Background Note and Key Points for Discussion

for the Round-Table Workshop
On
Regional Investment Framework and Policy Guidelines for promoting investment in South Asian Power Sector and in Cross-Border Electricity Trade (CBET) in South Asia

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Hotel Radisson
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Under the aegis of

South Asia Regional Initiative for Energy Integration (SARI/EI)

Background Note
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Background:

South Asia has countries endowed with diverse energy sources with an estimated combined hydro potential of 350 GW (primarily Bhutan, India, Nepal and Pakistan). Harnessing this clean energy potential can accelerate development in the each of the South Asian Countries (SAC) and the region. Unfortunately, many of the countries are unable to harness the energy potential due to low investment capital, lack of access to technology, un-availability of skilled manpower, and lack of strong institutional framework for project development and operation. South Asia is one of the fastest growing regions in the world. South Asian countries[1] needs an investment of USD 1.7 to 2.5 trillion (2011-2020) to bring its power grids, roads, water supplies up to the acceptable standard needed to serve its population. A total investment of USD 603[2] billion is required for SAARC countries only for electricity infrastructure development. Bangladesh, India, Nepal, Pakistan and Sri Lanka are expected to invest around US$16.5 Billion, US$ 468.8 Billion, US$7billion, US$ 96 Billion and US $ 9 Billion respectively by 2020 for the electricity infrastructure development.

The Cross-Border Electricity Trade (CBET) in South Asia is pegged around 2300 MW, however it is expected to increase manifold in future for which huge investment are required for to develop associated generation projects and transmission infrastructure. For an integrated regional power grid, South Asia is projected to need at least USD 1,390 billion[3] for expanding electricity generation from 2015 to 2040 period (in order to add approximately 750 GW of electricity generation capacity).

Nepal's is rich in energy resource particularly hydro power resource, both for large-scale and innovative small-scale projects. Nepal's river systems comprise approximately 83,000 MW of hydropower potential, of which only approximately 800 MW, less than one per cent of its proven potential, has been harnessed. Currently, the Government of Nepal (GoN) is focusing on rapid development of hydropower sector where the GoN intends to install 26[4] GW of hydropower capacity by 2035. Nepal is poised to become one of the major players in cross border electricity trade. It is estimated that Nepal will become a net export of power in the region by 2023. From the existing 800 MW of installed capacity, domestic demand is expected to grow to more than 6,000 MWs by 2030. This will require more than approximately US$ 6.45 billion in downstream infrastructure investment. Recent SARI/EI[5] study mentions that "With accelerated power trade between India and Nepal, Nepal's gross domestic product could reach NPR 13,100 billion (over $120 billion) in 2045, which is 39 percent more than with existing trading mechanisms. This growth in GDP is driven in part by the three-fold increase from NPR 310 billion in 2030 to NPR 1,069 billion in 2045 in revenue earned from electricity trade. Moreover, increased power trade will also fuel Nepal's per capita electricity demand to

1 World Bank report Reducing Poverty by Closing South Asia's Infrastructure Gap, Dec,2013
2 World Bank report Reducing Poverty by Closing South Asia's Infrastructure Gap, Dec,2013
3 http://documents.worldbank.org/curated/en/846141468001468272/pdf/WPS7341.pdf
4 http://www.ibn.gov.np/uploads/files/Working%20Classification/IBN/Sector%20Profiles/Energy%20Sector.pdf
5 http://www.irade.org/Final%20Post%20Event%20Press%20Release%20Jan%2019%20(5).pdf

jump from the current 139 kWh/year to 1,500 kWh/year by 2045." [6]The investments in Nepal's hydropower sector will happen for both cross-border energy trade as well as for the domestic projects. On renewable energy front, with an average global solar radiation ranging from 3.6 – 6.2kWh/m2 per day, an average insolation intensity of about 4.7kWh/ m2 per day, and sunshine on an average of 300 days in a year, there is great potential for harnessing solar energy in Nepal[7]. A 2008 report entitled "Solar and Wind Energy Resource Assessment in Nepal" (SWERA Report) produced by the Alternative Energy Promotion Centre (AEPC) estimated that Nepal has a potential capacity of 2,100 MW for grid integrated Photovoltaic (PV) power[8]. Nepal has high potential for wind energy, the SWERA Report cited above estimated Nepal's gross wind power potential to be 3,000 MW.

Availability of finances at affordable rates is crucial for development of energy resources. For arranging finance for energy projects which are capital-intensive particularly for hydro power projects are very challenging in the South Asian context and is very critical for financial closure of projects and for their effective implementation.

In order to address these investment and financing challenges in power sector and in CBET projects, USAID's South Asia Regional Initiative for Energy Integration (SARI/EI) program has commissioned a study under the Task Force-1[9] to develop an investment framework and policy guidelines to promote regional investment in power sector and cross border electricity trade, with the objective, to enhance energy security in South Asia for the socio-economic development in the region. The objective of the study is to Review and analyse a) current Investment Scenario/ trends in South Asian Power Sector b) various Investment related Policies/Guidelines/Regulations/Frameworks prevailing in each South Asian Countries (SACs) related to Power Sector and Cross Border Electricity Trade (CBET) and c) assess its impact on the investment in South Asian Power Sector (SAPs) and particularly in the regional power and CBET Projects and d) develop Regional Investment Policy Guidelines (IPGs) and a Regional Investment Framework for Promoting Investments in SAPs and particularly in the regional power and CBET Projects

Objective of Round-Table Workshop

The objective of this round table workshop is to

1. Deliberate on key issues and concerns impacting investment in the regional power development, Nepal's Power Sector and Cross Border Electricity Trade projects and required areas for intervention and identifying appropriate investment & policy framework to promote regional investments in power sector and cross border energy trade.

2. Assess, analyses and gather the key concerns of investors, lenders, Multilateral Development Banks (MDBs), Project developers for promoting investment in SAPs and in particular in the regional power projects & CBET projects with a view to develop of Regional Investment Framework and Policy Guidelines for promoting investment in South Asian Power Sector and in Cross-Border Electricity Trade (CBET) in South Asia.

6 http://www.ibn.gov.np/uploads/files/Working%20Classification/IBN/Sector%20Profiles/Energy%20Sector.pdf
7 http://www.ibn.gov.np/uploads/files/Working%20Classification/IBN/Sector%20Profiles/Energy%20Sector.pdf
8 http://www.ibn.gov.np/uploads/files/Working%20Classification/IBN/Sector%20Profiles/Energy%20Sector.pdf
9 TF-1 is working on Coordination of Policies, Legal and Regulatory Frameworks and deals with issues related to the policy, legal, and regulatory aspects of Cross Border Electricity Trade. It comprises nominated members from the country, regulatory authorities, energy/power ministries, and other policy-making bodies. It works on the harmonization of policies and regulations, framework for licensing, open access, tariff and trade negotiations, dispute resolution mechanism, and so on, thus creating conditions for a sustainable market for investment and the implementation of cross-border electricity trade projects. Task Force-1 had published the Regional Regulatory Guidelines (RRG 2015), which are a set of guidelines on common regulations, rules and protocols in technical, operational and legal matters for harmonization/coordinating on electricity regulation from the perspective of promoting CBET in South Asia. Task force-1 also published a report on "Suggested Changes/Amendments in Electricity Laws, Regulations and Policies of South Asian Countries for Promoting Cross-Border Electricity Trade in the South Asian Region".

The ongoing study has identified has shortlisted key focus areas for enhancing regional investment in power sector and cross border energy trade:

	Parameters	Issues	Mitigation measures
Political and policy risk	Policy framework	• Complexity in project development and operations • High transaction cost • Transparent and predicable business environment for regional trade • Trade policy to promote regional investment • Issues related to flow of investments, human resources, technology transfer • Non-discriminatory intellectual property right for regional investors	• Non-discriminatory investment policy, to promote regional investment • Regional investment policies, for frictionless flow of investment, skilled labor, technology and other resources, protection of property right etc. • Regional trade policy to address various issues e.g. project development and operation, technology transfer etc., to reduce transaction cost • National competition policy in consistence with regional investment policies, to promote regional investment • Promotion of public investment in energy project through BOO, and BOOT business models under PPP
	Political/ country risk	• Political and social unrest • Unilateral changes in agreement • Change of Law	• Strong regulatory enforcement, to insulate business operations from political decisions • International investment agreements (Bilateral investment treaties, Free trade agreement) • Political insurances • Guarantee against expropriation without compensation • Guarantee of fair and equitable treatment
Regulatory and legal risks	Public governance	• Alignment in regulatory country framework, with regional regulatory framework • Coherence among institutions of regional countries • Administrative processes • Treatment of unethical practices	• Coordinated functioning of public institutions to promote regional investment and trade in energy sector • Capacity building of public institutions • Mapping of administrative process for project development and operation in SAC • Simplification of administrative process for easy compliance • Strong vigilance

	Legal framework	• Contract enforcement • Bureaucratic and cumbersome procedure • Alternative dispute resolution mechanism • Legal stability & predictability	• Judicial system for strong contract enforcement • Standard contract documents • Provision of alternative dispute resolution mechanisms including arbitration, mediation and conciliation • Large role of inter-governmental body (e.g. SAARC Arbitration Council) for Investor-state dispute settlement • Involvement of all stakeholders in the development/amendments of laws, regulations and treaties • Investor-state dispute settlement when foreign investors can bring arbitration claim against host govt. in case of breach of treaty guarantee
Project development risk	Project Development	• Site identification and resource assessment • Land acquisition • Rehabilitation and Resettlement • Environmental and social issues • Power off take arrangement • Administrative approvals • Skilled manpower	• Standard technology specific project development guidelines to promote regional investment • Countries should make regional investment proposal to coordinating body • Countries should facilitate in land acquisition and related issues • Single window clearance for regional investment projects • Regional skill development center
Commercial and financing risks	Foreign Investments	• Currency fluctuation risk • Volatility in exchange rate • Currency convertibility risk • Expatriation	• Consistent currency flow regulation; • US dollar denominated PPA. • Mitigating the currency hedging risk and reducing the cost of capital
	Taxation policy	• Predictability of tax policies • Consistent import and export duty for regional trade • Non- discriminatory tax policy for regional investor	• Non-discriminatory taxation policy for regional investment • Stable tax regime • Optimize effective tax rate • Simplification of taxes for import and export duty for regional trade
	Corporate Governance	• Disclosure requirements • Differing accounting, reporting or auditing standards	• High standards of uniform corporate disclosure • Uniform reporting standard for investors • Integrated capital market

		• Inconsistency in capital market regulations	
	Financing Investment	• Aligned security regulations • Profits and capital Repatriation/transfer risk • Financing and refinancing of debt in regional market • Liquidity risk • Innovative investment schemes	• Promotion and facilitation for Green funding options (e.g. green bonds, clean tech funds) • Develop ecosystem (exchange, platform, broker, market-makers, advisor, equity research etc.) • Prioritize energy projects (especially clean energy project) and economic incentives for the promotion of it

Key Points for Discussions in the Round-Table Workshop

- What are the innovative policy, fiscal and market instruments required/needed to mobilize investments including specific financial/fiscal instruments that can be adopted to address different risks?
- What improvements/ changes in the policies/regulations/ legislations, can be adopted to improve confidence of investors and lenders to invest in hydro/CBET projects?
- What specific measures are required to ensure timely completion of projects Pre-construction time, government approvals, etc?
- What is the agreed internal ratings or methodology to enable countries to understand the investment parameters they need to improve upon to attract more investment?
- What sort of government assistance/ policy interventions are required to enable investment in cross-border power trade.
- How can an agreed pricing and cost sharing framework for regional power projects be evolved?
- What is the role of Foreign Direct Investment (FDI) and intraregional FDI for in South Asia for meeting investment requirements?
- How to improve the easy of doing business?
- How to promote Intraregional Investments through South Asia Regional Integration, integration of capital markets and regional investment protection frameworks.
- What is the feasibility of aligning power regulations across countries to encourage seamless integration (technical as well as commercial) and how it will be help full in creating an investor friendly policy environment?
- What are the legal, dispute resolution, contract enforcement related issues being faced in CBET projects?
- What kind of common tax incentives and benefits for regional projects can be adopted?
- How a standardized PPAs and contractual arrangements for easy financial closure and address various risks associated with CBET projects.
- What kind of investment protection instrument needs to devise in a regional context. Do we need regional investment protection agreement/treaty?
- How to institutionalize the investment promotion in South Asia Regional Context.

Some Major Hydropower Projects in Nepal

Hydropower Projects	Capacity (MW)	Domestic Energy Share	Cost Estimate ($ M)	Status
Upper Karnali	900	12% free to GoN (Option to buy additional power)	1,050*	PDA signed
Arun III	900	21.9% free to GoN (Option to buy additional power)	1,009*	PDA signed
Upper Marshyangdi 2	600	To be decided	723*	Generation license applied
Upper Trisuli 1	216	100% Domestic	580	PDA signed
Tamakoshi 3	650	To be decided	925*	To be bid out
West Seti	750	100% Domestic	1,000	JVA initiated
Upper Arun	335	100% Domestic	445	--
Upper Tamakoshi	456	100% Domestic	441	Under Construction
Budhigandaki	1,200	100% Domestic	2,593	DPR completed

Source: http://www.ibn.gov.np/uploads/files/Working%20Classification/IBN/Sector%20Profiles/Energy%20Sector.pdf

Some Potential Generation Projects (Above 200 MW) in Nepal

S.N.	Project Name	Project Type	Capacity (MW)
1	Karnali Chisapani	Storage	10,800
2	Sun Koshi 2	Storage	1,110
3	Lower Arun	Peaking RoR	650
4	Tamakoshi III	Peaking RoR	650
5	SR-6	Storage	642
6	Sun Koshi 3	Storage	536
7	Peaking RoR	Peaking RoR	500
8	Lower Badigad	Storage	380
9	KR-7	RoR	330
10	Dudh Koshi	Storage	300
11	Madi	Storage	200
	Total		16,098

Source: (NEA Annual Report, 2015) , http://www.ibn.gov.np/uploads/files/Working%20Classification/IBN/Sector%20Profiles/Energy%20Sector.pdf

Hydro Projects under Construction in Nepal		Hydro Projects Planned & Proposed in Nepal	
Project Name	**Capacity (MW)**	**Project Name**	**Capacity (MW)**
Upper Tamakoshi	456	Dudh Koshi Storage	640
Tanahu	140	Tamor Storage	530
Rasuwagadi	111	Upper Arun	335
Madhya Bhotekoshi	102	Uttar Ganga Storage	300
Upper Trisuli 3 A HEP	60	Chainpur Seti	140
Sanjen	42	Tamakoshi V	87
Upper Trisuli	42	Upper Bheri	85
Rahughat HEP	32	Upper Modi A	42
Chameliya HEP	30	Upper Modi	18
Kulekhani III	14	Total	2,177
Upper Sanjen	14		
Total	1,044		

Source: (NEA Annual Report, 2015) & http://www.ibn.gov.np/uploads/files/Working%20Classification/IBN/Sector%20Profiles/Energy%20Sector.pdf

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SARI/EI

IRADe Integrated Research and Action for Development

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