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SARI/E POLITICAL ECONOMY ANALYSIS USAID/INDIA

FINAL REPORT
EXECUTIVE SUMMARY

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DISCLAIMER

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

EXECUTIVE SUMMARY

To understand better the political and economic underpinnings that facilitate regional energy market formation and cross border energy trade in South Asia and to recommend strategies for its South Asian Regional Initiative for Energy¹ (SARI/E) program implementation going forward, USAID (United States Agency for International Development) engaged Social Impact, Inc. (SI) to conduct this political-economy analysis of cross-border energy in the South Asia region.

Over a seven-week period (October 29–December 16, 2011), the study team² interviewed members of governments, energy utilities, business chambers and associations, small and medium businesses as well as multinational corporations, legal practitioners, trade officials and members of civil society in Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka.³

CONCLUSIONS

Sub-Regions of South Asia

South Asia is composed of two very different sub-regions. The eastern sub-region (“SARI-East”) is comprised of Bangladesh, Bhutan, India, Nepal and Sri Lanka; the western sub-region (“SARI-West”) is comprised of Afghanistan and Pakistan. One major difference between the two sub-regions is that India represents a stable core for SARI-East and its economy is beginning to serve as an engine for economic growth for the other countries of the sub-region. The countries of SARI-East are market-focused and poised to develop commercial trading arrangements that, in conjunction with the “virtual energy grid” (described below), can facilitate the expansion of energy trade among each of its five member countries and are expected to develop over the next ten years.

By contrast, SARI-West has neither a stable core nor a central engine for economic growth. Instead, Afghanistan and Pakistan are characterized by fragile political systems, coupled with growing insecurity, which currently makes investment risky and development both difficult and expensive. SARI-West is, therefore, a high risk/high return environment for the development of energy projects.

¹ USAID’s South Asia Regional Initiative for Energy

² The Study Team included Robert Borgström, Team Leader (SI); Richard Edwards (Nexant) and David Garner (MSI) and was assisted by Ray Holton (Nexant), Rajan Kapoor (MSI), Kavita Kaur (Nexant), Michael Kugelman (SI), Mahendra Lama (Nexant) and Jennifer Oetken (SI).

³ In addition to the Team’s travel to Bangladesh, India, Nepal, Pakistan and Sri Lanka, interviews with stakeholders from Afghanistan and Bhutan were conducted by telephone and during a SARI/E-sponsored workshop in Kathmandu, Nepal, “Supporting the Development of Cross Border Transmission Interconnection Networks.” These interviews were supported by a desk study in which researchers, utilizing available, existing data, including previous reports and documents, prepared briefing books for each country.

The “Virtual Energy Grid”

The concept of a Regional Energy Grid implies a series of physical connections among the countries of South Asia similar to those found in South Africa, the European Union, the Nord Pool, etc. The construction of this physical network, if it occurs, would support the theme of regional cooperation that was the objective of establishing the South Asian Association for Regional Cooperation (SAARC) in 1985. Numerous studies have been conducted in the past, both at bilateral and regional levels, on the topic of energy exchanges. However, as of early 2012, the broad concept of a Regional Energy Grid has not been implemented and is unlikely to be implemented in the foreseeable future.

What is taking shape, however is a move towards bilateral interconnections between India and its immediate neighbors. These connections are shown in Figure 1. Table 1 presents the status of existing and proposed interconnections between India and other South Asian countries.

While these existing, developing, and prospective interconnections could represent the first steps in building a Regional Energy Grid, the further development of this physical grid seems tenuous. Currently, only nominal options exist for: (1) bilateral interconnections involving countries other than India (e.g., Bhutan-Bangladesh, Nepal-Bangladesh), or (2) the evolution of existing, bilateral connections into multi-lateral connections involving India and two or more neighbors (e.g., Bhutan-Bangladesh-India).

However, the anticipated unification of the Indian electricity grid by 2014, combined with (a) the development of strategic, bilateral interconnections between India and its neighboring countries, and (b) the potential expansion of existing electricity exchanges to encompass energy market transactions throughout the region, is building a platform for regional energy trade. This “Virtual Energy Grid” represents a realistic goal for South Asia over the next 10 years.

On February 6, 2007, India’s Central Electricity Regulatory Commission issued guidelines for setting up power exchanges in India. Subsequently, on June 27, 2008, the Indian Energy Exchange (IEX) began the first-ever power exchange in India. Although this arrangement presently accounts for only two percent of the energy sold within India—the remainder is sold under long-term, bilateral arrangements—IEX’s market share of India’s demand for energy is growing rapidly.

The significance of the growing market for electricity is that when this transactional model is placed on the platform of country-wide grid unification, it will be possible for India’s energy exchanges to effect transactions between any pair of buyers and sellers, regardless of their geographical location within India. Electricity will not have to be moved across the entire intervening distance; surpluses and shortfalls can be matched in real time by transactions in the trading room. This process of connecting buyers and sellers through a market is what we are calling the “Virtual Energy Grid.”

Figure Ex-I - Existing, Developing and Prospective Interconnections



Names and boundary representations are not necessarily authoritative.

U.S. Dept. of State

TABLE EX-I: STATUS OF EXISTING AND PROPOSED INTERCONNECTIONS

COUNTRIES	CONNECTION	INTERCONNECTION	STATUS	ESTIMATED DATE FOR FUNCTIONALITY
Bhutan	Punatsangchu (Bhutan) – Alipurduar (India)	400 kV DC	Existing	maximum operational
Bangladesh	Baharampur (India) – Bheramara (Bangladesh)	400 kV DC and 500 MW HVDC (upgradable to 1000 MW)	Under Construction	April 2013
Nepal	Approx. 20 linkages exporting power from India to small, isolated markets in Nepal.	Various lines at 132/33/11 kV	Existing	Currently operational
	Muzaffarpur (India) – Dhalkebar (Nepal)	125km, 400 kV, interconnection	Under Development	<ul style="list-style-type: none"> • Completion of connection for enhanced export from India: near-term [2014?] • Full utilization for export of excess generation from Nepal: 5-10 years
Sri Lanka	Madurai (India) – Anuradhapura (Sri Lanka)	130km (India); 91km (undersea cable); 150km (Sri Lanka) / 500 MW	Proposed - Joint feasibility study being reviewed.	Functionality: after 3+ years of construction once a decision to proceed is taken.
Pakistan		500 MW	Under discussion; negotiations.	Unknown; could be completed within 3-6 months.

By the year 2014, it is anticipated that there will be one, unified electricity grid within India. (While the Indian system initially developed with five independent grids, at present all but the southern grid already are linked together). When India achieves full grid unification, transmission system operators will be able to move electrons around the country, matching supply and demand and taking full advantage of India's diversity and complementarity.

Moreover, India shares a border with each of its South Asian neighbors, except Afghanistan, the Maldives and Sri Lanka. When India is linked to each of these countries, as well as to Sri Lanka⁴, by suitable high-tension, bilateral interconnections, India could serve as the nodal point for energy transfers around the region. In principle—and potentially in practice—surplus electricity produced in Nepal could be sold “virtually” to buyers in Bangladesh or even Sri Lanka.

Unlike a network of physical interconnections that will require significant investments in the building of transmission lines and related facilities across South Asia, a Virtual Energy Grid could begin to develop as currently-planned, bilateral connections are completed. For example, when the Bangladesh interconnection is completed in 2013, electricity could be bought and sold between parties in Bangladesh and in the northern parts of India. Furthermore, once the unified Indian grid is completed in 2014, such potential transactions could involve parties anywhere in Bangladesh and anywhere in India. Even more broadly, Nepal could sell energy into the Indian market, which could then “virtually” be transferred through India to Bangladesh, with no need for additional, connecting, physical infrastructure.

Priorities for a Sub-Regional Reform Agenda

SARI-East

Since its establishment in 2000, SARI/E has been successful in bringing stakeholders together around the region to discuss regional energy issues. Going forward, SARI/E can leverage this experience to focus stakeholder attention on the steps that will be required to support the development of Virtual Energy Grid in SARI-East countries. Going forward, SARI/E can leverage this experience to focus stakeholder attention on the steps that will be required to support the development of a Virtual Energy Grid for SARI-East countries.

Those steps fall into one of two general categories: “hardware” (the actual, technical issues associated with building and operating the required infrastructure) and “software” (the development of commercial trading arrangements, for which laws will have to be enacted, regulatory and other institutions of governance will have to be established, and existing utilities will have to be restructured and refocused upon competitive, commercial objectives). To date, stakeholders have focused disproportionately on the technical aspects of cross-border trade—the “hardware” of building the grid—leaving much more work to be done with the non-technical issues—the “software”.

⁴ The feasibility of an undersea cable linking India and Sri Lanka is under active consideration.

Notwithstanding the compelling case for the Virtual Energy Grid, taking the necessary steps to achieve that result will not be easy. Likely, this process may take decades and will extend far beyond the next phase of SARI/E. However, SARI/E can build on its past successes and provide meaningful support to this process.

SARI-West

This sub-region faces macro-level political and economic problems closely woven together that will be difficult to overcome in the near term. There are, however, practical ways for SARI/E to address this challenge. A SARI/E sub-regional reform agenda for Afghanistan and Pakistan might involve working with other donors, for example, to address specific aspects for one or more major cross-border initiatives. An element of this approach would be for SARI/E to support a demand forecast projection for Afghanistan and/or Pakistan in order to determine the scope for cross-border power trade to mitigate energy shortages. Additionally, representatives from Afghanistan and Pakistan should routinely participate in various SARI/E task force meetings. Such participation will continue to support regional dialogue between and among SARI/E Countries to focus on new ideas based on experience in the Eastern sub-region.

RECOMMENDATIONS

Task Forces

SARI/E should facilitate the establishment of focused “Task Forces” to address software issues critical to creating the commercial trading environment for an expansion of cross border energy trade. The composition of these Task Forces would include representatives of government, utilities, businesses, and other stakeholder organizations appropriate to the focus of the group.

In addition to SARI/E’s current task force on generation and transmission (SATURN), illustrative topics that SARI/E Task Forces could address include:

- Commercial trading arrangements
- Commercialization of utilities
- Legal issues of cross-border trading
- Harmonization of regulatory policies and practices
- Tariffs and subsidies

Not all Task Force Groups need to be established at the beginning of the new SARI/E program. In some cases, it may prove more acceptable, politically, to form an interim working group that can grow into a Task Force, if stakeholders appreciate the need for such an instrument.

Modalities for the Task Force would include:

- ***SARI/E Secretariat*** In implementing the next phase of SARI/E there should be a Secretariat that provides organizational support and facilitates the work of each Task Force, including preparation for each Task Force meeting and subsequent follow-up to provide continuity and a sustained focus on its prescribed activities.
- ***Permanent Task Force Groups*** SARI/E should strive to have each Task Force become a permanent working group. SARI/E should ask organizations to nominate an individual to become a *permanent* member of a Task Force. To ensure suitable continuity, organizations should nominate both a member and an alternate.
- ***Regularly Scheduled Meetings*** The Task Force should meet regularly (e.g. quarterly) or as may be appropriate to a particular task.
- ***Focused Agendas*** As far in advance as practicable, the SARI Secretariat should circulate an agenda for each Task Force meeting as well as other pertinent documents for review and discussion.
- ***Professional Facilitation*** On an as-needed basis, an independent facilitator should be available to help members of a Task Force discuss important issues with the goal of reaching consensus and moving the agenda forward in constructive ways.
- ***Demand-driven*** The next phase of SARI/E should be demand-driven, making focused transactional-level technical assistance and training available to SARI countries in the process of negotiating specific, cross-border energy-trading regimes. The new program should be set up to work on a task-order basis so that the program can provide specific assistance regionally, in close coordination with relevant member countries as needs evolve.

Coordination with Supporting Institutions

The study team explored options for working through regional institutions such as SAARC⁵ and broadening the base of participation to include other donors to ensure sustainability in SARI/E in the future. Although the study team concluded that no single, existing, regional organization in South Asia is appropriate for carrying SARI/E's legacy into the future, USAID should continue to work with other regional entities and coordinate activities of common interest and purpose, but retain its independence so as not to compromise its ability to meet stakeholders' needs as they develop.

⁵ South Asia Association for Regional Cooperation (SAARC); other regional institutions that were considered include: The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC); the South Asia Growth Quadrangle (SAGQ); the South Asia Sub-regional Economic Cooperation (SASEC) and the South Asia Forum of Infrastructure Regulators (SAFIR).

Engaging Civil Society and Media

SARI/E should provide targeted assistance (funding, technical assistance, and training) for awareness-raising activities on cross-border trade issues for the general public, the business community, academia, the media, energy regulators, government, and legal professionals working in the SARI/E countries engaged in cross-border energy trade.

Promoting Public-Private Partnerships (PPPs)

SARI/E should include the private sector in the task force structure described above, and consider creating a task force focused on promoting public-private partnerships (PPPs) and exploring ways and means to take advantage of the Government of India and other regional schemes and financing opportunities for PPP development for cross-border energy trade.

Documenting SARI/E Success Stories

SARI/E should devote sufficient resources in the next phase of the program to document program successes in fostering cross-border energy trade to date. Such documentation, in the form of success stories and case studies, should be presented on the SARI/E website and to the Task Forces, and be made widely available to media in the SARI/E countries. Furthermore, SARI/E documentation, including outputs of Task Force meetings, should be shared broadly among USAID Missions, in Africa and elsewhere, that are engaged in cross-border energy trade issues.