

An Indian-Australian research partnership

Project Title:	India's Renewable Energy Policy	
Project Number	HSS0771	
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Research Clusters:

Research Themes:

Highlight which of the Academy's CLUSTERS this project will address? <i>(Please nominate JUST one. For more information, see www.iitbmonash.org)</i>		Highlight which of the Academy's Theme(s) this project will address? <i>(Feel free to nominate more than one. For more information, see www.iitbmonash.org)</i>	
1	Material Science/Engineering (including Nano, Metallurgy)	1	Advanced computational engineering, simulation and manufacture
2	Energy, Green Chem, Chemistry, Catalysis, Reaction Eng	2	Infrastructure Engineering
3	Math, CFD, Modelling, Manufacturing	3	Clean Energy
4	CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control	4	Water
5	Earth Sciences and Civil Engineering (Geo, Water, Climate)	5	Nanotechnology
6	Bio, Stem Cells, Bio Chem, Pharma, Food	6	Biotechnology and Stem Cell Research
7	Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng	7	Humanities and social sciences
8	HSS, Design, Management	8	Design

The research problem

Define the problem

Climate change is the most serious existential threat faced by humanity. The main response of the international community to this threat has been the development of the “pledge and review” system in the Paris Agreement of 2015, under the auspices of the United Nations Framework Convention on Climate Change. Under this system, each state puts forward its own Nationally Determined Contributions, which are its self-determined commitments to mitigating emissions and adapting to climate change.

The Nationally Determined Contributions (2015) of large and rapidly developing countries such as India are key to the success of the global response to climate change. India's NDC of 2015 carefully explains the historical and socioeconomic context in which India's national policy is formulated. This context includes the fact that today's most developed countries are historically responsible for a large proportion of harmful emissions, and that India faces a wide range of development challenges. It is in this context that India's NDC describes its ambitious energy policy, which places great emphasis on increasing the share of renewable energy in its energy mix and implementing a range of specific policy actions to achieve this increase. India's NDC commits to “more than 5 times increase in Renewable Capacity from 35 GW (up to March 2015) to 175 GW by 2022.” It refers to a range of specific policy measures to achieve this ambitious aim including coal cess, cuts in subsidies for fossil fuels, increases in taxes on petrol and diesel, market mechanisms including Perform Achieve and Trade (PAT), Renewable Energy Certificates (REC) and a regulatory regime of Renewable Purchase Obligation (RPO). India's NDC also refers to Tax Free Infrastructure Bonds of INR 50 billion (USD 794 million), which are being introduced for funding of renewable energy projects during the year 2015-16.

The research problem is encapsulated in the overarching aims of the project:

- to describe and explain India's recent energy policy with respect to renewables, and
- to develop forecasts of the likely future trajectories of Indian policy in this area.

Achieving the aims of describing and explaining recent energy policy on renewables will enrich our understanding of the Indian policymaking process in an area of vital national and international interest. How democratic and inclusive were the processes that resulted in these policies? To what extent was the best available scientific expertise integrated into the policy process? Achieving the aim of forecasting likely future trajectories will generate knowledge that will be of great interest to national and international policymakers, environmental groups and businesses.

Project aims

Define the aims of the project

Specific project aims, which address the broader aims of describing, explaining and forecasting Indian energy policy on renewables, are:

- Compare India's Nationally Determined Contribution and underlying energy policy on renewables with those of other major developing and developed countries and regions. The most relevant points of comparison among developing countries are Brazil and China. Such international comparisons are an essential part of a holistic description of India's policy. Moreover, this part of the project will embed the study in an established international research project on which Thomson is currently working, which is developing systematic and quantifiable comparisons of states' NDCs.
- Identify the range of policy options that were considered by the Indian authorities in relation to a broad sample of specific policy aims and actions. Identify the network of stakeholders (governmental and non-governmental, national and international) that had some degree of influence over the decisions. For instance, one of the policy measures is the Tax Free Infrastructure Bonds of INR 50 billion. The project will consider which other policy instruments and levels of investment were considered and supported by relevant stakeholders. This type of stakeholder analysis is based on a long-established tradition of research in policy analysis that combines qualitative and quantitative methods to describe technical policy settings.
- Extend the stakeholder analysis to a selection of unresolved and ongoing discussions on Indian energy policy. This part of the project will focus on a set of issues on which decisions are expected to be taken in the next year or two. It will identify the policy options and the network of stakeholders that support each of these options.
- Identify the most relevant models of collective decision-making and apply them to the descriptions of recent and ongoing policymaking. This part of the project draws on an established field of research in which political scientists have developed formal models of policymaking processes. These models simulate the process through which stakeholders lobby one another and government agencies to influence policy decisions. The alternative models in this field of research make different assumptions regarding the underlying policy process, for instance whether it is characterised by cooperative or non-cooperative interactions. These models generate

probabilistic forecasts of policy decisions. By comparing the models' forecasts to the outcomes of previous policy decisions, and assessing their accuracy, we make inferences about what explains these past decisions. The models' forecasts of decisions that have not yet been taken enables us to develop scenarios about likely future policy developments.

Within the broad contours of the topic and overarching aims, the PhD candidate will be encouraged to focus on and elaborate one or more of these specific aims.

Expected outcomes

Highlight the expected outcomes of the project

The project will develop new knowledge in relation to:

- How India's energy policy on renewables compares to that of other states, with a particular emphasis on comparisons with Brazil and China, as well as with large developed countries and regions.
- The processes through which India's energy policy on renewables has been formulated in recent years, in particular with respect to the range of national and international stakeholders that influenced the process, and the quality of scientific knowledge that informed policymaking.
- The likely future trajectory of Indian energy policy on specific and controversial policy issues that are currently the subject of ongoing discussion.

How will the project address the Goals of the above Themes?

Describe how the project will address the goals of one or more of the 6 Themes listed above.

The project is interdisciplinary in that it combines the themes of energy policy, specifically on renewables policy, and humanities, specifically policy analysis and forecasting.

Capabilities and Degrees Required

List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.

The student will have completed a Masters degree in Political Science or a related Social Science discipline from a top university / institute with a strong academic record.

Engineering graduates/ post-graduates in relevant streams such as energy, electrical, mechanical, chemical and systems are also welcome to apply.

Demonstrated ability to apply relevant theoretical perspectives and employ quantitative methods is essential.

Potential Collaborators

Please visit the IITB website www.iitb.ac.in OR Monash Website www.monash.edu to highlight some potential collaborators that would be best suited for the area of research you are intending to float.

There are several other academics at Monash and IITB whose expertise is highly relevant to this topic. The supervisory team will be expanded to include selected colleagues as the project develops.

Outside of the IITB-Monash Alliance, this project will facilitate collaboration with colleagues in the John Hopkins School of Advanced International Studies, specifically Professor Urpelainen, the Director of the Initiative for Sustainable Energy Policy at John Hopkins:

<http://sais-isep.org>

Prof. Jadhav is an expert on energy policy and renewable energy. She has particular expertise in rural electrification, energy efficiency, energy usage in irrigation, technology and farmer behaviour, solar photovoltaics, organizational models in electricity distribution.

Select up to **(4)** keywords from the Academy's approved keyword list (**available at <http://www.iitbmonash.org/becoming-a-research-supervisor/>**) relating to this project to make it easier for the students to apply.

Energy, climate change, humanities, modelling and simulation, policymaking, policy networks, policy analysis, policy forecasting