

## SUDATTA RAY

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### EDUCATION

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PhD	<b>Stanford University</b> Emmett Interdisciplinary Program in Environment and Resources ( <a href="#">E-IPER</a> ) Dissertation: Impact of Electricity Regulations on Food Security of Smallholder Farmers in India	ongoing
MSPPM	<b>Carnegie Mellon University</b> H. J. Heinz III College, School of Public Policy and Management Master of Science in Public Policy and Management – <a href="#">Data Analytics Track</a>	2014
MS	<b>University of Delhi</b> St. Stephen's College Master of Science in Chemistry	2009
BS	<b>University of Delhi</b> Sri Venkateswara College Bachelor of Science in Chemistry	2007

### PUBLICATIONS

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#### ACADEMIC MANUSCRIPTS

**Ray, S.**, Falcon W. & Naylor, R. "Rural Electrification in Agricultural Intensification Across India." (Under Review)

**Ray, S.** "Beyond Lights: The Diminishing Role of Rural Electrification in Indian Agriculture." (Under Review)

**Ray, S.** "Equitable Access of Irrigation Pumping Energy for Oriya Smallholder Farmers." (in prep)

**Ray, S.** & Jo, C. "Productive Power: Estimating the Potential for Productive Load Uses in Zimbabwe." (in prep)

#### POLICY REPORTS

Jain, A., **Ray, S.**, Ganesan, K., Aklin, M., Cheng, C. & Urpelainen J. (2015). "[Access to Clean Cooking Energy and Electricity, Survey of States](#)." *Columbia University and Council on Energy, Environment and Water Report*.

**Ray, S.**, Chaturvedi, V., Ganesan, K. & Ghosh, A. (2015). "[India's Intended Nationally Determined Contributions: Renewable Energy and Pathway to Paris](#)." *Council on Energy, Environment and Water Policy Brief*.

Ghosh, A. & **Ray, S.** (2015). "[Fixing Climate Governance through Effective Technology Partnerships](#)." *Fixing Climate Governance Series, Paper No. 3*. Centre for International Governance Innovation.

Ghosh, A., Vijayakumar & **Ray, S.** (2015). "[Climate Technology Partnerships: Form, Function and Impact](#)." *Fixing Climate Governance Series, Paper No. 2*. Centre for International Governance Innovation.

**Ray S.** (2015). "[Electricity Trading in its Infancy in South Asia](#)." *India Climate Dialogue Web Article*.

Ganesan, K., Jain, A., **Ray, S.**, Sharma, M. & Ghosh, A. (2014). "[Agenda for a Reformed Power Sector in India: Risk, Resource, Relay and Restructuring](#)." *Council on Energy, Environment and Water Policy Brief*. [Black Carbon Research Initiative](#) – *National Carbonaceous Aerosols Programme (NCAP)*, Ministry of

Environment & Forests, March 2011 – Editorial Team.

[Climate Change & India](#) - A 4x4 Assessment, A Sectoral and Regional Analysis for 2030s, Ministry of Environment & Forests, November 2010 – Editorial Team.

[India: Greenhouse Gas Emissions 2007](#), Ministry of Environment & Forests, May 2010 – Editorial Team.

## PRESENTATIONS & CONFERENCE ACTIVITY

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### CONFERENCE ACTIVITY

(\*Scheduled)

Ray, S. (2020)\*. "Beyond Lights: The Changing Impact of Rural Electrification in Indian Agriculture." *Association for Public Policy analysis & Management*. Presentation, (Online due to COVID).

Ray, S. (2020). "Beyond Lights: The Changing Impact of Rural Electrification in Indian Agriculture." *Agricultural & Applied Economics Association, Annual Meeting*. Presentation, (Kansas City, USA-Online due to COVID).

Ray, S. (2020). "Beyond Lights: The Changing Impact of Rural Electrification in Indian Agriculture." *Online Summer Workshop in Environment, Energy, and Transportation (Economics)*. Presentation, (Online).

Ray, S. (2020). "Beyond Lights: The Changing Impact of Rural Electrification in Indian Agriculture." *Association of Environmental and Resource Economist, Annual Summer Conference*. Presentation, (Miami, USA-Online due to COVID).

Ray, S. (2019). "Rural Electrification in Agricultural Intensification Across India." *American Geophysical Union, Fall Meeting 2019*. Poster, (San Francisco, USA).

Ray, S. (2019). "The Evolving Role of Rural Electrification in Indian Agriculture." *The University of Michigan Ann Arbor, Sustainability & Development Conference 2019*. Presentation, (Michigan, USA).

Ray, S. (2018). "Beyond Tube-wells: Bringing Irrigation to Oriya Smallholder Farmers." *IWMI- Tata's Partners' Meet 108, Building Climate Resilience for Doubling Farmers' Income – Innovations in Water, Land, Energy and Ecosystems*. Presentation, (Gujarat, India).

Ray, S. (2015). "Analysing Climate Actions and their Global Consequences." *World Resources Institute (WRI) Technical Practitioner's Workshop for Analyzing Mitigation INDCs*. Presentation, (Bonn, Germany).

Ray, S. (2015). "India's INDC: Renewable Energy and the Pathway to Paris." *Council of Energy, Environment and Water (CEEW) Climate Day, Negotiating the Climate Cliff*. Presentation, (New Delhi, India).

### INVITED TALKS

Ray, S. (2020). "Seeing the Light: Harnessing Rural Electrification to Boost Development" *Hard Earth Lecture Series*. Stanford University, California.

Ray, S. (2019). "Energy Access for Development: Scope and Need for Productive Uses of Electricity." *Global Climate and Energy Project, Student Lecture Series*. Stanford University, California.

Ray, S. (2019). "State of Energy Access in India." *Energy Access Panel, Stanford Energy Club*. Stanford University, California.

Ray, S. (2016). "Impact of Energy Policies on Resources Use and Food Security in India." *Enhancing Diversity in Graduate Education, Cross Talks*. Stanford University, California.

## RESEARCH EXPERIENCE

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- Graduate Research Student and Instructor, **Stanford University** 2015-Present
- Estimated the impact of rural electrification policy change on the growth in groundwater irrigation between 1986 and 2013 for 323 districts in India.
  - Modeled the impacts of different energy provision schemes on smallholder farmer income, groundwater sustainability and carbon emissions for 30 districts in Orissa, India.
  - Surveyed and analysed electricity use for 500 households across 5 urban informal settlements in Harare, Zimbabwe.
  - Taught "*Capstone Project Seminar in Environment and Resources*" (13 students).
  - Developed course curriculum and taught "*Achieving Universal Energy Access by 2030: Can it be Done?*" (15 students).
- Junior Research Associate, **Council on Energy, Environment and Water (CEEW)** 2014-2015
- Surveyed and analysed the state of energy access in 8,566 rural households across 6 states in India.
  - Developed integrated plans in agriculture, energy and water for tribal districts in Madhya Pradesh, India.
  - Analysed and recommended steps for reforming the Indian power sector to the Office of the Prime Minister of India.
  - Estimated the financial implications of India's Intended Nationally Determined Contribution to the UNFCCC.
- [Climate Corp Fellow](#), **Environmental Defense Fund** 2013 Summer
- Developed energy efficiency projects for Maricopa County Community Colleges and facilitated annual cost savings of \$220,000 and GHG emissions savings of 1,520 CO<sub>2</sub> eq.

## POLICY EXPERIENCE

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- Senior Programme Officer, **World Wide Fund for Nature – India** 2011-2012
- Led analyses of international climate change negotiations as part of the Global Climate Energy Initiative.
  - Analysed the State Action Plans on Climate Change for five Indian Himalayan states.
  - Developed a framework to track the efficacy of low carbon policies of ten states across India.
- Technical Officer, **Government of India, Ministry of Environment, Forests and Climate Change** 2009-2011
- Negotiated India's stand at 2 Conference of Parties and 2 Intersessional Meetings of United Nations Framework for Climate Change Convention (UNFCCC) Climate Change talks on issues of HFC mitigation and market mechanism.
  - Wrote briefs and responses to climate change related questions raised in the parliament.
  - Led a nation-wide initiative for the development of State-level Action Plans on Climate Change.

## GRANTS

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EIPER Collaboration Research Grant (\$10,000)	2019
McGee Grant (\$3,000)	2018
EIPER Summer Graduate Research Grant (2,110)	2018
EIPER Summer Graduate Research Grant (\$2,500)	2017
McGee Grant ( \$3,790)	2016
Enhancing Diversity in Graduate Education (EDGE) Travel Grant (\$863)	2015

## FELLOWSHIPS & AWARDS

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School of Earth, Energy and Environmental Sciences Certificate for Outstanding Mentoring	2020
Kimmelman Family Fellowship	2015- 2019
Enhancing Diversity in Graduate Fellowship (EDGE-STEM) Fellow	2015-2017
Fulbright- Nehru Master's Fellowship in Leadership and Development	2012-2014
HEINZ MSPPM Merit Based Scholarship	2012-2014
Second Prize, Annual Social Innovations Challenge, Carnegie Mellon University	2013

## TEACHING EXPERIENCE

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<i>Capstone Project Seminar in Environment and Resources</i> , Stanford University	2020
Course Assistant	
<i>Topics in Environment and Resources</i> , Stanford University	2019 &
Guest Lecturer	2017
<i>Achieving Universal Energy Access by 2030: Can it be done?</i> , Stanford University	2018
Course Developer and Assistant	

## DEPARTMENT & UNIVERSITY SERVICE

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Stanford University's Founders Circle Day Presenter	2019
Enhancing Diversity in Graduate Education (EDGE) Mentor	2017-2018
E-IPER Admissions Committee	2017