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PTC INDIA LTD. SHOWCASE THEIR EXPERIENCES IN POWER TRADING TO NEPAL, AFGHANISTAN, BANGLADESH, AND BHUTAN (MODULE 3)

TRAINING FOR SOUTH ASIA REGIONAL INITIATIVE FOR ENERGY INTEGRATION (SARI/EI)

Delhi, India – Through funding from USAID’s South Asia Regional Initiative for Energy Integration (SARI/EI) program, 15 energy executives from Afghanistan, Bangladesh, Bhutan, and Nepal participated in the final of three modules on the design, management and operation of a power trading entity. The training was organized by the U.S. Energy Association and conducted by PTC India Ltd. (India’s largest power trader) at their offices in New Delhi, India. The program was tailored for the Nepalese, to provide them with the institutional and human capacity to establish a power trading entity in Nepal, as a next step to expand cross-border electricity cooperation between governmental, public and private enterprises. Cross-border electricity trade and collaboration has the potential to provide much needed economic and environmental benefits and improved energy security to all the countries, and ultimately the region.



**Front Row: (L-R) Shyam Kishor Yadav, Ananda Chaudhary, Prabal Adhikari, Harish Saran, Sarah Blanford, Denkar, Sayed Arif Ahmadzada, Subarna Sapkota
Top Row: (L-R) Aman Rajbhandari, Krishna Bahadur Khadka, Sanjaya Dhungel, Hiranmay De, Ravi Shankar, Naveen Godiyal, Rahul Pandey, Milana Prajapati,
H.M. Imran Hasan, Madhu Prasad Bhetuwal, Binod Lohani, Mohd. Faisal Hasan, Apar Neupane**

The third module included key topics and was structured in a way that the group was given direct exposure in the institutional, staffing and management issues critical to the formation of a power trading organization. Over the course of five days, the participants were given virtual control room operation experience in the various areas of power trading, viz. scheduling, billing, energy accounting and settlement, and bidding on power exchanges. Discussions and presentations focused on:

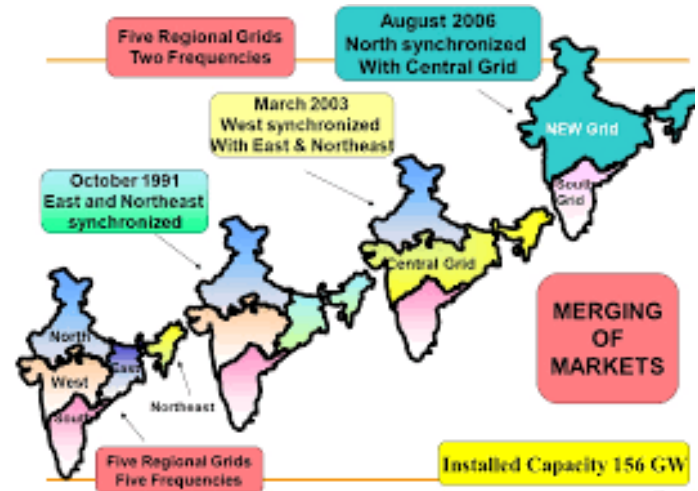


Above: Delegates visit the PTC control room where they were taken through virtual bilateral open access state dispatch scheduling & concurrence.

- (a) Power trade operations
- (b) Power exchange products
- (c) Functions of the commercial operations department
- (d) Procedures for short-term bilateral transactions
- (e) Capacity and energy charge calculation
- (f) Deviation settlement mechanism
- (g) Solar policy in India
- (h) Open access regime in India

As part of the training, PTC led a visit to the Northern Regional Load Despatch Centre (NRLDC) – the largest of the regional dispatch centers in geography and constituents. The NRLDC is the apex body to ensure integrated operation of the power system in the Northern Region in India. Its main responsibilities are:

- To ensure the integrated operation of the power system in the Northern Region
- Monitoring of system parameters and system security
- Daily scheduling and operational planning
- Facilitating bilateral and inter-regional exchanges of power
- Analysis of tripping/disturbances and facilitating immediate remedial measures
- System studies, planning and contingency analysis
- Augmentation of telemetry, computing and communication facilities
- Computation of energy dispatch and withdrawal values using SEMs



Presentations were made by the following PTC India Ltd. staff:

- Mr. Harish Saran, Executive Director, Marketing
- Mr. Sh. Hiranmay De, Executive Vice President (Operations)
- Ms. Bibhuti Prakash, Manager (Operations)
- Mr. Harjit Singh Ghura, Vice President (Commercial)
- Mr. Bhaskar Soren, Manager (Operations)
- Mr. Sandeep Vohra, Asst. Vice President (Operations)
- Ms. Lenny Mathew, Jr. Manager (Operations)

- Mr. Naveen Godiyal, Manager (Operations)
- Mr. Deepak Pandey, Manager (Operations)



Discussions and interactions in the classroom

Background:

Although South Asia has been one of the fastest growing regions in the world, with an average annual GDP growth rate of 6%, its energy sector is beset by shortages and poor service quality. In order to meet the rising energy demands, the region's governments have had to increase their reliance on oil imports, with the result that all the countries without exception rely on these supplies to meet more than a quarter of their commercial energy needs. Despite tremendous benefits to be derived out of regional cooperation, the region lags significantly behind most, if not all, regions of the world in energy trade and regional integration. Limited cross-border transmission interconnections and cross-border trading transactions are taking place only between India and Bhutan, India and Bangladesh and to a lesser extent between India and Nepal. Despite the complementarities of the energy resource base of Nepal and India, the two countries have barely begun to exploit the potential opportunities for cross-border electricity trade (CBET). (Source: USAID)

However, there has been significant progress between the South Asian countries on moving towards expanded regional energy cooperation. In 2014, the South Asian Association for Regional Cooperation (SAARC) signed a landmark Framework Agreement on Energy Cooperation, aimed at easier distribution and transmission of electricity and allowing public and private entities of member states to buy and sell electricity.

On a bilateral level – India and Nepal are making substantial strides on cross-border exchange. Following Indian Prime Minister Modi's August 2014 visit to Nepal, a Power Trading Agreement (PTA) between the two countries was signed. The PTA will enable cooperation in the power sector, including developing transmission interconnections, grid connectivity, power exchange and trading through the governmental, public and private enterprises of the two countries.

Since 2000, USAID's South Asia Regional Initiative for Energy (SARI/Energy) program focused on advocating energy cooperation in South Asia. The program is now in its next phase of advancing regional energy integration and cross-border energy trade in eight South Asian countries (Afghanistan, Bangladesh, Bhutan, India, Pakistan, Nepal, Sri Lanka & Maldives). This new phase titled South Asia Regional Initiative for Energy Integration (SARI/EI) is designed to build upon SARI/Energy's successful initiatives of the past to move South Asian countries towards increased regional energy security.

While India has been conducting cross-border electricity exchange for decades, the expanded Nepal-India interconnection will represent a substantial step for Nepal. To assist, USAID SARI/EI assigned the United States Energy Association (USEA) with the task of implementing a program focused on capacity building

for the Nepalese. This training is the first in a series of capacity building activities to lend support to Nepal, as well as to the other SARI/EI countries.

Results & Next Steps

At the conclusion of the training, the participants completed an assessment that was designed to measure their understanding on the topics covered, the relevance of the



Closing ceremony of module 3 with key leadership from PTC India Ltd., the National Power Training Institute and USAID/ India.

training program and the overall rating of the training. The participants reported on their understanding on the various topics, both before and after the activity. The survey analysis showed great improvement of knowledge from the activity. The greatest increase in their understanding was observed in the subjects of:

- Solar policy
- Power exchange products
- Functional/operation aspects of power exchange
- Deviation settlement mechanism

The participants also listed the top four topics, which according to them, were the most relevant. The topics judged as the most relevant were:

- Open access regime in India (related transmission charges)
- Solar policy
- Need for regulatory commissions
- Operation of a power trading entity

USEA plans to conduct a similar round of training in the coming year again for Afghanistan, Bangladesh, Bhutan, Nepal, and Pakistan.

Training Participants

Afghanistan

- Mr. Sayed Arif Ahmadzada, Energy and Control Manager, Da Afghanistan Breshna Sherkat (DABS), Afghanistan

Bangladesh

- H.M. Imran Hassan, Assistant Engineer, IPP Cell-1, Bangladesh Power Development Board
- Muhammad Faisal Hasan, Assistant Engineer, IPP Cell-1, Bangladesh Power Development Board

Bhutan

- Mr. Denkar, Engineer, Transmission & Power System Division, Department of Hydropower & Power Systems, Ministry of Economic Affairs

Nepal

- Mr. Sanjaya Dhungel, Senior Divisional Engineer (SDE), Office of the Investment Board
- Mr. Madhu Prasad Bhetuwal, Deputy Director General, Department of Electricity Development
- Mr. Shyam Kishor Yadav, Senior Divisional Engineer (SDE), Ministry of Energy

- Mr. Ananda Chaudhary, Senior Manager, Naulo Nepal Hydroelectric Pvt. Ltd.
- Mr. Apar Neupane, Business Manager, Nepal Liaison Office, Statkraft Holding Singapore Pte. Ltd.
- Mr. Krishna Bahadur Khadka, Deputy Director of Services, Nepal Electricity Authority
- Mr. Prabal Adhikari, Chief of Power Purchase, Power Trade Department, Nepal Electricity Authority
- Mr. Subarna Sapkota, Assistant Manager, Power Trade Department, Nepal Electricity Authority
- Mr. Binod Lohani, Assistant Manager, Load Despatch, Power System Operations, Nepal Electricity Authority
- Mr. Aman Rajbhandari, Assistant Manager, System Planning Department, Nepal Electricity Authority
- Ms. Milana Prajapati, Engineer, Corporate, Planning & Monitoring Department, Nepal Electricity Authority

For more information about the South Asia Regional Initiative for Energy Integration, please contact Ms. Sarah Blanford at sblanford@usea.org.