
POWER MARKET & POWER TRADE THROUGH POWER EXCHANGE PLATFORM

September 17 & 18, 2019 | Thimphu, Bhutan



HIGHLIGHTS OF THE WORKSHOP

Integrated Research and Action for Development (IRADe), under the USAID SARI/EI program, organized a two-day workshop on Power Market and Power Trade through Power Exchange Platform for stakeholders in Bhutan. About 40 senior officials from the Ministry of Economic Affairs, Bhutan Electricity Authority, Druk Green Power Corporation, Bhutan Power Corporation and Bhutan Power System Operator, attended the Workshop. This included one of the five eminent Members of the National Council of Bhutan, Upper House of Bhutan Parliament, Hon'ble Karma Tshering.

The Director, Department of Hydropower and Power Systems, Ministry of Economic Affairs, Mr. Karma P Dorji graced the workshop, stating that “At present, in view of the evolving scenario of international regional south Asia grid integration and to keep up with the evolving power trade, market development/power exchange and trilateral trade scenario, it is important for Bhutan to respond on real-time basis with accurate forecasting, scheduling and dispatch. SARI/EI’s continuous engagement with our power sector in building capacity/information sharing is appreciated.”



Day 1 of the workshop witnessed insightful discussions on evolution of power trading in India and the importance of cross-border electricity trade in the South Asia region, the role and technical aspects of power exchanges, as well as the role of Independent System Operators.

In his opening remarks, **Mr. Pankaj Batra**, Project Director, SARI/EI/IRADe, apprised audience on the Evolution of Power trading in India and role of its two Power Exchanges - Indian Energy Exchange and Power Exchange of India Limited. He pointed out that diversity of generating resources in the South Asian countries is an advantage that needs to be exploited. Mr. Batra spoke on the Power Market Regulations, including the Principles of Market and Market Design, prudential norms for establishment and risk management of Power Exchange.

Speaking on the key milestones of cross border electricity trade (CBET) in the South Asia region, **Mr. Rajiv Ratna Panda**, Technical Head, SARI/EI/IRADe, highlighted the regulatory and policy measures taken to boost CBET in the region. He informed audience about the various proposals by the Ministry of Power, Government of India, for the power market.

The various aspects of different power exchange models were highlighted by **Mr. Nitin Sabikhi**, AVP- Business Development, Indian Energy Exchange. He explained about timing sequence in terms of scheduling - Day

Ahead scheduling markets, contingency markets and Real time intra-day scheduling markets.

In order to address the critical issues relating to Regional Grid Integration, **Mr. V. K. Agrawal**, Technical Director, SARI/EI/IRADe, specified the roles of Independent System Operator (ISO) versus Transmission System Operator (TSO). He covered the different avenues of transmission related frameworks, global case studies on TSO/ ISO model, the factors associated with each option, as well as the scenarios in India and Bhutan.

Mr. Sanjeev Mehra, Managing Director, Tata Power Trading Company Ltd. (TPTCL), talked about the evolution of Power Trading and certain challenges, the revised guidelines of Government of India dated December 2018, the new Regulations of CERC for cross border trade in electricity, the experience of their Dagachu pure run-of-river plant in Bhutan, and the journey of TPTCL in trying to get clearance from the Ministry of External Affairs, Government of India, the Ministry of Power, CEA, CERC, to be able to sell this power to various States of India.

Day 2 focused on the global power systems and market integration, with focus on the Bhutan's power sector scenario, the various opportunities and challenges, and the role of Bhutan Power System Operator to coordinate and regulate power system operation.



Mr. Rajiv Ratna Panda, Technical Head, SARI/EI/IRADe, discussed the evolution of power systems and market integration across the globe. He apprised audience on the international models of trilateral and multilateral power trade. Case study of Lao PDR, Thailand, Malaysia, Singapore Power Integration Project, was showcased as apt example of power cooperation in South Asia.

Mr. V. K. Agrawal, Technical Director, SARI/EI/IRADe, described the scenario of export of power from Bhutan over last three years. He explained about the Point of Connection Tariff Mechanism for determining transmission charge sharing, which ensures certainty in transmission rates over a period of three months. This mechanism is market friendly and promotes competitive bidding, and facilitates equitable sharing among transmission system users, based on usage.

Mr. Nitin Sabikhi, AVP- Business Development, IEX, explained the bid matching mechanism in the day ahead market, the share of trade in the various market products of IEX, the method of market splitting in case of congestion, power

exchange prices over the years and new power exchange products envisaged. He explained the Clearing and Settlement process that acts as an internal clearing house to help with receivables and payables of each trade on the Power Exchange.

Mr. Ugyen Chopel, from the Department of Hydropower & Power System, Bhutan, shared an overview of the power sector in Bhutan, including the institutional set up, the nation's hydropower potential and development status, transmission line and associated systems. He talked about the current energy trade scenario of Bhutan, and the various opportunities and challenges.

Representative from Bhutan Power System Operator (BPSO) talked about the history and the initial formation of BPSO to coordinate and regulate power system operation in the country. He explained the role of BPSO as per Grid code, including power system supply coordination, generation dispatching, transmission outage coordination, import-export monitoring.

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