

The Energy Market Transformation

March 19-20, 2015

Meralco Center, Ortigas, Pasig City

This 2-day learning event/executive briefing will provide:

- Appreciation of how the energy market evolved from the early stages of retail competition to the current mature markets in Australia, New Zealand and other markets
- An understanding of similarities and differences versus the Philippine market
- Insights and foresights of the market behavior including the regulators' moves for our strategic positioning and policy advocacy in the local market.

Course Outline: DAY 1

Physical characteristics of the Australian & New Zealand electricity industries:

- National geography and primary energy resources
- Scale & key features of the electricity industries
- Technical and commercial performance indicators (capacity, demand, price, reliability)

Evolution of the Australian electricity industry:

- Early development and evolution of state-owned electricity industries
- Triggers for electricity industry restructuring
- Implementation of the restructuring process, including comparison of design choices for the National Electricity Market (NEM) and the Western Australian Market (WAM)

Evolution of the New Zealand electricity industry:

- Early development and evolution of national electricity industry
- Triggers for electricity industry restructuring
- Implementation of the restructuring process, including comparison of design choices
- Present situation & current issues, including smart grids, distributed generation & storage

Comparison of key features of the Australian and New Zealand electricity industries:

- Wholesale electricity market design: energy, ancillary services, spot & derivative markets, market regions versus nodal pricing, WAM capacity market
- Retail electricity market design
- Network services
- Governance & regulation
- Implications of smart grids, distributed generation & energy storage



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Course Outline: DAY 2

Australian NEM wholesale & retail electricity market & network service arrangements:

- Description of wholesale ancillary service, spot energy & derivative markets
- Performance of wholesale ancillary service, spot energy & derivative markets
- Structure and regulation of network services
- Retail market arrangements & market outcomes
- Important current issues:
 - Integration of non-storable wind & solar energy, reversible energy storage
 - Active end-users, smart grids & growing distribution-level complexity
 - Declining demand & industry cash flows
 - Climate change policy

Design of the New Zealand wholesale & retail electricity market arrangements

- Description of wholesale ancillary service, spot energy & derivative markets
- Performance of wholesale ancillary service, spot energy & derivative markets
- Structure and regulation of network services
- Retail market arrangements & market outcomes
- Important current issues:
 - Integration of non-storable wind & solar energy, reversible energy storage
 - Active end-users, smart grids & growing distribution-level complexity
 - Climate change policy

Comparison of Australian & New Zealand industry arrangements

- Wholesale market design and performance, including nodal versus regional pricing
- Retail market design and performance
- Network service regulation
- Integration of non-storable wind & solar energy, reversible energy storage
- Active end-users, smart grids & growing distribution-level complexity
- Declining demand & industry cash flows
- Climate change policy

Implications for the Philippine Electric Industry



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YOUR GLOBAL EXPERTS



Dr. Hugh Outhred

Hugh Outhred is Managing Director of Ipen Pty Ltd, a boutique company established in 1998 to provide advisory and educational services in the interdisciplinary area of energy, society and the environment.

Hugh holds the degrees of BSc, BE (First Class Honours) in Electrical Engineering and PhD in Electrical Engineering from the University of Sydney. He is a Fellow of the Australian Institute of Energy and a Life Member of the Institute of Electrical and Electronic Engineers.

After a 35-year career at the University of New South Wales, Hugh retired in September 2007 as Presiding Director, Centre for Energy and Environmental Markets and Head, Electrical Energy Research Group, School of Electrical Engineering and Telecommunications.

Hugh has been a Fulbright Senior Fellow at the University of California Berkeley, a Lead Author for the IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation, a Board Member of the Australian CRC for Renewable Energy, an Associate Director of UNSW's Centre for Photovoltaic Devices and Systems, a Member of CSIRO's Energy Flagship Advisory Committee, a Member of the National Electricity

Tribunal and a Member of the NSW Licence Compliance Advisory Board. He has provided advice and taught over 100 short courses on competitive electricity industry design and renewable energy integration.



Dr. Stuart Russell Thorncraft

Stuart is a Managing Consultant at Intelligent Energy Systems Pty Ltd (IES), an Australian-based energy consulting firm, where he is responsible for leading projects mainly based in Asia that involve the provision of advice and consulting services to governments, energy companies and financial institutions on the energy markets of Australia, Singapore, Vietnam, Philippines, South Korea, Myanmar and others in South-east Asia. He has over 15 years of experience in providing advice on energy policy, modelling and projecting energy markets, advice on electricity market IT systems, technical aspects of the design and operation of electricity markets.

He has managed and made contributions to numerous projects within the Asia-Pacific region, such as the development of an integrated energy master plan for the Government of Myanmar, technical support and assistance to the Philippines Electricity Market Corporation on matters related to electricity market design, and technical assistance to the Electricity Regulatory Authority of Vietnam on the reform of their electricity sector.

Stuart holds a Ph.D. in Electrical Engineering from the University of New South Wales. Prior to becoming a

Managing Consultant, Stuart spent six-years undertaking research for the Centre for Energy and Environmental Markets (CEEM) at the University of New South Wales where he focused on the technical design and operation of electricity markets. This gave rise to several academic publications and research presentations at universities and conferences in Europe and the USA. Earlier in his career, Stuart was a control systems software engineer at Honeywell, where he gained practical experience in the design and implementation of supervisory control and data acquisition (SCADA) system, real-time control, software engineering and database design.

Program Investment: P45,000 net per person

Special Rate for the 2 courses (Future Proofing the Electricity Grid

and The Energy Market Transformation): P85,000 net per person

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