

Tarun Sharma

Room 203, Wong Foo Yuan building, The Chinese University of Hong Kong

E: tarunsharma@cuhk.edu.hk

in: <https://www.linkedin.com/in/drtarunsharma>

sc: <https://scholar.google.com/citations?hl=en&user=3t96ziQAAAAJ>

Sep 2020

Employment History

July 2019 onwards **Postdoctoral Fellow**, Hong Kong Institute of Asia-Pacific Studies, The Chinese University of Hong Kong
Jan - July, 2019 **Assistant Professor**, Institute of Rural Management, Anand, Gujrat, India
2017 -2018 **Postdoctoral Fellow**, Energy Policy and Modelling Group, MaREI, University College Cork, Ireland
Sep - Dec, 2016 **Energy Consultant**, Climate Connect, Sep-Dec, 2016
May - Dec, 2016 **Research Associate**, Department of Management Studies, Indian Institute of Science (IISc).

Visiting Positions

2019 Indian Institute of Technology, Kanpur, Energy Analytics Lab (Visiting Researcher, 1 Week)

Academic qualification

PhD title: Modelling and Benchmarking Sustainability Transition of National Electricity System: A case study of India. Guide: Dr. P Balachandra, IISc. May, 2016. <http://etd.iisc.ac.in/handle/2005/3200>

MS: Engineering, Indian Institute of Science.

B Tech: Mechanical Engineering, National Institute of Technology, Hamirpur.

Professional training:

Sl. No.	Training program	Agency	Year
1	Smart grid technologies	Dept. of Electrical Eng, IIT Kanpur	9-13 May, 2019
2	IEA-ETSAP TIMES Training, ETH Zurich	International Energy Agency, Energy Technology Systems Analysis Program	13-15 Dec 2018
3	Indo German Centre for Sustainability Summer School, TU Berlin	Indo German Centre for Sustainability	09-18 July 2016
4	Toyohashi tech Indian Students Invitation Program, Japan	Japan Science and Technology Foundation	13- 20 Dec 2015
5	Youth leader at Delhi sustainable development summit	The Energy and Resource Institute (teri)	2015
6	Summer school on advancing energy modelling, 2013, Trieste, Italy	International Atomic Energy Agency and International Centre for Theoretical Physics	7-11 October 2013
7	Lanco foundation merit scholarship	Lanco foundation	2011
8	WISE fellow: Internship, OVGU Germany	German Academic Exchange (DAAD)	May-July, 2010

Projects/Technical reports

1. Panos E, Lehtila A, Deane P, Sharma Tarun (2019) . Enhancing the flexibility in TIMES: Introducing Ancillary Services Markets. Energy Technology and Systems Analysis Program, International Energy Agency. <https://iea-etsap.org/projects/TIMES-BS-Documentation.pdf>

2. Giannakidis G, Lehtila A, Sharma Tarun, Balyk O, Gargiulo M (2018). TIMES Migration Feasibility Study. Energy Technology and Systems Analysis Program, International Energy Agency. <https://iea-etsap.org/index.php/etsap-projects>
3. E Panose, Tarun Sharma, J Glynn, T Kober, P Deane (2017). Enhancing and preparing TIMES for high performance computing. Energy Technology Systems Analysis Program, International Energy Agency. <https://iea-etsap.org/index.php/etsap-projects>
4. Sharma Tarun (2016). MILP for optimal response of a coal generator to the electricity market. Climate Connect. Consultancy assignment.

Publications:

Journal paper

1. Sharma Tarun, Gallachóir B O, Rogan F, “A new hybrid approach for evaluating technology risks and opportunities in the energy transition in Ireland”, *Environmental Innovation and Societal Transitions*, Vol. 35, 2020, pp 429-444 <https://doi.org/10.1016/j.eist.2020.01.012> .
2. Sharma Tarun, Glynn J, Panos E, Deane P, Gargiulo M, Rogan F, Gallachoir B O, “High performance computing for energy system optimization models: Enhancing the energy policy tool kit”, *Energy Policy*, Vol . 128, 2019, pp 66-74 <https://doi.org/10.1016/j.enpol.2018.12.055> .
3. Sharma Tarun and Balachandra, P., “Model based approach for planning dynamic integration of renewable energy in a transitioning electricity system”, *International Journal of Electrical Power and Energy Systems*, Vol 105, 2019, pp 642-659 <https://doi.org/10.1016/j.ijepes.2018.09.007> .
4. Sharma Tarun and Balachandra, P., “Will the integration of renewable energy enable sustainable transition of Indian electricity system?” *Energy Strategy Reviews*, Vol. 21, 2018, pp 137-148 <https://doi.org/10.1016/j.esr.2018.06.002> .
5. Sharma Tarun and Balachandra P., “Benchmarking Sustainability of Indian Electricity system: An Indicator approach”, *Applied Energy*, Vol. 142, 2015, pp 206-220 <http://dx.doi.org/10.1016/j.apenergy.2014.12.037> .

Submitted paper

6. Sharma Tarun and Xu Y, “Expedited Energy Transition toward Renewables by COVID-19 in India”, *Renewable and Sustainable Energy Reviews*, 2020.
7. Fadiran G, Sharma Tarun, Rogan F, Gallachoir B O, “Exploring a case transition to low carbon fuel: scenarios for natural gas vehicles in Irish road freight”, *Case Studies on Transport Policy*, 2020.

Working Paper

8. Sharma Tarun and Xu Y, “Cost Effective Co-Mitigation Of CO2 And SO2 In India’s Electric Sector”, 2020.

Chapters/Contributions in Edited Books

9. Sharma, Tarun and Balachandra, P., “Mainstreaming Renewable Energy in Indian electricity system: Sustainability and Policy Imperatives”, Chapter 6 in “Advances in Solar Energy Science and Engineering” (Ed.: H. P. Garg, S. K. Singh and T. C. Kandpal), Today & Tomorrow’s Printers and Publishers, New Delhi, Vol. 4 (2017), ISBN 81-7019-574-4, pp 229-281.
10. Sharma, Tarun and Balachandra, P., “Modelling Technology Pathways for Electricity System in Transition”, Chapter 3 in “Analytics in Operations/Supply Chain Management” (Ed.: Mathirajan, M., Rajendran, C., Sadagopan, S., Ravindran, A. and Balasubramanian, P.), IK International Publishing House Pvt. Ltd, New Delhi, 2016, ISBN 978-93-84588-94-6, pp42 -61.

Invited/Keynote talks

11. Epistemology of Energy System Optimization, IEEE, PES, Computing and Analytical Methods Subcommittee, Jun, 2020.

Conference papers

12. G Fadiran, Tarun Sharma, F Rogan, B O’Gallachoir (2018). On the path to a low carbon economy: Modelling the transition to natural gas vehicles in road freight. International Energy Workshop 2018, 19-21 Jun 2018, Chalmers University, Gothenburg, Sweden.
13. A. Lehtilla, Tarun Sharma, O. Balyk, G. Giannakidis (2018). Migrating TIMES to another modelling language - approaches, issues and problems. International Energy Agency –ETSAP Workshop, 17-18 Jun 2018, Chalmers University, Gothenburg, Sweden.
14. Tarun Sharma, F Rogan, B O’Gallachoir (2018). A new hybrid approach for MCA assessment of technology opportunities in the energy transition. 7th International Symposium and 29th National Conference on Operational Research, Technical University of Crete, 14-16 Jun, Greece.
15. Tarun Sharma, P. Balachandra (2018). Renewable Energy Transition in Indian electricity system: Sustainability and Policy Imperatives. The IAFOR International Conference on Sustainability, Energy & the Environment – Hawaii 2018, 04-06 Jun 2018, The Hawaii Convention Center, Honolulu, Hawaii, USA.
16. Tarun Sharma, Evangelos Panose (2017). Enhancing and preparing TIMES for High Performance Computing. International Energy Agency –ETSAP Workshop, ETH Zurich, 11-12 Dec, Switzerland.
17. Tarun Sharma, F Rogan, B O’Gallachoir (2017). Characterize technology resilience and technology opportunities in transitioning energy systems: A new rank trajectory methodology. International Energy Agency –ETSAP Workshop, University of Maryland, 10-11 Jul, USA.
18. Tarun Sharma, P Balachandra (2015). Electricity futures for India: Can renewables deliver?. International symposium in honor of Dr Ravi Ravindran. Indian Institute of Science (IISc), 12-13 Mar, Bangalore, India. Best paper award in Operations Management category.
19. Tarun Sharma, P. Balachandra (2014). Electricity System Sustainability Transitions: An Integrated Methodology. 2014 IEEE International Conference on Industrial Engineering and Engineering Management, 09-12 Dec, Selangor-Malaysia, pp: 637-641. [10.1109/IEEM.2014.7058716](https://doi.org/10.1109/IEEM.2014.7058716).
20. Tarun Sharma, P. Balachandra (2014). Sustainability assessment of national electricity systems: A case study of India. International society for ecological economics (ISEE) 2014 conference: Energy and technology transitions, wellbeing and equity within planetary boundaries, 13-15 Aug, Reykjavik-Iceland, funded by ISEE.
21. Tarun Sharma, P. Balachandra (2013). Modeling energy technology supply chain interventions for a sustainable national energy system. Discussion paper, Advancing energy modelling workshop, 7-11 Oct 2013, jointly organized by International Atomic Energy Agency (IAEA) and International Centre for Theoretical Physics (ICTP) at ICTP, Trieste-Italy, Funded by ICTP.

Technical Skills & Interest:

Mathematical Programming: C++, R, MATLAB, Julia-JuMP, Mathprog.

Energy system models: TIMES, VEDA-FE & BE.

Reviewer for: Applied Energy, Energy Policy, Journal of Environmental Management, International Journal of Sustainable Energy, Environmental Innovation and Societal Transitions.