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Session -2

Energy Integration (SARI/EI) Progress till Date

**1st Meeting of Task Force 1 Coordination of
Policy, Legal and Regulatory Framework
24 July 2013**

**Presented By
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IRADe - (SARI/EI)**



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Integrated Research and
IRADe Action for Development

Outline of Presentation

- Cooperative grant agreement The evolution of SARI/EI (Phase-4)
- Regulatory Workshop.
- 1ST Project Steering Committee Meeting
- Country visits
- Future Work Plans



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Cooperative grant Agreement

- USAID and IRADe entered into cooperative grant agreement No AID-386-A-12-00006 effective 1st October 2012.
- The agreement was a period of 5 years.



Regulatory Workshop Kathmandu February 2013: Key Findings

- India, Nepal, Bhutan and Bangladesh are keen for deeper engagement for CBET in the Region.
- South Asian countries are at various levels of electricity regulation, institutional and power sector reforms therefore laws, acts and correct policies are crucial for bringing in transparency, accountability. These are essential to build confidence for private sector participation and enhance energy availability in the region.
- Private sector participation is the key to long term success of cross border energy exchange in the region.
- Each of the countries in the SA region may need a different intervention and support in harmonization of legal, regulatory, policy concerning exchange and trade in the region.
- The various issues like technical complexities, risk of national grid interconnection, potential economic and financial benefits from interconnections, the role of an independent regulator, unbundling for accountability, open access in transmission, transmission pricing & loss sharing, Independent system operator, payment security etc. are the concerns that need to be addressed prior to energy exchange and trade.
- Presence of independent regulating authorities is crucial for promoting CBET in the region.
- Countries having independent regulating authorities have benefited as regulations have helped in increase in private generation through transparency in operation and tariff fixation, improvement of Grid Discipline (UI Mechanism), balanced stakeholders' interest, encouraged power trading, helped reduce market prices for electricity and empowered consumer etc.





TECHNICAL PARAMETERS: NEED FOR COORDINATION

| COUNTRY | PERMISSIBLE FREQUENCY BAND (Hz) | PERMISSIBLE DEVIATION | TRANSMISSION VOLTAGE LEVEL (KV) | PERMISSIBLE DEVIATION | LOAD DISPATCH, CONTROL CENTER | COMMUNICATION SYSTEMS |
|--------------------|---------------------------------|-----------------------|-------------------------------------|--|-------------------------------|--------------------------------|
| AFGHANISTAN | | | | | | |
| BANGLADESH | 49.0-51.0 | (+/- 2%) | 230,132 | (+/- 10%) | Single dispatch | PSTN,PLCC |
| BHUTAN | 49.2-50.3 | (+/- 2%) | 400 ,220,132,66 | (+/- 6%) | Single dispatch | PSTN,PLCC OPGW |
| INDIA | 49.2-50.3 | (-1.6%+0.6%) | 765,400,230,220, 132, 110,100,66 | 735-800 kV 420-360 KV 245-200 KV 145-120 kV | NLDC, 4 RLDCS, 33 SLDCS | WIDEBAND,VA ST,GSM,PLCC |
| NEPAL | 49.5-50.5 | (+/- 1%) | 132 ,66 | (+/- 10%) | No Hierarchical Structure | PSTN,PLCC, OPTICAL FIBER |
| PAKISTAN | 49.5-50.5 | (+/- 1%) | 500,220,132,66 | (+/- 10%) | 3 | Tele,Fax, PLC, OPGW |
| SRI LANKA | 49.5-50.5 | (+/- 1%) | 220,132 | (+/- 5%) | National Level | PSTN,PLTS,PLC |
| MALDIVES | 49.5-50.5 | (+/- 1%) | | (+/- 10%) | | |



Laws and Acts: Apex legal and Regulatory Institutional Framework

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| Country | Laws and Acts | Independent Regulatory Body | Appellate Authority / Concerned Institutions which looks into the disputes etc. |
|-------------|--|-----------------------------|---|
| Afghanistan | Draft Laws | | |
| Bangladesh | Bangladesh Electricity Act,1910 | BERC(through BERC Act 2003) | No dedicate Appellate Authority, BERC takes care of Disputes |
| Bhutan | Electricity act of Bhutan (2001) | BEA | Concerned Ministry of Court of law |
| India | EA-2003 | CERC,SERC | APTEL |
| Nepal | EA-1992 | DoED | |
| Pakistan | NEPRA ACT-1997, Amended Version of EA-1910 | NEPRA | Provincial high Court and Supreme court of Pakistan |
| Sri Lanka | Sri Lanka Electricity Act , 2009 | PUCIL | Court of Appeal Srilanka |
| Maldives | | Maldives Energy Authority | |



1ST Project Steering Committee Meeting New Delhi March 2013

Actions Points

Attendance: Attended by most of the nominated members.

Inaugural conference

- Preferably inaugural conference be inaugurated by the Minister of External Affairs and Minister of Power also addresses during inaugural or suitably any time during the event.

The conference shall be of 2 days with participation of about 150-200 delegates, Involving the private sector into the program activities

Steering Committee

- Approach Ministry of External Affairs, Govt. of India to nominate their representative on the PSC as it would add credibility to the program and infuse the necessary confidence amongst stake holders.

Task Force

- Revise the Terms of reference for Task Forces 1 & 2
- The Task force 1 & 2 may be constituted immediately so that at least one meeting is held prior to the Conference.
- Ministry of respective countries be approached for nomination on Task forces. They may be requested to maintain continuity of participation for at least 3 years for same officer alternatively by post/designation.

General

- For facilitating cross border trade the words “coordinated procedures/rules” to be used instead of “harmonization”.
- Instead of cross border energy trade, we should be specific and use “electricity” instead of “energy” as then the intent would be more focussed.





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Details of the findings from country visits



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Bangladesh



Bangladesh (Importing)

- **Bangladesh: Generation capacity addition of 39,000 MW needed to meet demand by 2030**
- **Main fuel is natural gas , proven reserve to exhaust in next 15-20 years.**
- **Relatively strong policy and regulatory institutional set up but need to strengthen financial viability to make it self sustainable**
- **Actions for substitution of natural gas as fuel has begun with imported coal.**
- **Dependent on electricity/fuel import to meet the requirements.**
- **500 MW Link with India is at advanced stage of construction and is expected to be operational soon.**
- **Keen on importing electricity from India and its adjoining states and thereafter from Bhutan based on equity participation and clearance of GOI (for permitting transmission access / corridors through India. Trilateral agreement between Bhutan-India- Bangladesh under discussion.)**

Sri Lanka



- **Installed Capacity 3312 MW , Peak demand 2000 to 2200 MW for 6 hrs in evening and 800 to 1000 MW 16-18 hrs.**
- **SL has fully exploited Hydro and no other energy source except for wind (2500 MW). Wind capacity limited by grid constraints to 100 MW. Now transiting to imported coal based generation.**
- **Bankability of sub-marine link to be addressed with some assured commitment of power flow in either direction. This shall improve strengthening national grid and its higher wind power absorption capability**
- **Techno economic viability for pumped storage also need to be examined.**
- **Cost of purchase of wind power is SLR 26 per unit.**
- **Affordability of electricity need improvement.**



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India



India : Import and transiting

- Geographically centre to all the SA countries, more than 220 GW of Installed capacity.
- Huge demand and Capacity to absorb large volumes of imported power
- Well functioning power market is in place.
- Strong legal , regulatory and policy institutions are in place .
- Have capacity and capability to guide and support bilateral efforts.
- Keen to have bilateral G 2 G agreements rather than multilateral .
- Permitted Indian trader (PTC) to export electricity through exchange.
- Removed tariff barrier on import of power in first week of this month.
- Short on capital for large infrastructure projects.
- Capital cost of Hydro project is INR 8- 10 crores /MW

Nepal



- 70 GW of proven Hydro reserves. Now talking of 170 GW.
- 700 MW installed . Plan to commission 3000 MW in next 5 years.
- Electricity law yet to be adopted by parliament.
- Signed MOUs of about 14000 MW and PPA's for 1400 MW.
- Capital Cost of hydro project INR 12 - 14 crores/MW
- GON need huge funding in Trans. and Dist.
- New projects constrained by limited local demand, evacuation capacity & financial security.
- Govt intervention needed to make power competitive to export in neighbouring countries.
- Legal, policy and regulatory framework to be supported .
- IPP's need to distinguish between long and short term PPA's as part of risk mitigation strategy.



Annual Work Plan (Status till date)

| Activities /Task | Target Time Frame | | Quarters | Progress |
|--|---|---|----------|------------------------------------|
| | Likely Start | Likely End | | |
| Visit Nepal, Bangladesh, Sri Lanka along with USAID | 02-Dec-12 | 21-Dec-12 | q1 | Done |
| Constitution of steering committee | Feb -2013 | March , 2013 | q2 | Done |
| Conduct steering committee meetings | Mid-March -2013 | Mid-March -2013 | q2 | Done |
| workshop of regulators of all SAS countries | Mid February 2013 | Mid February 2013 | Q2 | Done |
| Background Paper | Early Dec-12 | Captured during Regulators Workshop | q1 | Done |
| Prepare and circulate Program Brochure on CBET to all stakeholders | Brochure for Conference End Feb- 2013 | Brochure for Conference End March 2013) | q2 | Done |
| Conduct High Level Regional Conference | April/ Mid May 2013 | April/ Mid May 2013 | q3 | |
| Setting up of Task forces TF-1 and TF-2 | 02-12-2012 (starts with the Visits) | Early Apr-2013 | Q1,Q2, | Done |
| Organize Task force meeting | Immediately after the High Level Inaugural Conference in April - May 2013 | Immediately after the High Level Inaugural Conference in April - May 2013 | q3 | To be held in July, August , 2013. |
| Additional country Visits made | | | | Held in May and June,2013. |
| Country Visits | | Mid Sept 2013 | | |



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Immediate Future Activities

- High Level Conference in Delhi



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Discussions.....



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Thank You



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