

- Topic: Unlocking Power System Flexibility: Innovative Wholesale Market Design and Business Models**
- Date: Friday, 2 November 2018**
- Time: 8:30 am to 12:00 noon**
- Venue: Sands Expo and Convention Centre, Marina Bay Sands Singapore**
- Speakers: Ms Jennifer RIESZ, Australian Energy Market Operator (AEMO)**
Dr Dae Kyeong KIM, Asian Development Bank
Mr Nicolas PAYEN, Positive Energy Ltd
Mr Martin LIM, Electrify Asia
Mr Itamar ORLANDI, Bloomberg NEF
Dr Aaron PRAKTIKNJO, E.ON Energy Reseach Center at RWTH Aachen University, Germany
- Moderator: Dr LIU Yang, Energy Studies institute**

Abstract

Renewable energy integration raises new challenges for grid planning and operations. Enhancing power system flexibility is key to coping with large disturbances resulting from renewable energy integration. Flexibility assets such as dispatchable thermal generation, demand-side resources and electricity storage must be considered to ensure regulation of supply. As the roles of market players are changing with the introduction of new technologies and flexibility assets, the wholesale electricity market design needs to be reviewed.

An innovative market design is critical to provide proper valuation of flexible services and sufficient reserve capacity, ensuring system security. The market design/mechanisms introduced should be able to provide answers to the following questions to ensure the electricity market remains competitive:

- How will thermal plants be compensated for additional costs incurred due to increased cycling (i.e ramping up and down of thermal plants)?
- To what extent can the aggregator of distributed energy resources provide flexible services?
- With the introduction of intermittent energy resources, will price signals be sufficiently cost-reflective to encourage demand side participation?
- Which business models will enable new and existing entrants to have revenue security, with the changing market conditions?
- Will there be sufficient investment signals to encourage new entrants in the energy market?

- Is there a need for additional incentives/policy reforms for renewable energy providers to recover their fixed cost?
- Will the volatility of the energy markets discourage voluntary contracts which reflect the different risk preferences of market players?

This roundtable will bring together global industry experts and business leaders to access opportunities to unlock the system-wide flexibility potential through innovative market design, and investigate new business models to encourage long-term investments in modern power systems.

Programme Details

08:30 to 08:55	Registration
09:00 to 09:05	Opening Remarks Dr Liu Yang Senior Research Fellow, Energy Studies Institute
Session 1	Integrating Power Plants and Flexible Assets
09:05 to 09:20	<u>Presentation</u> Integration of Distributed Energy Resources in Australia Ms Jennifer Riesz Principal – Operational Analysis & Engineering Australian Energy Market Operator (AEMO)
09:20 to 09:35	<u>Presentation</u> Demand Response-As the Tool of Flexibility Dr Dae Kyeong Kim Senior Energy Specialist, Asian Development Bank
09:35 to 09:50	<u>Presentation</u> Block Chain for the Electricity Market Mr Nicolas Payen CEO and Co-founder, Positive Energy Ltd.
09:50 to 10:15	Panel Discussion
10:15 to 10:45	Tea Break and Networking
Session 2	Electricity Market Redesign
10:45 to 11:00	<u>Presentation</u> Time of Use Pricing and Smart Contracts Mr Martin Lim Co-founder & Chief Operations Officer, Electrify Asia
11:00 to 11:15	<u>Presentation</u> Global Experiences with Markets and Technologies for Grid Flexibility Mr Itamar Orlandi Head of Frontier Power research, Bloomberg NEF

11:15 to 11:30 Presentation
Support of Renewable Electricity and Investments in Conventional Generation - Experiences from the German 'Energiewende'
Dr Aaron Praktiknjo
Assistant Professor, E.ON Energy Research Center at RWTH Aachen University, Germany

11:30 to 11:55 Panel Discussion

11:55 to 12:00 **Closing Remarks**
Dr Liu Yang
Senior Research Fellow, Energy Studies Institute