



South Asia Regional Initiative for Energy Integration

Quarterly Update – October to December 2015

ACCOMPLISHMENTS FOR THE QUARTER

4th SARI/EI PROJECT STEERING COMMITTEE MEETING, MUMBAI, INDIA

The 4th Project Steering Committee (PSC) meeting was held in Mumbai, India on December 9, 2016. Members of the PSC from various South Asian countries, along with representatives from USAID and IRADe, attended the meeting.

Dr. Jyoti Parikh, Executive Director, IRADe delivered the welcome address. Mr. Colin Dreizin, Regional Energy Director, USAID/SARI/EI delivered the special address by highlighting the importance of the U.S. Government's key agenda for fostering regional prosperity in South Asia with a critical emphasis on energy security. Dr. Sanjay Sharma, Joint Secretary, Ministry of Energy, Government of Nepal and Chairman of PSC delivered the keynote address. Dr. Sharma presented on the state of Nepal hydropower and the future of power trade in South Asia. Mr. V.K.Kharbanda, Project Director, IRADe gave the vote of thanks.



Photo Credit: IRADe

4th SARI/EI Project Steering Committee meeting, December 9, 2016, Mumbai, India

Mr. Kharbanda presented the progress on the SARI/EI program and a review of activities that took place in 2014 – 2015. He underscored that activities were focused on intensive task force meetings where each of the task forces (TF) worked to address the specific issues concerning cross-border electricity trade (CBET) and achieving the deliverables as defined in the terms of reference of the task forces. He then introduced IRADe's work plan for 2015 – 2016.

Mr. Rajiv Ratna Panda, Sr. Project Manager, IRADe presented on "Regional Regulatory Guidelines and Regional Regulatory Institutional Mechanism" as a part of a TF-1 study, and gave the key findings and status update of the

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“Study on Harmonization of Grid Codes, Operating Procedures and Standards to Facilitate/Promote Cross Border Electricity Trade in South Asia” as a part of a TF-2 study.

Mr. Gaurav Jain, Research Analyst, IRADe presented the key findings and a status update on “Assessment of the Electricity Trading Potential of South Asian Countries” as a part of a TF-2 study, and “Assessment and Recommendation of Commercial Terms And Conditions for Cross Border Electricity Trade and Suggesting the Model of Power Exchange in South Asia” as a part of a TF-3 study.

Dr. P.K. Dadhich, Deputy Director and Dr. Probal Ghosh, Head Modelling, IRADe presented on the key findings and a status update on “Economic Benefits of the India-Nepal Cross Border Electricity Trade.”

Ms. Reshmi Vasudevan, Program Coordinator, IRADe presented SARI/EI's Consensus Building and Outreach Strategy.

Key Recommendations:

- The PSC members appreciated the key activities undertaken by SARI/EI IRADe during 2014 – 2015 and agreed upon the annual work plan for 2015 – 2016.
- SARI/EI should adopt task force recommendations for an outreach strategy and consensus building on regional regulatory guidelines (RRGs), standard power purchase agreement (PPA) and a transmission service agreement (TSA), regional investment framework, and framework/guidelines on grid codes covering planning, connection, operation, protection and scheduling and dispatch for CBET etc.
- SARI/EI should work on implementation of a regional regulatory institution mechanism such as SAFER.
- SARI/EI should continue working with SAARC and the SAARC Energy Centre. Country stakeholder involvement is necessary for wider dissemination and consensus building.
- The chairperson of the PSC is to be rotated annually. The members unanimously elected Dasho Yeshe Wangdi, Secretary, Ministry of Economic Affairs, Royal Government of Bhutan, as the new chairperson for the 4th year of the program.

VISIT TO SAARC ENERGY CENTRE, LAHORE, PAKISTAN

Mr. Kharbanda and Mr. Panda participated as resource persons in the "SAARC Perspective Workshop on the Past, Present and Future of High Voltage DC (HVDC) Power Transmission" organized by SAARC Energy Centre in collaboration with National Transmission and Dispatch Company Limited held September 30 – October 1, 2015 in Lahore, Pakistan. They delivered a presentation on the “South Asian Power Sector: Investment Prospects, Challenges and Issues and Harmonization of Grid Codes.”

The delegation also met Mr. Muhammad Arshad Chaudhry, Managing Director, National Transmission & Despatch Company (NTDC) Limited, and Mr. Rihan Akhtar, Chief Financial Officer, Central Power Purchasing Agency (CPPA) and requested nominations for SARI/EI Task Forces 2 and 3.

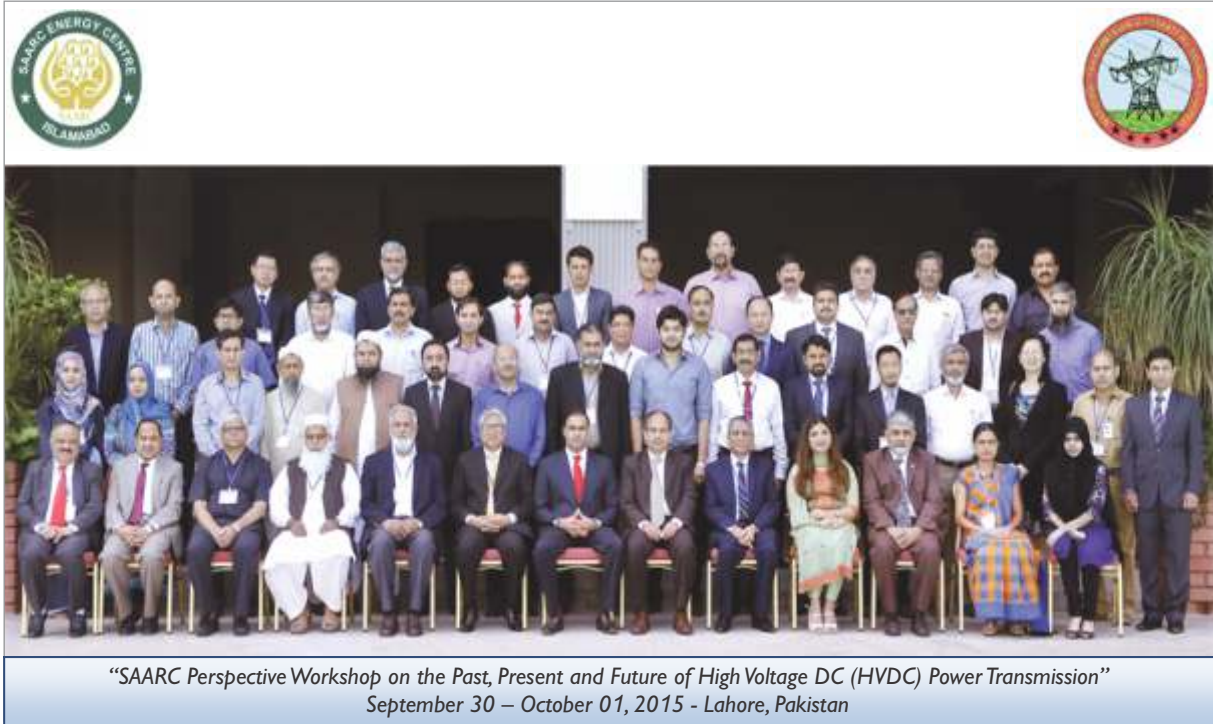


Photo Credit: IRADe

STUDY TOUR TO NORD POOL REGIONAL POWER MARKET

SARI/EI conducted a study tour to the Nord Pool Power Market Oslo (Norway) and Fredericia (Denmark) October 12 – 16, 2015 aimed at exposing the delegates to international power markets. Delegates from Bangladesh, Bhutan, India, Nepal, and Sri Lanka participated in the study tour. The delegation visited the Nord Pool Spot Market (Regional Power Exchange), Statekraft (trader and generator) head office in Oslo, Norway, and the transmission system operator (TSO) of Denmark, Energinet at Fredericia. Speakers from NASDAQ also addressed the delegates.



Photo Credit: IRADe

Study tour to Nord Pool Regional Power Market Oslo, Norway and Fredericia, Denmark - October 12–16, 2015

Status of Demand-Driven Studies:

Task Force 1 Studies:

- a) **Study 1:** TF-1 study on "Review of Policies and Regulations of South Asian Countries (SAC) and Suggested Changes/Amendments in Electricity Laws, Policies and Regulations of SAC and Developed Regional Regulatory Guideline for Promoting Cross-Border Electricity Trade in SAC" has been finalized and regional regulatory guidelines were launched.
- b) **Study 2:** The bids for the 2nd study of TF-1 on "Regional Investment Framework and Policy Guidelines for Promoting Investment in South Asian Power Sector" are under advance stage of award.

Task Force 2 Studies:

- a) **Study 1:** The draft interim findings of the 1st study of TF-2 on "Assessment of the Electricity Trading Potential of South Asian Countries" is under review and finalization.
- b) **Study 2:** The interim findings of the 2nd study of TF-2 on "Harmonization of Grid Codes, Operating Procedures and Standards to Facilitate/Promote Cross-Border Electricity Trade in South Asia" is under review and finalization.

Task Force 3 Studies:

- a) **Study 1:** PricewaterhouseCoopers Pvt. Ltd. has submitted the draft ("as-is") report of the 1st study of TF-3 on "Assessment of Commercial Terms and Conditions for CBET and Suggested Model of Power Exchange in the South Asian Region."
- b) **Study 2:** The terms of reference for the study on "Market Rules and Pilot Market Design" is under finalization.

SARI/EI Analytical Studies

Dr. Pradeep Kumar Dadhich and Dr. Probal Ghosh visited Nepal August 31– September 4, 2015 and met with potential stakeholders and data agencies of Nepal to channel contacts for data gathering in preparation of the social account matrix (SAM) and the energy systems model answer TIMES model of Nepal. Data requirement for both the SAM and Answer TIMES model was shared with various ministries and government representatives. The meetings helped identify the data gaps and establish working relationships with various agencies of Nepal. Presentations on the initial results of Nepal Answer -TIMES and on multipliers showing the economic impact of injection of one unit of electricity in Nepal's power system using the 2007 SAM were made at the 4th PSC meeting held in Mumbai on December 9th.

CAPACITY BUILDING IN POWER TRADING

On November 30 – December 4, 2015, energy executives representing SARI/EI countries participated in the second of three modules on the design, management and operation of a power trading entity, organized by the U.S. Energy Association. The training was conducted jointly by PTC India Ltd. (India's largest power trader) and the National Power Training Institute (NPTI). It was tailored for the Nepalese, to provide them with the institutional and human capacity to establish a power trading entity in Nepal. The activities, which were targeted at Nepal Electricity Authority, Government of Nepal representatives and private sector, also included additional representatives from Afghanistan, Bangladesh, and Bhutan. The same sixteen delegates from Module 1 participated in the Module 2 training. In continuation, the second module of the training was designed as a natural progression from Module 1,

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and was concentrated on the specifics and nuances of the day-to-day functioning of a power trading entity in India.

Over the course of five days, the participants were given detailed insights on the most important activities of a power trading entity, such as:

- (a) Avenues of sale and purchase of power under various regulatory provisions
- (b) Drafting and negotiation of agreements
- (c) Significance of various contractual provisions
- (d) Rationale behind a range of financial and commercial clauses incorporated in an agreement
- (e) Legal and regulatory risks to be considered



Participants included:

1. Mr. Sayed Arif Ahmadzada, Energy and Control Manager, DaAfghanistan Breshna Sherkat (DABS), Afghanistan
2. Mr. H.M. Imran Hassan, Assistant Engineer, IPP Cell-1, Bangladesh Power Development Board
3. Mr. Muhammad Faisal Hasan, Assistant Engineer, IPP Cell-1, Bangladesh Power Development Board
4. Mr. Denkar, Engineer, Transmission & Power System Division, Department of Hydropower & Power Systems, Ministry of Economic Affairs, Bhutan
5. Mr. Sanjaya Dhungel, Senior Divisional Engineer (SDE), Office of the Investment Board, Nepal
6. Mr. Madhu Prasad Bhetuwal, Deputy Director General, Department of Electricity Development, Nepal

7. Mr. Shyam Kishor Yadav, Senior Divisional Engineer (SDE), Ministry of Energy, Nepal
8. Mr. Ananda Chaudhary, Senior Manager, Naulo Nepal Hydroelectric Pvt. Ltd., Nepal
9. Mr. Apar Neupane, Business Manager, Nepal Liaison Office, Statkraft Holding Singapore Pte. Ltd., Nepal
10. Mr. Krishna Bahadur Khadka, Deputy Director of Services, Nepal Electricity Authority
11. Mr. Prabal Adhikari, Chief of Power Purchase, Power Trade Department, Nepal Electricity Authority
12. Mr. Subarna Sapkota, Assistant Manager, Power Trade Department, Nepal Electricity Authority
13. Mr. Binod Lohani, Assistant Manager, Load Despatch, Power System Operations, Nepal Electricity Authority
14. Mr. Aman Rajbhandari, Assistant Manager, System Planning Department, Nepal Electricity Authority
15. Ms. Milana Prajapati, Engineer, Corporate, Planning & Monitoring Department, Nepal Electricity Authority
16. Mr. Ramesh Kumar Ghimire, Deputy Director (Legal), Nepal Electricity Authority

Presentations were provided by the following:

- Mr. T.N. Thakur, Ex. CMD, PTC India Ltd., and Director, Karaat Infrastructure Devp. Pvt. Ltd.
- Mr. A. Mohan Menon, Ex. PTC, and Director, BalSa Consulting

From PTC India Ltd.:

- Mr. Harish Saran, Executive Director, Marketing
- Dr. Rajib K. Mishra, Director, Marketing and BD
- Mr. Rajiv Malhotra, Executive Director and Group CRO
- Mr. Arun Kumar, Director, Finance and CFO
- Mr. Ajit Kumar, Director, Commercial and Operations
- Mr. H.L. Choudhary, Vice President
- Mr. Varun Sethi, Manager
- Mr. Bharat Sharma, Manager
- Mr. Ravi Shankar, Manager

SCOPING MISSION TO SUPPORT BANGLADESH

SARI/EI, including representatives from USAID/India, USAID/Bangladesh, IRADe, and USEA, conducted a scoping mission to Dhaka, Bangladesh, December 1 – 3, 2015 to explore opportunities SARI/EI could support through specific capacity building efforts or technical assistance to support India – Bangladesh power trade. During the course of three days, the scoping mission team met with the Ministry of Power, Energy & Mineral Resources, Power Grid Company of Bangladesh Ltd., Bangladesh Power Development Board, and the Bangladesh Energy Regulatory Commission.

Based off the scoping mission meetings and subsequent dialogues with stakeholders, SARI/EI is in the design phase of a capacity building program focused on the formation and operation of electricity markets. This capacity building program will strive to strengthen key institutions in Bangladesh, as well as other SARI/EI countries, to understand of the policy and regulatory underpinnings that promote power markets, key regulatory drivers such as open access regulations, and the role of energy exchanges in the context of power markets development.

ONGOING AND UPCOMING ACTIVITIES

- Module 3 of the “Capacity Building Programme for Designing, Managing and Operating a Power Trading Entity” will be conducted January 4–8, 2016 at PTC India Ltd., New Delhi, India.
- The workshop on “Sustainable Development of Power Sector and Enhancement of Electricity Trade in the South Asian Region: Policy, Regulatory Issues/Challenges and the Way Forward” will be conducted January 15, 2015 in New Delhi, India.
- A “Hydropower Study Tour” for executives from Nepal, Bangladesh and Pakistan will be conducted February 1 – 4, 2016 in Bhutan. During the study tour, SARI/EI will present on key findings of the TF studies to senior government officials and honorable Members of Parliament (Nepal).
- SAARC Regulator Meeting, Colombo, Sri Lanka, February 8–9, 2016.
- Stakeholder's consultation with NEA, WECS, Nepal Planning Commission, Rashtriya Bank etc. for analytical study.

ABOUT SARI/EI

The SARI/EI program, funded by the United States Agency for International Development (USAID), promotes integration of energy systems and enhances cross-border energy trade among the South Asian countries by focusing on the following three development outcomes for overall socio-economic development of the region:

Harmonize Policy, Legal and Regulatory Issues

The key result of the Harmonization of Policy, Legal and Regulatory Issues component is to create the enabling systemic conditions for a sustainable market for investment and implementation of cross-border energy trade.

Advance Transmission System Interconnections

The key result of the Advancement of Transmission System Interconnections component is to create the enabling, systemic conditions for a sustainable market for investment and implementation of subregional bilateral transmission interconnections beginning with the Eastern Subregion of South Asia.

Establishment of South Asian Regional Electricity Markets

The key result of this component on Establishment of South Asian Regional Energy Market is to create the enabling and systemic conditions for a sustainable market for energy trading and exchange among the South Asian countries.

The overarching objective of the SARI/EI program is to develop a common template for technical and commercial aspects of power exchange among the South Asian countries. It intends to create the right enabling environment to support the establishment of a South Asian electricity market, gain consensus and support from the key decision makers and stakeholders in the South Asian region.

SARI/EI WEB PAGE

For current information on SARI/EI, please visit the web page: www.sari-energy.org.

BACKGROUND

Over the last two decades, South Asia has been one of the fastest growing regions in the world, with an average annual growth rate of 6% as measured by GDP per capita. Yet despite this impressive macroeconomic growth, the energy sector in the region has not been able to keep pace, and continues to experience chronic problems of supply shortage and poor quality of service. South Asia's energy security dilemma is one of the single energy development challenges of the 21st century critical to the economic future of almost 1.5 billion people. Given this dilemma, the only long-term solution is the sustained increase in regional energy cooperation among the South Asian countries.

USAID's South Asia Regional Initiative for Energy's (SARI/E) role over the past decade in advocating energy cooperation in South Asia has transitioned to the next phase of advancing regional energy integration and cross-border energy trade (CBET) in eight South Asian countries (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka).

This new phase titled South Asia Regional Initiative for Energy Integration (SARI/EI) is designed to

build upon USAID SARI/Energy's successful implementation in the past decade to move South Asian countries towards increased regional energy security. The program will address policy, legal, and regulatory issues related to energy in the region; promote transmission interconnections; and work towards establishing a regional market exchange for electricity.



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SARI/EI

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