GANESH HEGDE

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211, Energy Systems Analysis Group,
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Visiting Research Scholar
School of Public Policy, 409, Block 5,
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EDUCATION

PhD Indian Institute of Technology Bombay **2021**
Thesis Title: "Understanding Rural Electrification Policy Evolution and Inequality in Residential Electricity Consumption in India"

ME Bangalore University, Power and Energy Systems **2015**
Dissertation Title: "GIS-based renewable energy potential assessment and Decentralised energy planning"

BE Visweswaraiah Technological University (VTU), Electrical and Electronics Engineering **2012**

HONORS AND AWARDS

Best PhD Thesis Award **2022**
Received by Centre for Technology Alternatives for Rural Areas, Indian Institute of Technology Bombay.

Best Poster Award **2017**
'Understanding the Trends in Electricity Supply and Its Implications on Rural Residential Feeders' at the 6th International Conference on Advances in Energy Research (ICAER) from 12-14 December 2017, Indian Institute of Technology Bombay, Mumbai, India.

Sahyadri Young Ecologist Award 2014 **2014**
Received at LAKE 2014 organised by Energy and Wetlands Research Group, Centre for Ecological Sciences, Indian Institute of Science, Bangalore.

EXPERIENCE

Visiting Research Scholar **Feb. 2026 - Jun. 2026**
IIT Delhi, Delhi, India

- Collaborating on the net-zero India modelling and downscaling efforts.
- VRE siting and identifying bottlenecks and opportunities in India
- Developing a community-level siting survey for VRE across states

Postdoctoral Research Associate **Mar. 2022 - Dec. 2025**

Princeton University, Princeton, NJ, USA

- Leading the net-zero India modelling and downscaling efforts.
- Developed the project proposal and scoping for the local partners for collaboration
- Energy systems and geo-spatial modelling of India's power system for decarbonization

Associate Fellow **Oct. 2023 -**
Transitions Research, Goa, India

- Advising on city-level energy transition, including developing emission inventory (scope-1, 2, and 3) and piloting solutions for reducing emissions while helping improve the communities(more).

Project Coordinating Officer **Sep. 2020 - Nov. 2021**
TUM SEED Centre, IIT Bombay

- The living labs will be implemented in a step-wise process between 2020 and 2024. In each step, we integrate the community members to co-create, validate, test and further develop the new technologies in this setting (more).

Research Consultant **Nov. 2018 - Jun. 2019**
IIT Bombay-Monash Academy

- This study examines three logics of public service delivery – clientelism, incrementalism and maximin – concerning the recent massive expansion of electricity access in India using spatial and national-level survey data (more).

Project Staff
Energy and Wetlands Research Group, **Jun. 2012 to May. 2015**
Centre for Ecological Sciences, IISC Bangalore

- Renewable Energy Potential Assessment using Remote Sensing and GIS
- Optimisation and Planning of Decentralised Energy Systems
- Ecological Carrying Capacity Assessment (more)

PUBLICATIONS (Google Scholar)

Book Chapters

- Hegde G., Rao A.B., and Agnihotri S.B., "Understanding Energy Inequality in India", State of India's Environment Report 2022, Center for Science and Environment, New Delhi, India (more)
- Hegde G., Rao A.B., and Agnihotri S.B., "Analysing the Inequality Pathways of Domestic Electricity Consumption in India", In: Singh S., Ramadesigan V. (eds) *Advances in Energy Research*, vol. 1, 2020, pp. 715 – 727, Springer Proceedings in Energy, Springer, Singapore (chapter).
- Swami S., Hegde G., Rao A.B., and Agnihotri S.B., "How Do Supply-Side Constraints Affect the Rural Residential Feeder Parameters?", In: Singh S.,

Ramadesigan V. (eds) *Advances in Energy Research*, vol. 1, 2020, pp. 505 – 518, Springer Proceedings in Energy, Springer, Singapore (chapter).

Journal Publications

- Gwal, S., Sharma, A., Pascale, A., Dasgupta, R., Hegde, G., & Greig, C. (2025). Potential of India's AFOLU sector in achieving net zero: A systematic review of land-based mitigation strategies. *Land Use Policy*, *159*, 107798 (paper).
- Sawant N and Hegde G., "Missing Linkages in the Electricity–Water Nexus in Indian Agriculture", Economic and Political Weekly, vol. 57, issue 39, September 2022 (paper).
- Arranz A.M., Thomson R., Zech S., Hegde G., Arunachalam D., and Rao A.B., "The uneven expansion of electricity supply in India: The logics of clientelism, incrementalism and maximin", Energy Research and Social Science, vol. 78, August 2021, 102126 (paper).
- Ramachandra T.V. and Hegde G., "Energy Trajectory in India: Challenges and Opportunities for Innovation", Journal of Resources, Energy and Development, vol. 12 (1&2), 2015, pp. 1-24 (paper).
- Ramachandra T.V., Hegde G., and Krishnadas G., "Scope for Solar Energy in Uttara Kannada, Karnataka state, India: Rooftop PV for Domestic Electricity and Standalone Systems for Irrigation", Productivity, vol. 55, 2014, pp. 101-119 (paper).
- Ramachandra T.V., Hegde G., and Krishnadas G., "Potential Assessment and Decentralised Applications of Wind Energy in Uttara Kannada, Karnataka", International Journal of Renewable Energy Research, vol. 4, no. 1, 2014, pp. 1-10 (paper).
- Ramachandra T.V., Hegde G., Setturu B., and Krishnadas G., "Bioenergy: A sustainable Energy Option for Rural India", Advances in Forestry Letters (AFL), vol. 3, issue 1, 2014, pp. 1-15 (paper).
- Ramachandra T.V. and Hegde G., "Decentralized Renewable Energy Options for the Western Ghats", The Journal of MGIRED, vol. 1, issue 1, pp. 24-43 (paper).

Conference Papers

- Hegde G., Agnihotri S.B., and Rao A.B., "Tracing the Contours of Inequality in Household Electricity Consumption in India". 36th International Energy Workshop (IEW), 12-14 July, 2017, University of Maryland, College Park, Maryland (more).
- Ramachandra T.V. and Hegde G., "Scope for Distributed Renewable Energy Systems in South India", IEEE Global Humanitarian Technology Conference, South Asia Satellite, 26-27 September 2014, Kottayam, Kerala (more).
- Ramachandra T.V. and Hegde G., "Energy Latitude in Western Ghats through Decentralized Renewable Energy Resources", SYNERGY with ENERGY: 9th National Conference on Indian Energy Sector, May 23-24, 2014, Ahmedabad, India.

Technical Reports

- Ramachandra T.V., Hegde G., and Jain R., "Solar Energy – The Sustainable Energy Option in Karnataka". CES Technical Report 132, Energy & Wetlands Research Group, Centre for Ecological Sciences, Indian Institute of Science, Bangalore – 560012 (report).
- Ramachandra T.V., Chandran S.M.D., Joshi N.V., Hegde G. and Krishnadas G., "Sustainable Energy Alternatives for Uttara Kannada", ENVIS Technical Report 58, Environmental Information System [ENVIS], Centre for Ecological Sciences, Indian Institute of Science, Bangalore – 560012 (report).

PROFESSIONAL TRAINING

Certificate Course in Methods and Applications in Social Science Research (CCMASSR) Institute for Social and Economic Change (ISEC), Bengaluru, India

SCADA/EMS, protection and stability of the power system
Southern Region Load Despatch Center (SRLDC), Bangalore, India

Solar PV Grid Connected Power Plant
National Training Centre for Solar Technology, Karnataka Power Corporation Limited, Bangalore, India. November 13 - 18, 2014.

Western Ghats Biodiversity using Free and Open-Source Geospatial Tools (FOSS4G), Indian Institute of Science, Bangalore, India. February 24 – 28, 2014.

DST-SERB school on Smart Transmission Grid using Synchrophasor Technology, Indian Institute of Technology Kanpur, India. December 10-15, 2013.

TECHNICAL TOOLKIT

- **Modeling & Simulation:** Macro-Energy Systems, MATLAB, Julia-Jump.
- **Geo-spatial Tools:** QGIS, ArcGIS Pro, FOSS4G.
- **Statistical Analysis:** R, Python, STATA, IBM SPSS, Minitab.
- **Specialized Training:** Smart Transmission Grids, Solar PV Grid-Connected Plants, SCADA/EMS