Ankita Singh Gaur

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SUMMARY

Expertise in energy systems modeling, with experience in developing sustainable decarbonization pathways to inform climate action policy at the national level. Experience modeling policy measures using energy systems optimization models to inform mitigation strategies. I am keenly interested in energy systems modeling research, global and national energy transition scenarios, and their impact on SDGs.

EDUCATION

University College Cork, Ireland 2020 - 2024
PhD, Energy Engineering
Thesis: Depicting energy service demand as a mitigation lever in energy systems models

Malaviya National Institute of Technology Jaipur, India 2016 - 2018
Master in Technology, Renewable Energy

National Institute of Technology Goa, India 2011 - 2015
Bachelor in Technology, Electrical and Electronics Engineering

RESEARCH/WORK EXPERIENCE

Argonne National Laboratory (ANL) Lemont, IL, USA
Postdoctoral Appointee *Aug 2024-Present*
Research work:

- Leading the analysis of energy transition in the Balkans using TIMES-Balkans
- Contributing to the development of multi-model framework for addressing energy security and resiliency challenges (Linking TIMES model to a power systems model)

Project management and mentorship duties:

- Country Coordination support for Indonesia within the Net-Zero World Initiative
- Advising participants from Indonesia within the Climate Smart Women Energy Leaders (CS-WEL) program 2024

University College Cork (UCC) Cork, Ireland
PhD candidate, MaREI-Science Foundation Ireland (SFI) funded *Sep 2020-Jul 2024*
Part of the TIMES-Ireland Model (TIM) developer team. My main contributions to TIM are:

- Developed energy service demand projections for all the end-use sectors, which is the first such time a consistent set of these demands has been produced for Ireland
- Developed the Irish Low Energy Demand (ILED) pathway. Results from this analysis have been discussed in debates in the Dáil, have underpinned recommendations to the Oireachtas Committee on Climate Action and in newspaper articles
- Improved granularity and evidence base for developing future energy service demand scenarios at the national level based on spatial settlement patterns

International Institute for Applied Systems Analysis (IIASA) Vienna, Austria
Young Scientists Summer Program 2023 *Jun 2023-Aug 2023*

- Developed an open-source evidence-based framework to quantify sustainable mobility scenarios for Global South regions in large-scale IAMs

Economic and Social Research Institute (ESRI) Dublin, Ireland

Research Assistant, Energy Systems Integration Partnership Program (ESIPP) *Aug 2018-Aug 2020*

- Analysed the impact of heat electrification on the power system using ENGINE model for Ireland
- Reviewed current literature and status of heat pump related policies in the EU
- Collaborated with researchers from University College Dublin to build a database of heating demand at the residential level in Ireland

PUBLISHED/WORKING PAPERS (Google Scholar Profile)

- **Gaur, A.**, Javaid, A., Kishimoto, P., and Daly, H. Evidence-based passenger transportation demand scenarios for South Asia in Integrated Assessment Models. Submitted to Transportation Research Part D.
- Aryanpur, V., Balyk, O., Glynn, J., **Gaur, A.**, McGuire, J. and Daly, H., 2024. Implications of Accelerated and Delayed Climate Action for Energy Transition under Carbon Budgets. npj Climate Action, 3, 97. DOI
- **Gaur, A.**, McGuire, J., O'Riordan, V., Curtis, J. and Daly, H., 2024. Dispersed settlement patterns can hinder net-zero transition: Evidence from Ireland. Energy Strategy Reviews, 51, p.101296. DOI
- McGuire, J., Rogan, F., Balyk, O., Mac, Uidhir, T., **Gaur, A.**, and Daly, H., 2023. Developing decarbonisation pathways in changing TIMES for Irish homes. Energy Strategy Reviews, 47, p.101086. DOI
- Jain, A., Yamujala, S., **Gaur, A.**, Das, P., Bhakar, R. and Mathur, J., 2023. Power Sector Decarbonization Planning Considering Renewable Resource Variability and System Operational Constraints. Applied Energy, 331, p.120404. DOI
- **Gaur, A.**, Balyk, O., Glynn, J., Curtis, J. and Daly, H., 2022. Low energy demand scenario for feasible deep decarbonisation: Whole energy systems modelling for Ireland. Renewable and Sustainable Energy Transition, p.100024. DOI
- Balyk, O., Glynn, J., Aryanpur, V., **Gaur, A.**, McGuire, J., Smith, A., Yue, X. and Daly, H., 2022. TIM: modelling pathways to meet Ireland's long-term energy system challenges with the TIMES-Ireland Model (v1.0). Geoscientific Model Development, 15, p. 4991–5019. DOI
- **Gaur, A.**, Fitiwi, D.Z., Lynch, M., and Longoria, G., 2022. Implications of heating sector electrification on the Irish power system in view of the Climate Action Plan. Energy Policy, 168, p.113136. DOI
- **Gaur, A.**, Fitiwi, D.Z., and Curtis, J., 2020. Heat pumps and our low-carbon future: A comprehensive review. Energy Research and Social Science, 71, p.101764. DOI
- Hoare, C., Aghamolaei, R., Lynch, M., **Gaur, A.**, and O'Donnell, J., 2022. A linked data approach to multi-scale energy modelling. Advanced Engineering Informatics, 54, p.101719. DOI
- **Gaur, A.**, Das, P., Jain, A., Bhakar, R. and Mathur, J., 2019. Long-term energy system planning considering short-term operational constraints. Energy Strategy Reviews, 26, p.100383. DOI

PRESENTATIONS/POSTERS

- International Energy Workshop (IEW), IRENA, Bonn, Germany, June 2024
- International Energy Workshop (IEW), Golden, CO, USA, June 2023
- Environmental Researchers Colloquium, ENVIRON, April 2023
- IEA-ETSAP workshop - Current modelling practices, IFE, Norway, September 2022

- Scenarios Forum 2022, IIASA, Vienna, Austria, June 2022
- MaREI/ESRI Energy and Climate Policy Research Seminar, May 2022
- International Energy Workshop (IEW), Freiburg, Germany, May 2022
- Integrated Assessment Modeling Consortium (IAMC) Annual Meeting 2021
- IEA-ETSAP summer workshop, June 2021
- Environmental Researchers Colloquium, ENVIRON, June 2021
- MaREI Symposium, November 2020
- 5th ICACER 2020 Barcelona, Spain, April 2020
- ESRI/UCD conference: Energy research to enable climate change mitigation, September 2019
- 13th IEEE PowerTech 2019 Milan, June 2019
- Energy Systems Integration Partnership Program (ESIPP) Symposium, 2018 and 2019

INVITED TALKS/LECTURES

- Gaur, A., 2024. Modelling alternate demand pathways in energy systems models. Danish Energy Agency energy planning course for the Ukraine Energy Ministry. June 2024. Online event.
- Gaur, A., 2022. Energy systems transformations required to meet the 2030 decarbonization target. Green Week, University College Cork. March 2022.
- Gaur, A., 2021. Introduction to Power System Planning. Faculty Development Programme (FDP) on Challenges in Evolving Power Systems. Department of Electrical Engineering, Finolex Academy of Management & Technology, India. November 2021. Online event.

SKILLS

- **Software skills:** Python, R, TIMES-VEDA, GAMS, MATLAB, GIT, QGIS, LaTeX
- **Language skills:** English (fluent), Hindi (native), German (beginner- A1)

AWARDS/RECOGNITION

- MaREI Researcher Award for 2021
- Best presentation award at the 5th ICACER 2020 Barcelona, Spain, April 2020
- Graduate Aptitude Test in Engineering (GATE) scholarship- Funded by Ministry of Human Resource Development (MHRD), India

REFERENCES

Available on request