

THE CHINESE UNIVERSITY OF HONG KONG
DEPARTMENT OF GEOGRAPHY AND RESOURCE MANAGEMENT
SEMINAR



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Perspectives on Epistemology of Energy System Optimization

ABSTRACT

The global energy system is in transition. The transition drivers are a mix of climate change and other national priorities. Energy system modelling is a major epistemological pillar for meeting stakeholder knowledge requirements which can range from assessment of proposals for multi-decadal time horizon e.g., energy system transition to zero/low emission state, to strategic bidding decisions on the electricity spot market for every 15-minute time block. The regional/national energy systems are at different states in terms of their composition and operating regimes, and, also in terms of their transition ambitions and the pathways they might undertake. In this presentation, I will share my understanding and engagement with the Energy System Optimization Modelling research themes which include: risk-return characterization of technology opportunities for Ireland, migration of a popular energy system model to an open-source platform and the use of high-performance computing. This category of the energy system modelling covers the entire energy system and usually spans multiple decades and sets the broad boundaries for energy subsectors, e.g., electricity, transport etc. Following this, I will cover my experience and engagement with electricity system modelling including, spot markets, dispatch models (ongoing work), and generation expansion models (done in the past). Throughout the presentation, I will attempt to get across my understanding of what questions arise in energy transition and how the energy system modelling continuum helps us grapple with them.

LANGUAGE

English

DATE

24 Sep 2020 (Thu)

TIME

4:30 – 6:00 pm

ZOOM MEETING

ID: 973 6037 5790

<https://cuhk.zoom.us/j/97360375790>

(no password required)

ABOUT THE SPEAKER

Tarun's research focuses on the development and maintenance of a suite of analytical models such as optimization and agent-based models, optimizing their workflow including stakeholder engagement and their application to answer questions related to the energy transition. He is a visiting researcher at the Energy Analytics Lab, Department of Industrial and Management Engineering, IIT Kanpur. He has actively engaged with the Energy Technology System Analysis Program (ETSAP) of the International Energy Agency (IEA) and successfully secured funding and delivered projects on cross-platform implementation, high-performance computing, and open-sourcing TIMES (The Integrated MARKAL-EFOM system). He has previously served as Assistant Professor at the Institute of Rural Management, Anand, and has been a postdoctoral fellow at the Energy Policy and Modelling Group of University College Cork, Ireland. He has published on benchmarking and modelling of electricity system sustainability transitions, and assessment of technological opportunities in the energy transition. He is a German Academic Exchange-WISE fellow.

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