



THE WSU-PNNL ADVANCED GRID INSTITUTE

## TRANSACTIVE ENERGY: INCENTIVE-BASED COORDINATION STRATEGIES FOR ENABLING DERs TO PROVIDE GRID SERVICES

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**MONISH MUKHERJEE**

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**Tuesday, March 28, 2023 • 11:00 AM – Noon (PT) • TEAMS ONLY**

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### ABSTRACT

The electricity landscape is undergoing significant changes due to the proliferation of distributed energy resources, and increasingly smart consumers (prosumers), proactively managing their local consumption and generation - through intelligent devices like smart thermostats, solar panels, and batteries energy storage systems. Recent advances in information & communication technologies, and smart metering, provides strategic opportunities for prosumers to reform their conventional energy practices towards more consumer-centric economies. From an operational perspective, managing power distribution networks are becoming more difficult with such active grid-edge systems providing limited to no visibility or control. Transactive energy (TE) has been emerging as a key enabler towards effectively and efficiently integrating prosumers into competitive electricity markets. In this context, this seminar will discuss some transactive coordination strategies for enabling consumers to actively participate in local as well as system-wide management tasks along with some modelling and simulation capabilities towards analyzing the system-level impacts of implementing such TE mechanisms. The seminar will also share my experience in being a part of the [PNNL-WSU Distinguished Graduate Research Program](#) and how the program presents a unique opportunity to leverage PNNL's state-of-the-art research infrastructure and facilitates graduate students in developing the skillsets for a career in research.

### BIO

Dr. Monish Mukherjee (M' 21) received his B.E. degree from the Department of Electrical Engineering, Jadavpur University, Kolkata, India in 2016 and his Ph.D. degree in Electrical and Computer Engineering from Washington State University, Pullman, WA, in 2021. He is currently a power systems research engineer at Pacific Northwest National Laboratory (PNNL). His current research interests include transactive energy systems, distribution system modelling and simulation, grid resiliency and condition monitoring of high voltage power equipment.

