

TEJAL KANITKAR

Energy, Environment, and Climate Change Program
School of Natural Sciences and Engineering
National Institute of Advanced Studies, Bengaluru
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Interests and Specialization

Energy transitions and energy policy

Energy modeling, Integrated energy-economy-emissions modeling

Climate Policy, Climate Change Mitigation

Qualifications

Ph.D., Department of Energy Science and Engineering **November 2016**

Indian Institute of Technology Bombay, Mumbai, India (External Candidate)

Thesis Title: *An Integrated Modelling Framework for Energy, Economy, and Emissions in India*

Master of Science, Department of Mechanical Engineering **July 2006**

University of Massachusetts, Amherst, Massachusetts, USA

Thesis Title: *Reliability Assessment of Distributed Generation System*

Bachelor of Engineering (B.E.) in Mechanical Engineering **May 2004**

University of Mumbai, Mumbai, India

Certified Energy Auditor **October 2007**

Bureau of Energy Efficiency, Ministry of Power, Government of India

Professional Experience

Associate Professor **June 2019 onwards**

Energy Environment Program, School of Natural Sciences and Engineering
National Institute of Advanced Studies, Bengaluru

Adjunct Faculty (Associate Professor) **June 2022-May 2024**

Manipal Academy of Higher Education, Manipal

Assistant Professor **September 2011 – May 2019**

Centre for Climate Change and Sustainability Studies,
Tata Institute of Social Sciences, Mumbai

Chairperson **June 2012 – May 2019**

Centre for Climate Change and Sustainability Studies,
Tata Institute of Social Sciences, Mumbai

Program Manager **June 2009 – August 2011**

Centre for Science Technology and Society,
Tata Institute of Social Sciences, Mumbai

Research Associate
Prayas Energy Group, Pune

September 2006 – January 2009

Research Assistant
Centre for Renewable Energy and Energy Efficiency,
Department of Mechanical Engineering,
University of Massachusetts, Amherst, MA

September 2004 – May 2006

Contribution to Government Committees and Delegations

- Member, Government of India Delegation to the **56th Session of the Intergovernmental Panel on Climate Change (IPCC)**: Approval of the report of Working Group-III to the 6th Assessment Report of the IPCC, 2022
- Member, Government of India Delegation to the **55th Session of the Intergovernmental Panel on Climate Change (IPCC)**: Approval of the report of Working Group-II to the 6th Assessment Report of the IPCC, 2022
- Member, Government of India Delegation to the **26th Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC)**, 2021
- Member, Government of India Delegation to the **54th Session of the Intergovernmental Panel on Climate Change (IPCC)**: Approval of the report of Working Group-I to the 6th Assessment Report of the IPCC, 2021
- Member, Technical Advisory Committee of Experts, for **India's Long-term Low Emissions Development Strategies**, constituted by the Ministry of Environment, Forests, and Climate Change (MoEF&CC), Government of India
- Chairperson, **Working Group on Energy for the formulation of 14th Five Year Plan**, State Planning Board, Government of Kerala, 2021
- Expert Member, **Joint committee for Report on Carbon Neutral Ladakh** appointed by the Ministry of Environment, Forests, and Climate Change (MoEF&CC), 2020
- Analysis of State-level Impacts of COVID-19 estimated using Input-Output Methodology for Planning Board, Government of Kerala, 2020
- Part of review team for the **Third Biennial Report of the Government of India to the UNFCCC**, 2020
- Part of review team for Ministry for Environment, Forests and Climate Change, Government of India, for **IPCC's Special Report on 1.5 deg. C Global Warming**, 2019
- Part of team for mid-term review of the **11th Five Year Plan (Electricity Sector) for Andaman and Nicobar Islands, Government of India**, 2009

Contribution to Non-Government Committees and Other Work

- Member, International Advisory Board, Energy Policy (International peer-reviewed journal)
- Observer to the UNFCCC's 23rd Conference of Parties, Bonn, Germany, 2017
- Observer to the UNFCCC's 24th Conference of Parties, Katowice, Poland, 2018
- Observer to the UNFCCC's 25th Conference of Parties, Madrid, Spain, 2019
- Member of the Steering Committee of Bengaluru Sustainability Forum, 2020-2021
- Energy Audits for Small and Medium Sized Industry in New York and New England area as part of a program sponsored by the Department of Energy (DOE), USA, 2004-2006

Selected Research Publications

Journal papers

- Kanitkar, T., Songola, H., (2022), *A methodology to correlate short-term regional climate action and long-term global temperature goals*, Current Science, Vol 122, p 0689, (2022) doi: 10.18520/cs/v122/i6/682-688
- Jayawant S., Kanitkar, T., (2022), *Analysing the implications of electrification of public transport buses in Pune city, India*, Current Science, Vol 122, p 0557, (2022) doi: 10.18520/cs/v122/i5/557-568
- Kanitkar, T., Thejesh, N., & Ranjan, U. (2021). *Cost of avoided carbon: Optimizing power supply in southern India*, Energy Policy, 149, 111988.
- Kanitkar, T., (2021) *Equity in Global Climate Policy and Implications for India's Energy Future*, Economic and Political Weekly, Vol. 56, Issue No. 52, Dec, 2021
- Ramakumar, R. and Kanitkar, T. (2021). *Impact of COVID-19 Pandemic on the Indian Economy: A Critical Analysis*, Investigación Económica, Vol 80, No.315.
- Kanitkar, T. (2020). *The COVID-19 lockdown in India: Impacts on the economy and the power sector*. *Global Transitions*, 2, 150-156.
- Kanitkar, T., Mahalingam, S., & Srikanth, R. (2020). *Electricity (Amendment) Bill, 2020*. Economic & Political Weekly, 55(41), 41.
- Kanitkar, T., Banerjee, R., & Jayaraman, T. (2019). *An integrated modeling framework for energy economy and emissions modeling: A case for India*, Energy, 167, 670-679.
- Jayaraman, T., Kanitkar, T., (2016) *Deepening the Climate Crisis*, Economic and Political Weekly, January 10, 2016, Vol XLV, No.1.
- Kanitkar, T., (2015), *1.5 or 2 deg. C, What should the Global Climate Goal be?*, Review of Agrarian Studies, vol. 6, no. 1, December 2015.

- Kanitkar, T., Banerjee, R, Jayaraman, T., (2015), *Impact of economic structure on mitigation targets for developing countries*, *Energy for Sustainable Development*, 26 (2015) 56–61.
- Kanitkar, T (2014), *Climate Change and Food Production Systems*, *Review of Agrarian Studies*, vol. 4, no. 1. June 2014.
- Kanitkar, T., Jayaraman, T., D'Souza, M., (2013) *Carbon Budgets for Climate Change Mitigation: A GAMS Based Emissions Model*, *Current Science*, Vol. 104, No.7, 2013.
- Kanitkar, T., & Banerjee, R. (2011). *Power sector planning in India*. *Journal of Economic Policy and Research*, 7(1), 1-23.
- Jayaraman, T., Kanitkar, T., D'Souza, M., (2010), *Deconstructing the Climate Blame Game*, *Commentary, Economic and Political Weekly*, January 2, 2010, Vol XLV, No.1.
- Kanitkar, T., Jayaraman, T., D'Souza, M., Purkayastha, P., Raghunandan, D, Talwar, R, (2009), *How Much Carbon Space Do We Have, The physical constraints on India's Climate Policy and its Implications*, *Special Article, Economic and Political Weekly*, October 10, 2009, Vol XLIV, No. 41.

Books and book chapters

- Kanitkar T., *An Integrated Framework for Energy-Economy-Emissions Modeling: A Case Study of India*, Springer, Cham, Series Print ISSN 2191-554. (DOI <https://doi.org/10.1007/978-3-030-18263-2>), 2020.
- Kanitkar T., Jayaraman, T., *Equity in Long-Term Mitigation*, Book Chapter in *India in a warming world: Integrating climate change and development*. Oxford University Press (2019).
- Kanitkar, T. & Jayaraman, T. (2019). *Meeting the Temperature Targets Equitably – Relevance of the Carbon Budget Approach*, Book Chapter to Appear in Edited Volume on *Climate Change: India's Perceptions, Policies, and Expectations*, MoEFCC, Government of India.
- Jayaraman, T., Kanitkar, T., D'Souza, M., (2012) *Equity and Burden Sharing in Emission Scenarios: A Carbon Budget Approach*, Book Chapter, *Handbook of Climate Change and India, Development, Politics and Governance*, Oxford University Press, 2012.

Conference Papers

- Kanitkar, T., *Emissions of the Past and Future: The Continued Relevance of Equity in Climate Change*, Conference on Advancing Reformed Multilateralism in Changing the World, Indian Council of World Affairs, December 2020.
- Kanitkar, T., (2017). *The Mitigation Burden Beyond 2030 – Should Developing Countries be Thinking of New (I)NDCs*, *Conference on Climate Action: Mitigation and Adaptation in a Post Paris World*, 8th Annual Conference on Climate Change at Tata Institute of Social Sciences, August 2017.
- Kanitkar, T., Jayaraman, T. & Banerjee, R. (2016). *Energy Options for India in a Carbon Constrained World – Analysis Using GAMS*, SEES 2016, Singapore, February 2016.

- Kanitkar T. (2015), *Equity, The Global Commons and the Paris Agreement*, International Conference on Cities in the Global South, Mumbai, India.
- Kanitkar, T. (2014), *Equity and the Allocation of Mitigation Burdens: A Carbon Budgets Approach*, American Geophysical Union, 2014 Fall Meeting, USA.
- Kanitkar T., Alam, M. (2012), *Drivers of Energy Access and Substitution: Results from 4 villages in Maharashtra*, 4th International Symposium on Energy & Environment: ACCESS, McDonnell International Scholars Academy.
- Kanitkar T., Jayaraman, T. (2012), *Energy Intensity and Climate Change Mitigation: A Comparative Analysis of Developed and Developing Countries*, National Conference on Climate Change, IIT Delhi.
- Kanitkar, T., Kosanovic, D., (2011) *Evaluation of the Contribution of On-Site Generation to Grid and Customer*, SAE World Conference Proceedings, Detroit, USA, April 2011.
- Kanitkar, T., Jayaraman, T., D'Souza, M., Sanwal, M., Purkayastha, P., Talwar, R., Raghunandan, D., (2010) *Global Carbon Budgets and Burden Sharing in Mitigation Actions, Discussion Paper for Conference on Global Carbon Budgets and Equity in Climate Change*, Tata Institute of Social Sciences and Ministry of Environment and Forest, Gol, June 2010
- Sreekumar, N., Kanitkar, T., (2008), *Balancing Regulation and Incentives to Enhance Energy Access to the Poor and Women in Privatising Energy Markets*, Conference on Gender and Poverty Sensitive Energy Policies in Asia and the Pacific by ENERGIA and UNESCAP, November 2008, Bangkok, Thailand.

Review Articles, Working Papers, Policy Briefs, and Reports

- Kanitkar, T. (2022), *Foregrounding Equity in Climate Action*, NIAS Policy Brief (NIAS/NSE/EEC/U/PB/15/2022), March 2022
- Ramakumar, R., & Kanitkar, T. (2020). *Impact of the Covid 19 Pandemic on the Indian Economy: A Critical Assessment* (NIAS/NSE/EEP/U/WP/18/2020).
- Kanitkar, T., Thejesh, N., Ranjan, U., Srikanth, R., (2020), *Optimal Electricity Mix for the Southern Region*, Summary Report of NIAS-MoES Workshop, January 2020
- Kanitkar, T. (2020). *Incomplete Story of the Political Economy of the Power Sector*, Economic & Political Weekly, 55(42), 42
- Jayaraman, T., Kanitkar, T., D'Souza, M. (2011). *Equitable access to sustainable development: An Indian approach*, p.59-77, Report in the BASIC expert group compendium: Beijing, Brasilia, Cape Town and Mumbai.
- Kanitkar, T., Sreekumar, N., (2008), *Awareness and Action for Better Electricity Service – An agenda for the Community*, **Booklet**, Prayas Energy Group, January 2008.

- Kanitkar, T., Vagholikar, N., (2007), *Alternative Power Planning*, **Booklet**, Prayas Energy Group, September 2007.

Major Research Projects

Project Name	Funding Agency & Grant
Preparation of Draft Chapter on Climate Change Mitigation for India's Third National Communication to the UNFCCC, 2021 (6 months)	Ministry of Environment Forests and Climate Change (Rs. 2.5 million)
Equity and CBDR-RC in Achieving the Paris Agreement Goals – Implications for India (CO-PI with collaborators from other Institutes), 2021 (1 year)	Ministry of Environment Forests and Climate Change (Rs. 6 million)
Human Capacity Building in Strategic Knowledge in Climate Change 2017 (3 years)	Department of Science and Technology, Government of India (Rs. 10.6 million)
Capacity Building in Sustainability and Environmental Management, 2017 (3 years)	Erasmus+ Program of EU (Rs. 4.3 million)
Climate Action: Mitigation and Adaptation in a Post-Paris World, 2017 (8 months)	Rosa Luxemburg Stiftung, Germany (Rs. 1.4 million)
Equity and differentiation in the context of 2015 agreement, 2016 (1 year)	Ministry of Environment, Forests, and Climate Change, Government of India (Rs. 0.75 million)
Village Study of Vulnerability and Adaptation in Maharashtra 2013 (1 year)	Environment Department, Government of Maharashtra (Rs. 0.33 million)
Building Capacities for Climate Action, 2012 (2 years)	Shakti Foundation (Rs. 2.8 million)
Energy and Climate Change Mitigation: Pathways Under a Carbon Budget, 2011 (2 years)	World Wildlife Fund, India (Rs. 0.7 million)
Study on Emissions Modelling 2010 (1 year)	Ministry of Environment and Forests, Government of India (Rs. 1.2 million)

Academic Program Development and Teaching

- Co-developed the **Masters Program in Climate Change and Sustainability Studies** at the Tata Institute of Social Sciences, Mumbai. This was one of the first interdisciplinary programs on climate change in the country.
- Developed a **Masters Program, Post-Graduate Diploma Program and Certificate Course in Climate Change and Sustainability Studies** for the BRICS University, Initiative of the Government of India

- **Courses developed and taught:**

- i. Energy and Climate Change Mitigation - Basic (Masters at TISS)
- ii. Energy and Climate Change Mitigation- Advanced (Masters/PhD at TISS and NIAS)
- iii. Energy Modelling (Masters/PhD level at TISS, NIAS and IISc)
- iv. Statistical Research Methods (Masters/PhD at NIAS and TISS)
- v. Contemporary Debates in Climate Change and Sustainable Development (Advanced Undergraduate/Masters at TISS)
- vi. Sustainable Development and Climate Change (Advanced Undergraduate/Masters at TISS)
- vii. Socio-Economic Dynamics of Sustainability (Masters at IISc)
- viii. Input-Output Methods in Economic Research and Energy Modeling (Masters/PhD at NIAS)

Graduate Student Advising

Ph.D.: 5 (1 Graduated) + 2 (Co-advising)

M.Phil.: 1 graduated

Masters: 29 graduated

Fieldwork and Field Studies

Designed, implemented and supervised the following field work related activities:

- Socio-Economic Impact of Agrometeorological Services (2020-21)
Duration: 4-5 months, Location: North Interior Karnataka
- Assessment of first and last mile connectivity to the Phase 1 and Phase 2 of Bengaluru Metro (2020-21)
Duration; 1 month, Location: Bengaluru
- Urban field survey (TISS) (2012, 2013, 2017, 2018)
Duration: 2 weeks each, Locations: Pune and Mumbai
- Rural field survey- Village study (TISS) (2013, 2014, 2016, 2017)
Duration: 3 weeks each, Locations: Osmanabad, Palghar, Sindhudurg, and Kolhapur
- Cooking energy study in rural areas (2012)
Duration:4 weeks, Locations: Beed district and Nashik district
- Study of rural energy access (2008)
Duration: 2 weeks, Location: Mokhada, Jawahar, Dahanu talukas

Conferences and Workshops Organized/Co-Organized

- **NIAS-DST Training Programme on Science and Technology Innovation Policy**, September 2022
- **Conference on Climate Change at the Tata Institute of Social Sciences** (Conference held every year between 2009 and 2019)
- Session on “Women, Science, and Scientific Temper” at the **16th National Conference of the Indian Association of Women's Studies (2020)**.
- **Workshop on “Optimal Electricity Mix for the Southern Region”**, Energy and Environment Program at NIAS (2020)
- **Workshop on Climate Change and Sustainable Development for Practitioners from Social Science backgrounds (2018, 2019)**, Supported by the Department of Science and Technology, GoI
- **Workshop on Climate Change and Sustainable Development for Practitioners from Science and Engineering backgrounds (2018)**, Supported by the Department of Science and Technology, GoI
- **Workshop on Equity in Climate Change (2018)**, Supported by the Department of Science and Technology, and MoEF&CC, GoI
- **4 Workshops on Climate Action: Mitigation and Adaptation Strategies (2012)**, for representatives of non-governmental organizations and grassroots activists in 4 second tier cities in India, Supported by Shakti Foundation
- **Workshop on Energy and Climate Change Mitigation for Disaster Managers in Assam (2013)**, Supported by Government of Assam

Administrative/Institutional Roles

- Member of NIAS Doctoral Committee from January 2021 onwards for a 2 year term.
- Convenor of the Faculty Colloquium at NIAS from January 2021 onwards for a 2 year term
- Member of the Committee to Develop an Institutional Strategy for Sustainability, NIAS, 2019-2020
- Member of the Task Force for the implementation of the Choice Based Credit System at TISS, 2016.
- Coordinator for the School of Habitat Studies for the implementation of the Choice Based Credit System for the years 2016-17, 2017-18, and 2018-19.
- Member of the Committee for development and administration of the TISS-NET, 2017-18.
- Fieldwork coordinator for the Centre for Climate Change and Sustainability Studies, 2012 to 2018.

Outreach and Extension Activities in the last year (2021)

Selected Articles (2021-22)	Selected Invited Lectures (2021-22)
IPCC calls for immediate action rather than rhetorical references to a “climate crisis”, Frontline, 10 September 2021	Climate Change and India’s Energy Future, Oxford Energy Series, November 2021
The Net Zero Subterfuge, The Indian Express, 31 October 2021	What should India’s position on the global Net Zero Target be?, GUAC, Indian Institute of Science, November 2021
Why the Climate Equity Monitor is Needed, The New Indian Express, 3 November 2021	Is the North to Blame for the Climate Crisis?, Scottish Parliament, November 2021
The Message from the IPCC Report, The Hindu, 17 August 2021	Are Net-Zero Targets Ambitious?, University of Sussex, June 2021
Deconstructing declarations of carbon neutrality, The Hindy, 8 April 2021	Rethinking the Economics of Climate Change Rethinking Economics India Network (2021)