energy scenario, to show that different types of entrepreneurial activities have been critical in the ongoing Indian energy transition. I then propose a conceptual disaggregation of policy entrepreneurship for academics and practitioners with an interest in not only studying, but also facilitating policy innovation designed to foster a low-carbon energy transition.

THE ROLE OF POLICY ENTREPRENEURS IN FACILITATING STATE-LEVEL ENERGY POLICY INNOVATION IN INDIA

In contrast to its international reputation for much of the 2000s, India is now viewed as a leader in climate change action owing to its emphasis on energy transition. Within a short span of time, the country has provided access to modern energy to over a 100 million people, increased its target for renewable energy by over three-fold and solar energy by over five-fold, and significantly scaled up distribution of energy-efficient lighting and appliances to spread awareness about energy-efficient alternatives and reduce energy demand. While the Indian energy transition is still a work in progress, a few states in India have taken leadership in providing modern energy, increasing energy efficiency, and encouraging renewable energy use. Here, I focus on this subnational variation in the formulation and design of policy making to isolate factors that facilitate state-level policy innovation.

The nature and extent of policy innovations are often attributed to the structural characteristics of a state, such as the size of gross domestic product, the extent of industrialization, or political leadership. While these are important, the role of other types of policy ‘entrepreneurs’ has been given much less attention. Research I conducted found that a range of actors – within or outside the government, domestic or

international – contributed to policy changes designed to foster low-carbon innovations. Five examples stand out.

- In 2003, the state of Gujarat initiated the *jyotigram yojana*, or the lighted village scheme, to provide uninterrupted power supply to all non-agricultural rural consumers and ‘intelligently’ ration electricity for agriculture. The Asian Development Bank was instrumental in mandating electricity metering as a key condition of lending to Gujarat, while the idea for intelligent rationing was proposed by a senior water policy expert at the International Water Management Institute.
- In 2009, Gujarat became the first state in the country to adopt a policy to promote solar energy when it started work towards the Charanka solar park, which was briefly the largest solar park in Asia. The Clinton Climate Initiative worked closely with the Gujarat government in development of the policy and the solar park.
- In 2014, the then-undivided state of Andhra Pradesh enacted an energy conservation building code to increase energy efficiency in buildings. The Administrative Staff College of India collaborated with the National Resources Defense Council and the Indian Institute of Information Technology, Hyderabad to develop a policy proposal and promote its adoption by the state.
- In November 2014, in the wake of cyclone Hudhud, the state of Andhra Pradesh became a pioneer in adopting efficient, LED street lighting as part of the reconstruction process. Subsequently, it also became the first large state in the country to support the national program for distribution of LED lighting to households. Energy Efficiency Services Limited (EESL), an implementing agency of the federal government, played a key role in developing the program and supporting implementation.
- Earlier this year, Gujarat launched a solar irrigation scheme to encourage decreased electricity consumption in agriculture and incentivize groundwater consumption. The scheme was born out of a pilot project executed by the International Water Management Institute.

HOW ACADEMICS AND PRACTITIONERS CAN DISAGGREGATE POLICY ENTREPRENEURSHIP

Although literature on policy entrepreneurship has moved beyond the ‘lone hero’ narrative, disaggregation of policy entrepreneurship along different criteria by scholarship has created a plethora of new and overlapping terminology. Drawing on research on the above cases, entrepreneurial activities can be grouped into five aspects of policymaking: framing policy problems, creating policy alternatives, matching problems to solutions, championing policy programs, and brokering the policy process.

- Problem brokers create awareness about sustainability and help define and frame sustainability challenges. Problem brokers use numerous strategies in order to pursue these goals, such as focusing on major events, creating sustainability indices, altering problem perception, linking issues together, and using rhetorical persuasion.
- Policy entrepreneurs develop policy ideas and share knowledge about various alternatives. They can do so by collating best practices, using pilot projects to test or demonstrate ideas, leveraging conditions of funding as donor agencies, using high valence to ‘sell’ their policy proposals, and ‘shopping’ for an appropriate

venue that will be willing to act on their ideas.

- Political entrepreneurs expend political capital on adopting policies related to sustainability. They can do so by politicizing issues, mobilizing public opinion to turn sustainability into a mass movement, negotiating and bargaining to get a foot in the door, and changing the distribution of costs and benefits associated with an issue to gain support.
- Process brokers play a role in advancing policy formulation and implementation. They can play a key role in connecting stakeholders, building trust, monitoring challenges, institutionalizing ideas, and facilitating an environment for learning about various alternatives under conditions of uncertainty.
- Program champions develop program specifications to enable effective implementation of policies. Within the government, champions can lead implementation activities or use their experience and expertise to propose appropriate policy instruments or instrument settings as well as to shield sustainability policies from political churn. Outside the government, champions can highlight the merits and demerits of different policy design choices and encourage policy adoption by businesses and citizens.

MOVING FORWARD

Despite the challenges involved, a sustainable energy transition offers various entry points for action. The cases involved energy policy interventions to preserve groundwater, to contain energy deficit and ensure supply to industries, to reduce energy subsidies, and to reduce energy demand in the long run or even in disaster recovery. Entrepreneurs, both within and outside governments, can promote energy policy innovations that trigger bottom-up pathways to a more sustainable future. The disaggregation of policy entrepreneurship presented here can help them reflect on their role(s) in the system and the strategies and activities available to fulfill their chosen role(s).