

## Shoibal Chakravarty

Ashoka Trust for Research in Ecology and the Environment  
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### Education

**1998-2005** PhD, Physics, Princeton University, Princeton, U.S.A. Dissertation  
Title: Topics in Quantum Magnetism

**1994-1998** BTech, Engineering Physics, Indian Institute of Technology, Mumbai,  
India

### Employment

**2017-present:** Fellow, Ashoka Trust for Research in Ecology and the Environ-  
ment

**2014-2017** Assistant Professor, National Institute of Advanced Studies, Banga-  
lore

**2013-2014** Visiting Research Consultant, National Institute of Advanced Studies,  
Bangalore

**2006-2013** Research Associate, Princeton Environmental Institute, Princeton  
University, Princeton U.S.A.

**1999-2005** Teaching and Research Assistant, Princeton University, Princeton,  
USA

### Areas of Specialisation

Energy and climate policy, energy modelling, renewable energy, energy access,  
energy and climate equity.

## Publications

### Working Papers and Drafts

Andrew Pascale, Shoibal Chakravarty, Paul Lant, Chris Greig, Simon Smart, *Surprises up the energy ladder*, 2017, <https://ssrn.com/abstract=2943850>

Shoibal Chakravarty and D. R. Ahuja, *Energy Transitions*, Chapter for the forthcoming book, Grand Challenges, published by Indian National Academy of Engineering (2017, forthcoming)

### Climate Change, Energy and Equity

Ashwin K Seshadri and Shoibal Chakravarty, *Dynamics versus optimisation in non-convex environmental economics problems with a single welfare function*, Current Science, Volume 112, Issue 2, 2017.

S. Chakravarty and D. R. Ahuja, *Bridging the gap between intentions and contributions requires determined effort*, Guest Editorial, Current Science, Vol 110, Issue 4, 2016.

H. Mitavachan and S. Chakravarty, *Is Solar Power Cheaper than Coal*, Current Science, Vol 109, Issue 11, 2015.

S. Chakravarty, *Cheap Oil, Climate Change Mitigation and India*, *Economic and Political Weekly*, (38-43), Vol L No. 9, February 28, 2015

S Chakravarty and M. Tavoni, (2013) *Energy poverty alleviation and climate change: Is there a trade off?*, Energy Economics 40 (2013) S67-73

M. Tavoni, S. Chakravarty and R. Socolow (2012), *Safe vs. Fair: A Formidable Trade-off in Tackling Climate Change*, Sustainability 2012; 4(2):210-226.

Shoibal Chakravarty and M. V. Ramana, *The Hiding Behind the Poor Debate: A Synthetic Review*, Book Chapter in Handbook on Climate Change and India: Development, Governance and Climate Change, Ed. Navroz Dubash, Oxford University Press, November 2011.

S. Chakravarty, A. Chikkatur, H. de Coninck, S. Pacala, R. Socolow, M. Tavoni (2009), *Sharing global CO2 emission reductions among one billion high emitters*, Proceedings of the National Academy of Sciences 106(29):11884-11888

S. Chakravarty, A. Chikkatur, H. de Coninck, S. Pacala, R. Socolow, M. Tavoni (2009), Reply to Grubler and Pachauri: *Developing national obligations from individual emissions*, Proceedings of the National Academy of Sciences 106(43):E124.

A. Chikkatur and S. Chakravarty (2008), *Need for an Integrated Energy Modelling Institution in India*, *Economic and Political Weekly*, (64-69), Vol XLIII No. 21, May 24, 2008

### Physics

F. J. Burwell, S. Chakravarty, S. L. Sondhi (2009), *Monopole flux state on the pyrochlore lattice*, Physical Review B **79**, 144432

Shoibal Chakravarty, Keshav Dasgupta, Ori J Ganor, Govindan Rajesh, *Pinned branes and new non-Lorentz invariant theories*, Nuclear Physics B, Volume 587, Issue 1-3, 2000.

## Honours

Nominated for the Indian Council for Cultural Relations (ICCR) Visiting Professor of Indian Studies at the Chinese University of Hong Kong (CUHK), Hong Kong in 2016-17. As a part of the Visiting Professorship, I would have taught a course on environmental impacts of energy use in India and initiated a research collaboration with the Department of Geography and Resource Management, CUHK. I turned down the opportunity due to my commitment to guide my PhD students through the critical thesis proposal development and submission stage.

Cited for the co-invention of The Personal Carbon Footprint, listed in the 50 Best Inventions of 2009, compiled by Time magazine, Dec.8, 2009. This was based on “Sharing global CO2 emission reductions among one billion high emitters.”

Awarded the Princeton University Carbon Mitigation Initiative best paper award in 2010 for the paper, *Sharing global CO2 emission reductions among one billion high emitters*.

## Conferences and Invited Talks

Social cost of electricity from coal, World Congress of Environment and Resource Economics 2018, 25-29 July, 2018, Gothenberg, Sweden.

Human Development Index distributions in India and the world, ISI-CECFEE Annual Conference, 17-18 November, 2017, Udaipur.

Renewables in the Indian Electricity Sector, Jawaharlal Nehru Centre for Advanced Scientific Research, 13th July 2016, Bangalore.

Renewables in the Indian Electricity Sector: How Fast and How Much? 5<sup>th</sup> Global Conference of the Initiative on Climate Adaptation Research and Understanding through the Social Sciences (ICARUS), June 30-July 1, 2016, Indian School of Business, Hyderabad.

The Future of the Indian Electricity Sector with High Renewable Penetration, CECFEE-Gothenburg Policy Workshop, Indian Statistical Institute, Nov 2, 2015, New Delhi.

100 Gigawatts of Solar by 2022 Risks, Systemic Externalities and External Factors, Workshop on ‘Is Power generation by solar cheaper than from coal?’, Indian Institute of Science and NIAS, Aug 8, 2015, Bangalore.

Energy and Climate: Is Climate Change Humanity’s Biggest Challenge? Ashoka University, March 19, 2015, New Delhi.

Open Source Energy Economy Models, Climate Science and Policy Workshop, Indian Institute of Bombay, Mar 7, 2014, Mumbai.

Open Source Modelling Tools for Energy and Climate Policy in India, Indian Institute of Delhi, Nov 26, 2012, New Delhi.

Learning Rates and the Green Energy Deployment Game, International Energy Workshop, June 19, 2012, Cape Town.

Equity and Emissions – How science informs and limits physical measures of equity, Conference on Intergenerational Equity and Climate Change, 14 June 2012, Paris.

Learning Rates, Green Energy Deployment, and Feasible Climate Agreements, 7th Annual Conference on Economic Growth and Development, Indian Statistical Institute, 15-17 Dec 2011, New Delhi.

One Billion High Emitters, Keynote address, Technology Oriented Cooperation and Strategies in India and China: Final Conference, Leuven University, Leuven 12 October 2009.

Projecting Aviation demand till 2050, International Energy Workshop, 17-19 June 2009, Venice.

One Billion High Emitters, ECN side-event, 13<sup>th</sup> session of the UNFCCC Convention subsidiary bodies – SBSTA and SBI, 1-12 June 2009, Bonn.

## Research Grants

*Facilitating the target of 100 GW Solar by 2022*

Funding agency: Ministry of New and Renewable Energy

Cost: Rs. 19,50,000

Duration: October 2016 – July 2017

## Teaching Experience

*Quantitative Methods*, 2017-18: Coordinator for the core course in statistics and programming in R for PhD students at ATREE.

*Programming for data analysis and modelling*, 2014-15: This course was offered to graduate students and research associates to teach Python, the standard scientific computing language, and to use it to teach the basics of data analysis and statistics.

*Energy Systems: Technology and Policy*, 2015-16: This is an introductory course covering, energy systems, climate change and policy for PhD students who intended to work in energy modelling and energy policy (co-taught with Dr. Gopi Rethinaraj, NIAS).

## **Professional Service**

Reviewer for Proceedings of the National Academy of Sciences, Global Environmental Change, International Environmental Agreements: Politics, Law and Economics, Nature Geoscience and Nature Communications.

Expert reviewer for research proposals submitted under the theme “Environment (including climate change)” for the main science funding agency of the European Union, the General Directorate of Research, European Commission.