

Training Needs Assessment for the South Asia Regional Initiative for Energy (SARI/E)

Final Report

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South Asia Regional Initiative For Energy Cooperation and Development (SARI/E) Training Needs Assessment (TNA) Final Report

1.0 Executive Summary

1.1 Background

The South Asia Regional Initiative for Energy (SARI/E program) was launched in 2000 with the objective of building mutually beneficial energy linkages and promoting regional energy cooperation among South Asian countries. SARI/E serves as a vehicle to bring together energy sector players from both public and private sectors across the region to discuss and resolve issues that impede cooperation and investment in energy development. Improved regional energy cooperation is expected to help deliver reliable and affordable energy services for increased economic growth and to the underserved population. SARI/E support is also geared towards the development of appropriate policies, regulatory frameworks and investment environments that will encourage private sector investment.

Because energy resources are not evenly distributed throughout the region, collaboration between countries could improve access to energy and a more efficient management of these resources. For example, there are large, undeveloped gas resources in Bangladesh and India, hydropower resources in Nepal, Bhutan and India, and wind resources in Sri Lanka. At the same time, there are a large number of people with unreliable, unaffordable or no access to electricity. There are also varying levels of capacity in each country to develop, utilize and manage these resources. The opportunity to share information pertaining to energy management and trade would benefit all nations through improved matching of resources to needs, increased use of cleaner and more efficient technologies, increased access of rural populations to energy and greater participation of “energy-aware” consumer groups in developing reasonable and manageable policies related to this sector. These are, in fact, the goals of the SARI/E.

SARI/E objectives complement ongoing bilateral energy, environmental and economic development programs: hydropower development in Nepal, energy sector reforms in Bangladesh, distribution reforms in India and the competitiveness initiative in Sri Lanka.

A mid-term evaluation of the program was conducted in January 2003 which recommended a training needs assessment be performed. As a result, USAID requested the Institute of International Education’s Energy Group (IIE/EG) to undertake the TNA in May and June 2003. IIE/EG assembled a four-member team to carry out the TNA. In preparation for the TNA, the team met together and with USAID/Washington to draft a TNA strategy that was presented to USAID/Washington and USAID/SARI/E management, upon the team’s arrival in New Delhi. The team visited Bangladesh, India, Nepal and Sri Lanka from May 26th to June 9th, 2003 to carry out interviews with key stakeholders. To cover all four countries during the two-week period allotted for TNA fieldwork, the team split into two groups, one traveling to Bangladesh and Sri Lanka, with the other focusing on Nepal and India. Directly following the groups’ respective travels, the team reassembled in New Delhi to formulate an initial assessment report of preliminary findings¹.

The major objectives of the TNA were to:

¹ This preliminary report was submitted to USAID SARI/E management on Monday, June 9, 2003.

- ❑ Assess current knowledge base and skills among selected key institutions and stakeholders.
- ❑ Identify potential institutional stakeholders that can play a leading role in implementing activities to build capacity for regional energy cooperation.
- ❑ Determine opportunities where training in focused priority areas can contribute to SARI/E objectives
- ❑ Develop a detailed training plan for targeted stakeholders based on TNA results.

1.2 Key Findings

In the last three years, a significant training program has been implemented under the SARI/E project. Based on the TNA team's interviews, this training has been generally well received. Our findings reinforce the conclusions reached at the mid-term evaluation, such as the need to incorporate in the training local and regional case studies and expertise and to promote collaboration among specific institutions/individuals within the region on common areas of concern. Furthermore, the TNA found the need to redefine and sharpen the focus on "target" solutions in the following priority areas:

Improved Utility Management: Executive decision-making and general management skills in utilities are acknowledged to be weak in most SARI/E countries. Training programs that focus on goal-oriented management techniques and accountability will help promote organizational change. Change management techniques themselves are not widely understood.

For distribution utilities, specific areas for attention through training, exchange of information and experience include commercialization of utility operations and associated skills related to improved financial management, human resource management, information management, outsourcing and franchising, and customer service. Operational skills are in need of improvement in areas such as metering, energy auditing and loss reduction, load management, load research, fuel supply and procurement.

Rural Energy Delivery: While improved rural energy delivery and service are considered to be high priorities in all the countries visited, there is a general lack of awareness of accumulating experience (both successes and failures) within the region, particularly with respect to the adoption of specific delivery models: establishment of rural cooperatives, franchises, and the management of local networks by end-user groups.

There is a need to expand training within utilities, and other public sector institutions, in the skills related to the implementation of distributed and off-grid systems, particularly with respect to the maintenance of such systems and the establishment of rural energy "extension" services.

Energy Efficiency: An area that has received some attention within the scope of current SARI/E training activities is the development and implementation of appliance standards and labeling practices. The establishment of mechanisms to compile available audit information and case studies in a database for use in training and capacity building would greatly enhance stakeholders' ability to provide information to the public in energy efficiency and to determine appropriate standards based on real usage data. To encourage the proliferation of energy efficiency applications in industry and commerce, and their adequate financing, there is a need to strengthen the understanding of technical and financial issues related to energy efficiency projects among banks and lending institutions, such as performing necessary due diligence, risk assessment, etc. Potential energy efficiency project

developers also need to know the nuts-and-bolts of creating a project proposal that may be seriously considered by financing institutions.

Restructuring and Regulatory Reform: In all countries studied, the TNA confirmed a growing awareness of the need for restructuring and regulatory reforms aimed at the establishment of market mechanisms and greater competition. Capacity building in this area should focus on the lessons emerging from an accumulating regional and international experience on topics such as the establishment and design of regulatory bodies, market design including transitional issues related to unbundling, incentive regulation, and multi-year tariff design. Establishing regional forums and the development of materials, including best practice guides related to these issues, to be undertaken through cooperation among countries through the mechanism of collaboration between institutions were frequently expressed ideas.

In areas related to establishing competition and regional power exchange, there is scope for training and capacity building in areas such as the commercial, technical, and legal aspects of electricity spot markets and exchanges. Lessons from international experience (Southeast Asia, South Africa, Europe and Latin America) in the establishment and operation of regional power pools could be included in the training plan, as a workshop and/or study tour (such as within countries of the Mekong River Basin).

Banking/Project Finance, and Attracting Private Investment: Stakeholder interviews confirmed an awareness of the general lack of creditworthy public/private sector entities in South Asian countries able to provide project security to lenders/ developers to secure project financing. It was noted that there is also a lack of skill and experience in project negotiation, assessing security package documents and developing evaluations of project risks. For the next phase of SARI/E, specific training should be considered for financial institutions, keeping in mind that the needs of such institutions are not necessarily homogeneous. It is recommended that specific training be distinguished for those institutions lacking any experience in energy sector financing and for those who have some experience.

Capacity Building for Public Awareness and the Media: Although the energy sector has become the focus of increased coverage in the print media, radio and television, the TNA field work confirmed the need for an improved understanding of the imperatives for broad based reforms in the energy sector among journalists. In addition, there is little coverage of the commonality of issues within the region, or of the benefits of regional cooperation. The key to developing ability in the region to address these needs is to design capacity building activities that are likely to result in actual coverage of the issues. Topical workshops combined with site visits of the type recently undertaken through the USEA were viewed as extremely useful. For the next phase of SARI/E it is recommended that such efforts be expanded to focus on the shared energy problems in the region (the 'energy-water' nexus, rural energy needs, energy efficiency, methods of reducing electricity theft, the costs of energy and energy pricing issues, the impact of unreliable energy supplies on employment and income are some examples) and that such training be combined with study tours that require participants to report on the experience gained. In addition to utilizing the recently formed SARI/E Energy Journalists' Forum, it is recommended that existing networks and associations of journalists also be used for this purpose.

The Media stakeholder group represents the greatest promise for using web-based capacity building techniques to reach a wide audience across the region. Journalists generally have access to computer

technology and very demanding schedules with little time to commit to classroom-style training. They would still be able to receive the full benefits of training however, with the availability of web-based training and resources that they could access at a time and place convenient to them.

The TNA found a significant need to improve local institutions' capacities to design and carry out public awareness campaigns so as to sensitize energy consumers to the critical issues of energy development in the region, including electricity pricing, government's role in providing electricity services, the role of the private sector and benefits of regional cooperation.

This report presents the cross-cutting issues that need to be addressed through cooperative training and capacity building, and illustrates a strategy and capacity building plan for doing so. The capacity building plan includes an estimated timeline and budget for USAID's consideration in the next phase of the SARI/E project. Specific Recommended Training and Capacity Building Actions can be found in Section 4 of this report and in Attachment V.

2.0 Assessment of Shared Regional Capacity Building Needs ²

This TNA has been conducted in order to design a training plan most suited to the region's needs, and that will become a part of the second phase of the USAID SARI/E training and technical assistance program in South Asia. The first phase ("Phase One") will come to a close in June 2004. To arrive at the recommended training plan, the IIE/TNA team ("the team") carefully analyzed the results of the meetings in Bangladesh, India, Nepal and Sri Lanka and compared the common issues in the region to the and potential opportunities for training and capacity building interventions. The proposed interventions are designed to yield positive results in the short-term and sustainable institutions in the long term.

The team met with a representative cross-section of stakeholders in each country, which were identified on the basis of those listed in the initial SOW and included the following categories: Public Institutions; Policy Makers; Private Sector/Private Developers; Financing Institutions; Media; Training Institution Partners (TIPs); Non-Governmental Institutions and Other (education, public interest group, consumer groups, etc). Some groups listed in the SOW were separated into 2 or more categories in order to distinguish their specific needs. For example, Public and Private institutions were separated so as to reflect their differing needs and circumstances in the region. Although the team could not meet with each stakeholder type in each country, they successfully covered the range of institutions across the region. For each stakeholder, the team identified the organization's current activity, previous experience in the SARI/E program, skills needed, areas of strength and weakness, potential new institutional leaders, and potential barriers to success that would need to be targeted to achieve SARI/E objectives.

The team identified common issues of regional concern by reviewing background relevant materials, as well as the evaluation & informative reports from the current SARI/E, and considering those areas identified in the TNA RFA as well as the SARI/E II RFA. These common issues were clarified during stakeholder interviews. The result of the assessment process revealed eight common themes important to regional energy sector development, and numerous subthemes,

² See Attachment IV "Table of Common Regional Topics & Issues" for detail

issues, and/or problems associated with each. These themes and the relevant issues are provided in summarized form below, and in detail in Attachment V.

2.1 Utility Management/Change Management. The ability of middle- and senior-level executives to effectively manage change within and outside of utility organizations likely to be affected by sector restructuring efforts was a topic that was raised repeatedly by many affected in-country stakeholders. Key stakeholder concerns relate to the lack of executive leadership at the senior-levels and the lack of operating line manager capabilities that will be necessary to guide the restructured utilities from operating as state-owned monopolies to their becoming efficiently functioning, self-sustaining, and operating unbundled entities. Special management skills will be required to ensure that newly re-structured entities are financially sound, provide reliable electricity, become responsive to customer needs, and are accountable to their customers in the overall quality of their service.

2.2 Rural Energy Delivery/Supply. Currently, the majority of the rural electricity sector in the SARI/E region is characterized by poor quality and unreliable service; poor equipment and transmission line maintenance; poor metering, billing, and collection; inefficient end user technology; inconsistent quality of grid-alternative service delivery groups (including cooperatives, franchises, etc.); a lack of awareness of rural service delivery in other countries, including successes, failures, and lessons learned; and a lack of understanding on a policy level of the types of policy that would facilitate the development of rural energy services. At the same time, the region contains a wealth of experience and success by rural electric cooperative (RECs) in providing excellent rural energy services and training others to do so. In many cases in the region and around the world RECs have proven to be more effective and efficient in the delivery of electricity service to rural customers than traditional, centralized electric utilities. What these successful entities lack is the capacity to institutionalize a self-sustaining training approach and the resources to share their training and training methodologies with other potential off-the-grid electricity consumers who could benefit from the establishment of RECs in their areas.

2.3 Energy Efficiency. Phase One of SARI/E has made great strides in developing a regional capacity to design and implement appropriate energy efficiency standards and labels for end-user appliances in the region. Despite a general understanding within most SARI/E countries of the benefits of energy efficiency, investment in, and the use of, energy efficient technologies nevertheless remains limited. This problem extends beyond retail consumers into the industrial and commercial sectors which have a greater potential for energy savings from more efficient technologies. To enable these savings, industrial and commercial consumers need to know how much energy they are using in their current operations and how much they could save through installing energy efficiency improvements. To determine this potential savings, they need relevant and/or actual energy efficiency data that can be used in energy audits or public awareness campaigns promoting energy efficiency. Furthermore, most SARI/E countries lack both adequate policy initiatives and receptivity from financial markets that is necessary for the widespread penetration of energy efficiency measures.

2.4 Regulatory Reform. Restructuring and regulatory reform covers a broad spectrum of issues involved in the harmonization of regional energy sectors. The restructuring of vertically integrated utilities is underway in most SARI/E countries, although it is much further advanced in India. The shift in the role of central government from being the primary electricity sector service

provider to being regulator is widely misunderstood by most SARI/E region stakeholders, including the potential regulators themselves. With the exception of India, there is little to no experience in establishing regulatory agencies or in drafting regulation (in energy or other sectors) that will effectively balance the interests of public/private investors, consumers and regulators. Clearly, much can be gained from the sharing of regional and international experiences between countries undergoing similar regulatory restructurings, as well as learning from the experiences of India which has had its own set of successes and failures and which could potentially help its neighbors to avert similar disasters. One key issue across the region, including in India, is the rationalization of electricity pricing. Resolving electricity pricing strategy and the design of a regional market that is conducive to regional energy trade is an essential priority to the future of regional interconnection.

2.5 Restructuring and Distribution Sector Reform. One of the weakest links of the region's energy infrastructure, and the number one cause of high losses and poor service, is the deteriorated state of distribution networks. Over the years there has been little investment in the distribution development or maintenance, and the remaining skeleton is simply insufficient to handle current capacities, much less the expected growth in demand. Not only is there a significant need to develop the physical infrastructure, but also an equally strong need to improve the performance and management of distribution entities. In several SARI/E localities distribution reform efforts are underway, whereas in others, the need for change has only just been identified and accepted by utilities. The need for training in distribution reform is extensive; there is a pressing need to improve management skills in areas such as: optimizing system design, standardization in equipment selection, commercial operation, management principles, MIS, commercial practices for metering, billing, and collection, loss reduction, financial planning, management and accounting, and others. Stakeholders in distribution also need access to information on regional and international restructuring efforts and experience. In addition to these technical and managerial issues, consumer awareness is a key issue in SARI/E countries, since one of the major operational difficulties faced by distribution entities is chronic non-payment by customers. Distribution companies need to find a way to communicate the cost of supplying electricity to consumers and the efficiencies that commercial distribution companies have to offer.

2.6 Banking and Project Finance. SARI/E countries have made slow progress to date in attracting and sustaining international private capital for energy sector infrastructure development. Compared to the total needs of the region, the number of projects brought to fruition and financial closure in South Asian countries and sectors has been negligible. Given the SARI region's overwhelming need for improving both the quantity and quality of its energy infrastructure services, there is an urgent need to address the factors that seem to impede greater private sector investment in infrastructure in the Region -- particularly from the perspective of potential private sector investors and financial institutions. Some of these barriers include: the ability and willingness of governments in the region to make serious and protracted commitments to private developers and institutions; government officials' lack of understanding of devastating impact that actions such as renegotiating tariffs, renegotiating the terms of security package contracts, and/or failing to honor project performance guarantees (public officials' appreciation for the sanctity of contracts); lack of well established policies and regulatory frameworks; frequent changes in political leadership and the political risk it poses; the lack of creditworthy project off-takers and participants and acceptable credit enhancement mechanisms to provide project security to investors and financiers; and the limited institutional capacity and experience with project finance. SARI/E initiative that are targeted

towards mitigating many of these barriers can have significant impact upon the construction of many new energy sector projects in the region.

2.7 Information Sharing. Beyond simply providing training programs and opportunities for institutional exchange, study tours, curriculum development, interviews with SARI/E stakeholders strongly pointed to the need for the building and sharing of common knowledge information across the region. Such an effort would include identifying existing databases and data on the energy sector, and consolidating and making it consistent for easier comparative analysis and sharing of learning experiences. An information sharing initiative could require the development of new databases, best practices, and the preparation of global experiences across the region. Prepared information could be accessible by a variety of stakeholders (such as media, consumer groups, educational institutions, non-profits) to use and interpret as necessary in developing plans, strategies, cases, etc. for their work. Enabling access to documented reliable, trustworthy, and neutral data resources would provide greater credibility and support to plans by regional developers. In addition, there is a need to share knowledge concerning successes stories, new technologies, and cost-effective programs across the region with groups that can disperse this knowledge effectively, such as the media and non-political nonprofits. The availability of neutral and accurate regional information would provide greater clarity and understanding to complex energy sector issues that often are the source of politically charged controversies delaying the construction of projects in many SARI/E countries.

2.8 Consumer Awareness. A regular topic of discussion during the TNA meetings was what was described as a “mentality” barrier, wherein the region’s consumers often share a common expectation that electricity should be provided as a public service at little or no cost to them. This barrier has obvious negative consequences towards ensuring the profitability of energy projects and towards efforts to attract new investment to the region. Subsequently, a critical need exists for consumers to understand that utilities must reciver costs and make a profit, the negative impacts of theft, and need for utilities to charge a tariff recovering the costs of production. Consumers also need to understand the benefits to be gained by the unbundling of assets and the restructuring of the electricity sector and its impacts upon improved efficiency and utility management. They will also need to know that the proper role of a regulatory body is to protect the interests of *both* the consumers and the regulated entity, as well as bringing cases to the regulatory boards and understanding their rights and opportunities for better quality technology and service. Consumers can also play an important role in driving the success of efficiency measures in the electricity sector by selecting products that reduce power consumption. Consumers must understand the importance of electricity to the region’s economic development. In order for this message to be spread effectively, NGOs and consumer interest groups may need to be educated so that consumers can constitute leading force, rather than an obstable, for reform in the region. In this regard, significant institutional capacity building is needed for such organizations to reach out to the region’s consumers.

2.9 Human Resource Development. Human resource issues in this context take into account the way in which institutions evaluate and build the capacity of their employees so as to ensure effective business operation and employee commitment to a high level of performance. Stakeholders across the region identified the low priority assigned by executives to capacity building as the main barrier to providing or expanding institutional employee training programs. Consequently, few resources are allocated for human resource development. In general, there is a

lack of business/corporate outlook and a managerial orientation amongst even the senior level executives in the energy entities. Human resource departments/programs are weak, are not closely aligned with the business goals and plans of the organization, and function mainly as administrative processing units for new or departing employees. There is a lack of career development mindset and initiatives for employees of energy entities, an absence of performance based management and advancement of employees. Those organizations that do offer some employee training still lack the experience in how to systematize existing training activities/ideas into a sustainable, productive program that promotes the development of employees.

3.0 Capacity Building Strategy for SARI/E

The training plan proposed in this report incorporates a strategy that seeks to maximize the impact of available funding through the creation of training and capacity building initiatives that are specifically targeted at the most pressing regional energy sector issues of SARI/E countries over the next two years. The plan emphasizes capacity building at local institutions that are likely to assume a lead role in tackling of challenges in the energy sector beyond the life of SARI/E project.

This strategy should be implemented in several steps. They are: (i) the identification of key SARI/E countries energy sector issues, (ii) the selection of those SARI/E energy sector issues that are important in a regional context, (iii) the selection of those issues that can be addressed through USAID training and capacity building activities or development interventions of choice, (iv) the identification of appropriate interventions capable of having maximum beneficial effects using available resources, (v) the identification of stakeholder groups and institutions that are most directly linked to problems or solutions associated with these regional energy issues, (vi) the careful selection and use of external resources, best practices, and case studies of lessons learned that can be used to contribute to these capacity building efforts, and (vii) an assessment of the last two years of SARI/E training activities so as to build upon these achievements and/or to provide further support as needed in the final selection of proposed activities. The plan is designed to be constructed on component building blocks, and it should also be flexible enough to respond to new priority issues as they arise throughout the life of the SARI/E II Project.

3.1 Maximizing Resources

Understanding the significant demand for technical assistance and training in the SARI/E region, it is important that the program prioritize the activities that it undertakes according to the greatest need for capacity building in areas where the SARI/E goals are best addressed. At the same time, there is an increased number and range of institutions targeted for capacity building, all of whom will play a critical role in guiding the transition of a their countries' energy sectors. Therefore, the TNA and capacity building strategy utilized here is to select priority capacity building activities that maximize the use local resources and institutions, build on existing coalitions and SARI/E achievements, improve links between regional institutions, and have the greatest potential for immediate results and long-term sustainability.

To increase the impact of these capacity building activities and to provide a greater likelihood of an immediate application new skills/knowledge and return on institutional investments, activities should be closely linked to associated technical assistance (TA) activities under the SARI/E program and the SARI/E Grants Management Program. In this way, resources utilized for those two related

programs can be leveraged for follow-on support in training/capacity building efforts, thereby greatly improving the chance of solidifying these concepts and practices into future programs of the institutions.

While long-term sustainability is a key objective, recommended activities are results oriented. They are also intended to provide momentum to those institutions involved with SARI/E activities to take increasing ownership of efforts to ensure the continuation of the program's objectives in the coming years.

3.2 Sustainability and the Role of Institutions

Sustainability has been a major focus of the TNA and institutional capacity building will play a major role in its success. The training plan recommends working closely with a variety of institutions including the TIPs to develop or revise new, high quality curricula and training materials. This approach will tap into on-going regional activities, improve the local content of courses, and ensure the applicability of SARI/E primary activities to local needs. In addition, local expertise will be drawn upon whenever possible to provide instruction and help develop materials, case studies, best practices, or play a role in collaborative activities between institutions. The plan recommends using external expertise primarily for quality control and global perspective, as needed.

USAID and the TNA team have identified local institutions that have already played a significant role in training and have established visibility in the SARI/E energy sector as potential parties to the SARI/E program. Focusing training and capacity building initiatives to strengthen these local institutions will leave lasting institutional capacities in the region that will be useful to, and sustained by, the institution itself. In most cases, this capacity may serve to grow the "business" of the institution, and ensure that the local institutions are in a better position to provide follow on support of the training activities. It will be important for the training plan to remain flexible enough to respond to needs for additional expertise identified throughout the project.

The type of recommended institutional capacity building activities that are recommended include:

- 1) Establishing cooperative partnerships between institutions located in different countries;
- 2) Developing resource centers of information and the capacity to market those resources effectively;
- 3) Developing materials (training curricula, case studies, best practices, resource links, etc); and
- 4) Increasing the capacity to draw on internet resources by providing access to portals, databanks or other information resources that can benefit the institutions goals that are in line with SARI/E.

The strategy is to develop a well-rounded capacity for institutions already playing a leading role (or those capable of playing a leading role), rather than simply providing training without subsequent support after the close of a training workshop when training participants return to their jobs. In a similar vein, longer-term training programs will be considered, which could include a one-year MBA program or a one-two year energy journalism-training program.

Training Institution Partners (TIPs)

The TNA team met with each TIP organization to discuss their involvement to date in the SARI/E program, their organization's objectives and activities, and the role that they envision playing the future with the SARI/E program. Clearly the Training Institution Partners (TIPs) will have a major role to play in ensuring SARI/E II sustainability. The training plan recommends their involvement

in a number of activities, beyond simply providing training sites. A sample of some of activities identified for and by the TIPs include, among others:

Table 1: Recommended Activities for Training Institution Partners (TIPs)

Country	TIP	Technical Area <i>(under SARI/E I)</i>	Preliminary Recommended Activities
Bangladesh	Bangladesh University of Engineering & Technology-Electrical Department (BUET)	Regional Interconnection	Serve as resource & training provider in technical issues related to interconnection in each capacity building module
Bangladesh	Rural Electrification Board (REB)	Rural Energy Supply	Regional Training Center for Rural Energy Issues (Beneficiary & Implementing Partner)
India	Administrative Staff College of India (ASCI)	Regulation & Restructuring Issues	Host Resource Center for Regional & International Experience in Electricity Regulation
India	BSES Limited	Distribution Reforms	Host Regional Forum on Distribution, Provide training & expertise in distribution reform, Implementing partner of regional utility partnership
India	IndianOil Institute of Petroleum Management	Oil and Gas Issues	Accept invitational travel participants to its on-going training activities; outreach and support to countries on petroleum sector management
Nepal	School of Environmental Management & Sustainable Development, Pokhara Univ.	Environmental Issues	Possible implementing partner or host for Media Capacity Building activities
Sri Lanka	Sri Lanka Energy Managers' Association (SLEMA)	Energy Efficiency	Co-Developing a Database of Regional Energy Efficiency Information
Sri Lanka	University of Moratuwa, Center for Energy	Project Finance, Legal & Contractual Issues	Consider revising technical area to energy efficiency and conduct activities/develop capacity in conjunction with SLEMA

In order to ensure that earmarked activities will be sustainable over the long term, it will be necessary to ensure that those activities are appropriate to the expertise of the implementing TIP. Without having access to the criteria and methodology used to select the current group of TIPs, the TNA team made some initial assessments about the TIPs' current involvement in SARI/E and their

potential for the future. These notes can be found in Attachment II, the detailed notes from meetings with TIPS. The training plan incorporates the TIPS as both beneficiaries and implementing partners. The TIPS will undoubtedly be a significant source of local expertise to develop and implement SARI/E activities.

Although the TIPS institutions have been involved in SARI/E to develop and implement regional-level activities, the TNA team noted that they have not incorporated the regional focus into their own organizations' activities. The recommended TIPS capacity building is intended to internalize and institutionalize a regional energy focus in their own objectives and activities. It is important that the message of regional cooperation be relayed to stakeholders not simply as the mission of the USAID SARI/E program, or other multilateral donor projects. Initiatives for regional cooperation, whether bilateral or multilateral, will have greater impact in the long run emanating from local opinion and expertise. For this reason, focusing on the sustainability of regional efforts through TIPS and other local institutions is particularly critical.

Opportunities should be sought for similarly interested institutions beyond the TIPS, to work together on cross border issues and complement each other's programs and/or help create new programs that may exist in one country but in another. Several institutions were identified that could play this type of role. They include the NEA and Panos South Asia of Nepal; the Power Management Institution of India and India's Institutes of Management and Technology; the Center for Management Development (CMD) of Bangladesh; and the Energy Forum of Sri Lanka. The idea would be to seek out existing, active institutions that can incorporate a regional angle in their agenda (or expand it if it already exists) rather than invest in activities that would involve creating entirely new entities.

3.3 Building on Previous Accomplishments

It is important to consider SARI/E training efforts to date so as to avoid unnecessary, repetitive investment in capacity building. For example, there has been significant work done to date on rural energy services by CORE International. CORE has implemented ten courses and/or study tours in each of the four countries visited by the TNA Team as well as Bhutan. Capacity building in second phase of SARI/E would be to build on previous success that CORE has had in this area, and to look for opportunities to utilize existing materials, expertise built-up by these recent efforts and to extend the reach of SARI/E to a larger group of stakeholders. This strategy would also recommend using "star" participants from previous activities (those participants who have been able to put SARI/E learning into practice) as resources persons for new activities, thereby reinforcing continuity and encouraging continued buy-in from their respective institutions.

4.0 Recommended Capacity Building and Training Plan

Cooperative training and capacity building for the energy sector focused on the areas of shared concern identified in the fieldwork is at the center of the recommended action plan. The underlying principle is that local institutions and expertise should be involved at all stages of the design and implementation of proposed activities. Cooperative can result in sustainable activity beyond the life of the project. In specific areas, the plan identifies prospective institutional partners, including TIPS institutions, external expert inputs and partnerships that may be required.

The plan described in Table 2 below, presents an integrated set of modules and activities, in two priority groups, based on the TNA team's judgment about the urgency of needs in the energy sector, and on the likelihood of demonstrable results. Table 3 illustrates an estimated timeline and budget for the recommended activities. However, some activities, such as institution building to strengthen long-term capacity in key areas such as energy sector regulation, distribution efficiency in the power sector, and improved utility management will require long-term financial and other support. The SARI/E project can play a catalytic role in creating the necessary foundation on which such support must rest (creating the appropriate institutional links, supporting planning forums and workshops etc., and providing support for prefeasibility/feasibility studies). The plan identifies specific objectives in each area, targeted beneficiaries and stakeholders, and a timeframe for implementation.

The activities proposed in each area consist of a combination of implementation modes. These include: short, medium and long term training programs, the design and development of information and training tools (data-bases, web-based resources materials, curricula etc.), forums, executive briefings, invitational travel, study tours and the creation of institutional partnerships.³

Each module is described in the sections that follow.

³ These are described in greater detail in the explanatory notes that accompany the Table.

Table 2: Recommended Capacity Building and Training Plan

Capacity Building/ Training Module	Objectives	Activities	Mode	Beneficiary Stakeholders	Implementing Partners	
1st Priority Group						
TC1 Leadership and Management Development	O1 Improve the leadership skills of top decision makers in the energy sector	A1 Leadership and Change Management for Executives & Senior Management	Executive Seminar	Policymakers, Public Utility Executives, participants in other related USAID programs (ex. DRUM)	Regional Power Executives (ie. Respected Ministers, etc.); Leadership Training Institutes (ex. CMD, Bangladesh)	
	O2 Improve the operational management capacities of mid-level managers in a restructured energy sector	A2 Annual or Semi-Annual Conference for Regional Utility Management	Conference	Public Utility Executives & Sr. Management, Media, Private Sector, NGO/Consumer Groups	Nepal Electricity Authority (NEA) Training Center, Kathmandu	
	O3 Improve the capability of senior managers and policymakers to plan for the restructuring and management of reorganized entities	A3 Regional Executive Masters of Business Administration (MBA) Program	Degree-Oriented Training Program	Public Utility/Institution Mid-Level Managers	Partnership between a U.S. and a local/regional accredited, academic institution	
	O4 Improve Efficiency of Electricity Distribution		A4 Utility and Change Management for Mid-Level Managers	Workshops (Series)	Public Utility Mid-Level Managers	Successful Regional DISCOs (BSES) and International DISCOs
			A5 Regional Utility Partnership/Exchange	Partnership/Exchange	Public Utility Mid-Level Managers	Regional Utilities
			A6 Improved Management Practices in Distribution Utilities	Workshop	Public & Private Utilities, Senior Executives	Successful Regional DISCOs (BSES) and International DISCOs
			A7 Distribution Operations and Loss Reduction	Workshop	Public & Private Utilities, Senior Executives	
			A8 Effective Management of a DISCO	Study Tour/Invitational Travel	Public & Private Utilities, Senior Executives	
			A9 Regional Forum on Distribution & Preparation of a Best Practices Guide	Forum & Materials Development	Public & Private Utilities, Senior Executives	

Capacity Building/ Training Module	Objectives	Activities	Mode	Beneficiary Stakeholders	Implementing Partners
TC2 Capacity Building for Regulatory Systems and Regional Markets	O1 Improve stakeholder understanding of the role of regulation in a restructured energy sector	A1 Role of Regulation and a Regulatory Body in a Restructured Energy Sector	Outreach Seminar	Media, NGOs, Private Sector, Financial Institutions, (all stakeholders)	Regional (Indian) Regulatory Agencies, International Regulatory Experts  Regional and International Grid Projects
	O2 Enable decision makers to create and staff an effective regulatory agency	A2 Creation, Operation and Management of a Regulatory Body	Workshops (series)	Public Institutions, Private Sector, Policy Makers, Financial Institutions	
	O3 Promote the creation of harmonized electricity regulation across the region	A3 Regulation Incentives for Private Participation and Cross Border Interconnection	Workshops (series)	Public Institutions, Private Sector, Policy Makers, Financial Institutions	
	O4 Promote the design of regional market structures to facilitate energy trade	A4 Assemble, Publish and Disseminate a guide to international experience in regional electricity market development	Best Practices Guide Development	All stakeholders	
		A5 Harmonizing Regional Electricity Transmission	Workshop, Study-Tour	Public Institutions, Private Sector, Policy Makers, Financial Institutions	
TC3 Improving Energy Project Finance & the Private Investment Climate	O1 Strengthen local financial institutions' ability to conduct and close energy transactions	A1 Introduction to Power Project Finance	Workshop	Local Financial Institutions w/o previous experience, Public Institutions	Chambers of Commerce
	O2 Improve public and private developers knowledge of & skills in financing process	A2 Advanced Topics in Energy Project Finance	Workshop, Internships	Local Financial Institutions with previous experience	South Asia Regional Energy Coalition (SAREC)
	O3 Attract Private Investment to Energy Infrastructure Development	A3 Developing Power Projects for Commercial Finance	Workshop	Public utilities, developers, media, NGOs	International Finance Institutions
	O4 Improve stakeholders understanding of energy project finance	A4 Development and Financing of Energy Efficiency Projects	Workshop (Web-based)	Local Financial Institutions, Public Institutions	Financial Associations: ex. FICCI
	O5 Improve policymaker's understanding of need for stable/predictable investment environment	A5 Development and Financing of Renewable Energy Projects	Workshops (Web-based)	Local Financial Institutions, Public Institutions	Indian banks, other experienced regional banks
		A6 Natural Gas Contract Negotiation	Workshop	Financial Institutions, Public Institutions, Gas Utilities	

Capacity Building/ Training Module	Objectives	Activities	Mode	Beneficiary Stakeholders	Implementing Partners
TC3 Improving Energy Project Finance... (cont.)		A7 Financing Cross Border Gas Pipelines Workshop A8 Pricing of Natural Gas for Export/Import A9 Negotiating International Gas Sales & Purchasing Contracts A10 Information Center for Energy Finance A11 Creating and Sustaining and Environment for Attracting Private Investment	Workshop Workshop Workshop Web-Based Resource Workshop	Local Financial Institutions, Public & Private Institutions, NGOs, etc. Policymakers, Public Utility Executives	
TC4 Media Capacity Building	O1 Formation of a core group of journalists/media representatives knowledgeable in energy issues O2 Increase the quality & quantity of reporting on energy issues O3 Improve media networks across the region	A1 Introduction to Energy Issues A2 Information Center for Energy Data and Resources for Media A3 Study tour for journalists to regional energy "hot spots" A4 Participation in other SARI/E module training workshops/outreach seminars	Workshop (Series, Web-based) Web-Based Forum Study Tour Invitational Travel	Local media organizations: editors (senior staff) and reporters (junior staff)	National Press Institutes Press Associations (regional and national): ex. Energy Forum (Hyderabad), PANOS South Asia (Kathmandu) International Forum of Environmental Journalists (IFEJ) <i>The key is to maximize the use of EXISTING networks</i>
2nd Priority Group TC5 Consumer Awareness Campaign	O1 Improve regional consumer understanding of key energy sector issues, including electricity pricing, real cost-of-service, regulation, the consumer-supplier relationship, and benefits of regional interconnection	A1 Developing and Conducting Consumer Awareness Campaigns and Activities in Energy Issues	Workshops	Local/regional NGOs and Consumer Advocacy organizations	Experienced U.S./International or regional organizations with a proven track record for consumer awareness building in energy

Capacity Building/ Training Module	Objectives	Activities	Mode	Beneficiary Stakeholders	Implementing Partners
TC5 Consumer Awareness Campaign <i>(cont.)</i>	O2 Develop the capacity of local NGOs and Consumer Groups to implement consumer education/advocacy campaigns in energy sector issues	A2 International Experience in Energy Consumer Awareness	Study Tour	Selected Local/regional NGOs and Consumer Advocacy organizations	↓
		A3 International and local/regional NGOs and Consumer Advocacy Organization Partnerships for on-going skill transfer	Partnership	Selected Local/regional NGOs and Consumer Advocacy organizations	
TC6 Rural Electricity Service Institution Building	O1 Build the capacity of a local/regional institution to provide high quality training in rural electricity supply issues to regional stakeholders	A1 Support to the REB for course development in providing rural electricity services	Curriculum Development	REB	REB and regional/international experts
	O2 Assist in improving rural electricity supply in the region	A2 Support to the REB in institutionalizing provision of training services to external clients as a sustainable center for training in the region	Business Strategy Development	REB, Regional RECs, NGOs, Public REB and regional/international experts Institutions, Private Sector	
	O3 Create and Increase Efficient and Sustainable Rural Electric Cooperatives	A3 Creating, Managing and Operating a Sustainable Rural Electric Entities	Workshops (series)	Regional RECs, NGOs, Public Institutions, Private Sector	REB and other experience RECs
	O4 Promote the rural electric cooperative and other alternative models (to centralized supply) for rural electrification	A4 Attracting Private Participation to the Distribution Sector	Workshop	Regional RECs, NGOs, Public Institutions, Private Sector, Financial Institutions	Regional DISCOs, Private Sector Entities
		A5 Successful Rural Electricity Delivery Projects and Models	Study Tour	Regional RECs, NGOs, Public Institutions, Private Sector, Financial Institutions	Regional rural electricity projects/companies
		A6 Managing Grid Maintenance in Rural Areas	Workshop	Regional RECs, Public Institutions/Utilities, Private Sector	Regional Utilities, International Experts

Capacity Building/ Training Module	Objectives	Activities	Mode	Beneficiary Stakeholders	Implementing Partners
TC7 Human Resource Development for Energy Utilities	O1 Define a constructive role, structure and function of Human Resource departments in energy sector entities	A1 Designing, Operating and Managing an Effective Human Resources Development Program	Workshop (repeated)	Public Institutions (Utilities & Agencies), Private Sector, NGO/Consumer Groups (Sr. Executives and Senior Human Resource/Training Managers)	Regional organizations experienced in energy sector human resource training (ex. ASCI, Hyderabad; CMD, Dhaka; and others)
	O2 Systematize utilities' approach to staff training and institutionalize existing programs	A2 Developing In-House Training Capacity	Workshop, Web-Based resources	↓	↓
	O3 Integrate self-sustaining techniques into organizational training plans.				
TC 8 Regional Energy Efficiency Support/Initiative	O1 Develop local institutions' regional energy efficiency training & data resources	A1 Development of energy efficiency database structure and web-based operation	Web-Based Resource Development	NGO/Consumer Organization or Academic Institution (same as the Implementing Partner)	Local/Regional Energy Efficiency Organization (NGO or Academic)
	O2 Encourage the collaboration of energy efficiency-related organizations within the region	A2 Collection and input of data in collaboration with regional energy efficiency organizations	Web-Based Resource Development	All stakeholders - esp. NGO/Consumer Groups, Media	Local/Regional Energy Efficiency Organizations (ex. SLEMA (SL), Univ. of Moratuwa (SL), BEE (India), Public Utilities)
	O3 Facilitate continued support between organizations for energy efficiency labeling program	A3 Assist organizations in the revision and updating of existing training curricula & regional access to curricula	Curriculum Development	NGO/Consumer Organizations, Academic Institutions (current training providers, same as the Implementing Partner)	NGO/Consumer Organizations, Academic Institutions (current training providers, same as the Implementing Partner)
	O4 Promote energy efficiency projects in commercial and industrial activities, particularly in increased use of efficient equipment.	A4 Facilitate travel and/or communication support between energy efficiency labeling organizations upon request, as follow-on to SARI/E I Energy Efficiency Labeling program	Invitational Travel	Public Institutions (Energy organizations tasked with the development & implementation of energy efficiency labels)	Public Institutions (Energy organizations tasked with the development & implementation of energy efficiency labels - ex. CEB (SL) and implementing agency in Nepal)

Capacity Building/ Training Module	Objectives	Activities	Mode	Beneficiary Stakeholders	Implementing Partners
	O5 Harmonize energy efficiency standards across the region to promote increased trade in efficient products and equipment.	A5 Designing a National Energy Efficiency Strategy	Workshop	All Stakeholders	Regional and International Policymakers, Public Institutions, NGOs
	O6 Reduce barriers to regional trade in energy efficient products and equipment.	A6 Policy Incentives to Encourage Market-Based Energy Efficiency Initiatives	Workshop	All Stakeholders	Regional and International Policymakers, Public Institutions, NGOs

Table 3: Estimated Capacity Building Timeline and Budget⁴

Capacity Building Module	Year One				Year Two				Estimated Cost (\$K)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	
TC1 Leadership and Management Development									
A1			?				?		60
A2					?			?	60
A3								→	500
A4		?					?		100
A5					?			?	120
A6			?			?			60
A7		?							60
A8				?					60
Module Subtotal									\$1,020
TC2 Capacity Building for Regulatory Systems and Regional Markets									
A1		?							30
A2				?			?		100
A3					?			?	100
A4			?						60
A5			?						100
Module Subtotal									\$390
TC3 Improving Energy Project Finance									
A1		?							60
A2				?					100
A3						?			60
A4									60
A5					?				60
A6							?		60
A7				?					60
A8					?				60
A9						?			60
A10								?	60
A11		?							60
Module Subtotal									\$700

⁴ Budget estimates include training and venue costs only. Estimates *do not* include participant travel and maintenance costs.

Capacity Building Module	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Estimated Cost (\$K)
TC4 Media Capacity Building									
A1		?				?			120
A2				?			?		50
A3									60
A4									50
<i>Module Subtotal</i>									<i>\$280</i>
TC5 Consumer Awareness Campaign									
A1				?		?			120
A2									50
A3			?		?				50
<i>Module Subtotal</i>									<i>\$220</i>
TC6 Rural Electricity Service Institution Building									
A1		?							50
A2			?						50
A3				?		?			120
A4					?				60
A5						?			50
A6							?		50
<i>Module Subtotal</i>									<i>\$380</i>
TC7 Human Resource Development for Energy Utilities									
A1			?			?			120
A2					?				50
A3				?			?		50
<i>Module Subtotal</i>									<i>\$220</i>
TC8 Regional Energy Efficiency Support/Initiative									
A1		?							50
A2			?						50
A3									50
A4				?					60
A5					?				60
A6							?		60
<i>Module Subtotal</i>									<i>\$330</i>
Estimated Total Budget for Recommended Plan									\$3,540

4.1 (TC1) Leadership and Management Development

Change Management is a term that refers to the task of managing change, within and outside of any given organization. In the case of the SARI/E countries, public utility executives will need to manage the change of restructuring the electricity, gas, and oil sectors in different countries as well as manage the operations of the resulting, newly-created organizations. It is important that the training of executives to manage these changes is performed in a planned and systematic fashion, so as to ensure the effective running and operation of the business entities resulting from the sector restructurings. This training must focus on the effective implementation of new methods and systems, managing the business in a competitive environment, and ensuring that the business is run profitably. Not only do executives need to create a strategy for change, but they also need to effectively communicate that plan to employees and other stakeholders. The proposed training in Change Management teaches participants to prepare for, manage and reinforce change – not just from the economic or business perspective, but also managing the cultural or human side of change.

Change management training will need to be implemented at two different levels, for very senior policy makers and politicians as well as for the executive and management levels of the restructured entities. Change management training for very senior policy makers and politicians is important to regional energy trade across the SARI region because it is the delay and unwillingness of high-ranking officials and politicians to make decisions on large projects and/or investments that prevents the projects from becoming a reality in the short-term. These delays are particularly evident in decisions about projects which could be highly beneficial to the region but whose benefits may not be recognized until far into the future. In several cases (such as the “Four Borders” interconnection project and gas trade between Bangladesh and India), projects are viable and beneficial, but have been delayed or stalled for lack of a “champion” to promote them or executives or policymakers who are unable/unwilling to take a stand in support of regional energy cooperation for fear of political repercussions.

Since SARI/E countries have legislated much needed reform and restructuring for the countries’ energy sectors (primarily electricity sector restructuring, but also in oil and gas), the training of executives and middle-managers of the restructured entities will also be critical to ensure that the restructured companies are run efficiently and profitably. During recent interviews, stakeholders overwhelmingly agreed that executives and operational managers (upper and middle management) of existing publicly-owned entities lack the capacity to carry out the transition from government-run companies to restructured companies that will be expected to be consumer-sensitive and well-managed. Current management techniques will be inadequate to handle the new organizational structures. New management tools will be needed to ensure the success of the separated business units anticipated in generation and distribution activities. The proper implementation of restructuring and subsequent sector management is critical to the long-term growth and health of energy infrastructure and service delivery, regional interconnection and trade, and the participation of the private sector – key goals of the SARI/E program on the whole.

To address this need for effective leadership and operational management skills, this TNA recommends the following integrated set of activities that reaches all levels of utility management as well as high-level executives. This series incorporates short-term capacity building activities to support current managers and leaders, and long-term initiatives to fully equip the next generation of energy sector leaders with the knowledge and skills necessary to operate on a regional level.

Improving Electricity Distribution

The need to restructure the power sector into ‘unbundled’ functional segments, as a prerequisite for reform and competitive markets, has brought the importance of efficient power distribution into sharp focus. Widespread neglect of distribution infrastructure has resulted in shared problems in most SARI/E countries. Irrespective of progress towards unbundling utility operations these problems need to be addressed urgently as a prerequisite for a more efficient and cost-effective electricity sector. Most important among these are poor service quality, unreliability, and high levels of system-wide technical and commercial losses, resulting a heavy financial burden at the national and provincial levels. Furthermore, it is recognized that improving electricity distribution is a prerequisite to attracting private investment in the sector. This shared experience among SARI/E countries justifies cooperative training and capacity building to improve skills at all levels of distribution management and operation.

Some countries have embarked on efforts to improve management and operations capacity for power distribution (noted in Bangladesh, India and Nepal). Distribution entities and power sector training institutions (such as BSES, and PMI, in India, and REB in Bangladesh) have established training programs. Potential mechanisms for cooperation among specific institutions exist to share instructional materials and faculty, develop utility partnerships, organize study tours within the region. Establishment of a regional Forum for Distribution Management can provide an effective mechanism for concerted efforts to exchange experience and disseminate improved practices. The bi-lateral USAID program in India currently supports the development of training and capacity building through curriculum development and the conduct of short training courses. This program can offer both an opportunity for sharing materials and through invitational travel under SARI/E accept regional participants in selected programs.

- Management training in several areas, including: organizational change management, asset management, standardization in equipment selection, commercial operation, management principles, including human resource management, application of integrated management information systems, and revenue management.
- Improving the skills at all operational levels of distribution entities focusing on loss reduction, capacity expansion planning, maintenance, and fault detection.
- Customer service, metering, billing, and collection.
- Rural energy distribution.

4.1.1 Objectives:

- (O1) Improve the leadership skills of top decision makers in the energy sector
- (O2) Improve the operational management capacities of mid-level managers in a restructured energy sector
- (O3) Improve the capability of senior managers and policymakers to plan for the restructuring and management of reorganized entities
- (O4) Improve Efficiency of Electricity Distribution

4.1.2 Activities:

- (A1) Leadership and Change Management for Executives & Senior Management (Executive Seminar)

- (A2) Annual or Semi-Annual Forum for Regional Utility Management (Conference/Forum)
- (A3) Regional Executive Masters of Business Administration (EMBA) Program (Degree-Oriented Training Program)
- (A4) Utility and Change Management for Mid-Level Managers (Workshops - Series)
- (A5) Regional Utility Partnership/Exchange (Partnership/Exchange)
- (A6) Improved Management Practices in Distribution Utilities (Workshop)
- (A7) Distribution Operations Distribution Loss Reduction (Workshop)
- (A8) Effective Management of a DISCO (Workshop)
- (A9) Regional Forum on Distribution & Preparation of a Best Practices Guide (coordinated with India DRUM program) (On-going Forum Group, Curriculum/Materials Development)

4.1.3 *Beneficiaries:*

The target audience for A1 is comprised of national and provincial level policy makers and senior utility executives. Activities A2, A6-A8 are intended to be for public utility executives and senior management. A2 will involve the representation from the media, private sector and NGOs/consumer groups. Activities A3 and A4 are intended for mid-level managers in public utilities and public energy institutions (ie. mid-level ministry or regulatory agency staff). The utility partnerships (A5) are recommended to connect the managers of various functional areas within the utility.

4.1.4 *Potential Implementing Partners:*

Regional Power Executives (ie. Respected Ministers, etc.); Leadership Training Institutes (ex. CMD, Bangladesh); Nepal Electricity Authority (NEA) Training Center, Kathmandu; Partnership between a U.S. and a local/regional accredited, academic institution; Regional Utilities, such as the BSES Training Institute.

4.2 (TC2) Capacity Building for Regulatory Systems and Market Design

Most countries surveyed in the SARI region identified the urgent need to regulatory reform as part of the effort to restructure the energy sector. In general, there is an awareness that competitive market structures are likely to deliver greater efficiency in the energy sector, which has, in all SARI/E countries been dominated by state owned and operated enterprises. There are, however, differences in economic size, geography, resource endowments, and political arrangements among SARI/E countries and in the approach in the content, and the priorities of the restructuring agenda. Nonetheless, in all countries visited by the TNA team common themes for capacity building are evident. Developing a common understanding of alternative approaches to restructuring the power sector, and the oil and gas sectors can improve the prospects for harmonizing regulatory structures in specific areas that can enhance the prospects for energy exchange and trade in the future.. (Electricity transmission is a case in point.)

As governments in the region establish independent regulatory regimes, they face certain common problems. At the policy-making level, there is insufficient familiarity with the importance of establishing clear objectives for the national regulatory agenda and alternative regulatory models. At the operational level of regulatory bodies, organizational functions including staffing needs and necessary technical skills to manage regulatory operations are not well understood.

Regional capacity building for high-level policymakers can serve to bridge the first of these gaps. Cooperation among countries to develop and disseminate overviews of regional and international best practices can also be useful in creating a common knowledge base for national policy-making. SARI/E could coordinate with the effort to draft regulatory guide already underway in India, where the experience of various states is being summarized and documented by the NGO community, in some cases, with the support and cooperation of the regulators. Such guides that illustrate lessons learned and emerging best practices in regulatory operations are a cost-effective method to help fill regional knowledge gaps and shortcomings. SARI/E can also advance the longer-term objective of the design of a regional market by facilitating a common understanding of the prerequisites needed develop and implement new market structures.

Capacity building activities are recommended in the following areas:

- Rationalizing tariffs, including implementation issues related to ‘cost of service’ approaches, and multi-year rate-making, life-line rates, subsidies and cross-subsidies
- Implementation of Integrated Resource Planning, and ‘Public-purpose’ programs (load research, energy efficiency and demand-side management)
- Commercial, technical, and legal aspects of wholesale competition, including the operation of regional power pools, “open access”, the development of spot markets and exchanges.

Oil and Gas Sector Restructuring

Bangladesh and recently India are the only countries with significant gas reserves in the SARI countries. Bangladesh has a sizeable gas transmission and distribution network and an umbrella organization, Petrobangla, which runs the gas sector as a vertically integrated operation. Like most large public sector organizations in the energy sector, Petrobangla is not efficiently managed because of its large size and bureaucratic culture, excessive centralization and government as well as political interference. For these reasons, the Government of Bangladesh is in the process of unbundling

Petrobangla into a number of genuinely autonomous companies each with its own board of directors.

Unbundling and corporatization of large, state-owned oil and gas entities into smaller, more manageable units can yield many positive results. However, such results can only be realized if the unbundling is carried out properly and the new unbundled entities have real autonomy and management. There is a definite need educate the senior energy ministry officials as well as the senior executives of the integrated gas company about all the key issues related to the unbundling process, such as creation of effective management structures for the unbundled entities, creation of new profit centers in the unbundled entities, establishment of new management information systems (MIS), transfer of labor from the parent company to the unbundled entities, managing new relationships among the new elements of the formerly integrated gas system, balance between operational independence, autonomy and centralized control, and improved customer service. This TNA addresses such management issues under the Leadership and Management Development portion of capacity building recommendations.

There is often a need in a number of highly technical subject areas on both the upstream and downstream sides of a gas system to provide state of the art training to the practicing professionals, particularly those working in the public sector entities. They can benefit significantly through exposures to modern developments in their spheres of work. This can cover topics from reserve estimation to reservoir management to pipeline design and operations. This TNA, however, did not discern these highly technical topics as relevant regional capacity building needs at this time.

4.2.1 Objectives:

- (O1) Improve stakeholder understanding of the role of regulation in a restructured energy sector
- (O2) Enable decision makers to create and staff an effective regulatory agency
- (O3) Promote the creation of harmonized electricity regulation across the region
- (O4) Promote the design of regional market structures to facilitate energy trade

6.2.1 Activities

- (A1) Role of Regulation and a Regulatory Body in a Restructured Energy Sector (Outreach Seminar)
- (A2) Creation, Operation and Management of a Regulatory Body (Workshop, series)
 - (A2.1) Implementing Regulatory Reform
 - (A2.2) Electricity Rate Setting and Tariff Design
 - (A2.3) Consumer Advocacy
 - (A2.4) Judiciary Aspects
- (A3) Regulation Incentives for Private Participation and Cross Border Interconnection (Workshop, series)
- (A4) Assemble, Publish and Disseminate a guide to international experience in regional electricity market development (Curriculum/Materials Development)
- (A5) Harmonizing Regional Electricity Transmission (Workshop, Study Tour, Establishing a Regional Forum on Transmission)

4.2.3 Beneficiaries:

Activity A1 is designed particularly non-regulatory stakeholders, however it will benefit all stakeholders who need to understand the most basic tenets of electricity regulation and its impact on the sector. The balance of the activities are intended to most benefit the existing or potential regulators and staff of regulatory agencies, and those who are in the process of making the decisions about how to create future regulatory bodies.

4.2.4 Potential Implementing Partners:

Implementing partners will be those regional regulatory agencies that have lessons in regulation to contribute, and international experts who can provide a variety of perspectives and models to the regional audience – with the goal of promoting regulatory and market systems capable of interacting across national boundaries.

4.3 (TC3) Improving Energy Project Finance and the Private Investment Climate

Successfully attracting private sector investment and financing for projects in the SARI region is an essential element of a strategy to sustain future growth. The investment and financing required by SARI countries for the construction of future energy sector, distribution, generation, rural energy, and energy efficiency projects will range in the hundreds of billion US dollars over the next decade. Because of budgetary constraints and other important social priorities, SARI governments will need to attract private sector investment and finance in order to construct these projects. Thus, developing a strong regional capacity to finance projects and to improve the environment surrounding investment in a way that provides adequate comfort to private sector investors and lenders should become critical elements for SARI program activities over the next several years.

An important concern to potential investors and lenders considering investment in the region is the ability and willingness of regional governments to make serious and protracted commitments to attracting private investments in energy infrastructure. In the past, SARI countries have had a mixed record of providing policy frameworks and political support to initiatives that are conducive to private investment in infrastructure. Political leaders and key policy makers in all four countries appear to want to attract international investment in infrastructure; however, in practice the processes of inviting, negotiating and recruiting foreign investors has often been tainted with indecision, resistance from vested interest groups, and even policy reversals, which in turn, have provided conflicting and negative signals to prospective project developers.

Investors and bankers are highly skeptical about the lack of appreciation that many public officials appear to have for the sanctity of contracts, and they cite numerous examples of how governments often “move the goal posts” after contracts are signed. They are concerned that government officials seem unable at times to understand the loss of credibility that occurs (in the eyes of private investors and bankers) when public agencies routinely fail to carry through on high-level commitments to implement priority projects, attempt to renegotiate tariffs⁵, modify signed security package contracts, and/or fail to honor signed project performance guarantees. In addition, the absence of well established policies and regulatory frameworks and the tendency of new, incoming governments to question or change contracts signed by the outgoing regimes send strong signals to investors from SARI governments that South Asia is an unstable region for investment.

Another major concern and barrier to project finance has been the lack of creditworthy project off-takers and participants, and acceptable credit enhancement mechanisms, critical to providing adequate security to project investors and financiers. This lack of creditworthy entities, and the poor creditworthiness of State Electricity Boards and other off-takers, has been particularly evident in the promotion of potential generation projects in India. Officials in each country, however, do recognize this problem, and they are attempting to correct it through ongoing efforts to restructure and reorganize their electricity sectors.

⁵ In India, for example, Enron’s much publicized experience in having to re-negotiate the Dabhol Power Project with the newly elected Maharashtra State Government is an interesting case in point. Regardless of an ultimate determination of the relative attractiveness or disadvantages of the project, the attempt to renegotiate the tariff and project agreements and the failure to honor guarantee commitments (of that and other projects) sent an extremely negative message to other investors and bankers about doing business in India that should severely constrain future investments in the country at least in the near future.

Finally, the limited capacity and experience of financial institutions with project finance has also been an impediment to investment and financial closure of projects in the region in two ways. First, many decision-makers of public government agencies in SARI countries have limited legal, financial and managerial capabilities with which to expeditiously and successfully conduct due diligence, assess risks, negotiate agreements, assess tariffs, and evaluate proposals of projects being proposed to them. Since inexperienced officials tend to avoid making decisions on projects that they do not fully comprehend, their lack of understanding may result in significant delays in projects getting developed, financed, and constructed. Thus, there should be training and outreach programs for officials and politicians about the need for a stable investment environment and the requirements for project financings. Second, whereas the project finance experience and capacity of many local and regional banks⁶ to carefully understand and analyze technical project elements, negotiate project agreements, and prepare appropriate documentation for financial closure is limited, the local banks' ability to provide or participate in the funding of more energy infrastructure projects in the region at terms and rates necessary to make the projects successful is greatly constrained.

The training being proposed for SARI/E II recognizes that there are differences in the constraints being faced by different banks and local lending institutions in different SARI countries. The constraints reflect the fact that staff members in some banks have successfully undergone some financial training and, subsequently in some cases, the banks have had experience in participating as a lead or a syndication bank in previous energy infrastructure transactions in the region. It also recognizes that other banks exist that have had very limited or no previous experience in infrastructure project financings but who are capable of playing an active or syndication role in financing future projects. Each type of bank is critical to the financing of future SARI region projects, and each type of financial institution faces distinctly different barriers and needs that require different training emphases. These barriers are summarized in the following table:

	<i>Inexperienced Banks</i>	<i>Experienced Banks</i>
Barriers	<ul style="list-style-type: none"> • Lack of skills in project due diligence and financial modeling of energy sector projects • Lack of skills in project versus corporate finance and in the financial closure process • Lack of understanding of, and experience in negotiating, security package documents and in understanding project risks • Lack of understanding of the project development process • Barriers as encountered by Experienced Banks (listed in next column) 	<ul style="list-style-type: none"> • Lack of detailed knowledge of 1) terms and skills in negotiating final project contracts, 2) preparing full financial documentation for financial closure of projects, 3) specific energy technologies, 4) risk mitigation/ credit enhancement mechanisms, 5) experience in larger-scale projects • Insufficient availability and inadequate terms of local funding for certain technologies • Lack of experience in understanding financing standards and practices used in successfully closed projects regionally and internationally • Lack of knowledge dealing with bi- and multi-lateral FIs as participants in the final financing packages

⁶ Primarily in Sri Lanka, Nepal, and Bangladesh.

4.3.1 Objectives:

- (O1) Strengthen local financial institutions' ability to conduct and close energy transactions
- (O2) Improve public and private developers knowledge of & skills in financing process
- (O3) Attract private investment to energy infrastructure development
- (O4) Improve stakeholders understanding of energy project finance
- (O5) Improve policymaker's understanding of need for stable/predictable investment environment

4.3.2 Activities:

Power Sector

- (A1) Introduction to Power Project Finance (Workshop)
- (A2) Advanced Topics in Energy Project Finance (Workshop, Internships)
- (A3) Developing Power Projects for Commercial Finance (Workshop)
- (A4) Development and Financing of Energy Efficiency Projects (Web-based Workshop)
- (A5) Development and Financing of Renewable Energy Projects (Web-based Workshop)

Gas Sector

- (A6) Natural Gas Contract Negotiation (Workshop)
- (A7) Financing Cross Border Gas Pipelines (Workshop)
- (A8) Pricing of Natural Gas for Export/Import (Workshop)
- (A9) Negotiating International Gas Sales & Purchasing Contracts (Workshop)

Cross Sector

- (A10) Information Center for Energy Finance (Web Resource)
- (A11) Creating and Sustaining an Environment for Attracting Private Investment (Workshop)

4.3.3 Beneficiaries:

The primary beneficiary group for this module is local financial institutions, although participants with varying levels of experience are targeted for introductory versus advanced training. Other stakeholder groups, including public institutions, the media, and NGOs will also benefit from introductory energy finance training, such as activities A1, A5, A6 and A7. A3 is particularly designed for potential project developers in both the public and private sectors, including NGOs and consumer groups.

Capacity building for local banks will ensure that commercial and regional development bankers will be equipped with the skills necessary to evaluate, understand, and close financing for the large number of energy sector projects that will be critical to SARI region's development.

Capacity building for other stakeholders, depending on the stakeholder group, will help to develop the same skills as proposed for the banks, but likely on a more general level. Activities will also focus on awareness building and information-dissemination to answer common questions and to enable these stakeholder groups to better understand the financing needs and requirements of energy development projects. This level of financial capacity building is particularly important to help eliminate the public resistance obstacles that SARI may encounter; obstacles which have caused the delay or termination of projects

in the past. Some of the previous opposition was related to aspects of projects that were simply required by the institutions providing the project finance. Training will be designed to address issues that will help to mitigate local objections to projects that founded in a lack of information, mis-information, and/or “NIMBYism” amongst the various stakeholder groups.

4.3.4 Potential Implementing Partners

International and Multinational banks and lending agencies. Regional private sector institutions, such as IDFC (India) and HNB (Sri Lanka), will be able to contribute to the introductory-level workshops. Other regional organizations that have expressed interest in supporting this type of capacity building include financial associations, such as FICCI in India, and the Chambers of Commerce. The South Asia Regional Energy Coalition (SAREC) may also be able to play a supportive role in this module.

4.4 (TC4) Media Capacity Building

One of the greatest obstacles preventing the development and construction of needed additional energy projects -- in the SARI region as well as internationally -- is the lack of public knowledge and awareness regarding the many detailed requirements necessary to develop, finance, and construct energy projects. Public opposition to projects has delayed and/or stalled many projects in South Asia and internationally, not because of the weaknesses or failures of the proposed projects, but simply because of public misunderstandings or misinformation that has been distributed regarding the merits of the projects, typically through representatives of the media. These misunderstandings and misinformation may occur as a result the lack of accurate information, honest misunderstandings, and/or the intentional distribution of misinformation. Despite the cause, a country's media has a very influential role upon forming the opinions of the public, policymakers, and government officials, and subsequently, it can have significant influence on the eventual success or failure of proposed energy sector projects.

Now that SARI/E countries are in the process of developing and restructuring their energy sectors, it is critical that the media, and subsequently, consumers who are influenced by the media be well-informed on issues and realities relating to the energy sector, including topics such as sector restructuring, the project development process, the process of tariff setting, determining the cost of service, investment requirements, amongst others. Whether the media fully grasps these and other subject matters relating to energy sector trade and development will directly impact the direction of the region's energy development, distribution, and its ability to sustain the growth necessary to meet rising demand.

Media capacity building will increase awareness of energy sector issues within the region. Increased awareness and open information exchange will also promote transparency and accountability in governance and corporate operations, sound regulatory policies, and other aspects of public participation in local and regional governance, thereby protecting consumer interests. To bring about effective stakeholder participation in regional energy sector development, it is vital to provide balanced, unbiased and substantiated information to the public. Given access to information about energy-related choices, citizens thereby will be in a stronger position to contribute towards developing a sustainable, regional energy sector that is powered by clean, reliable and reasonably priced energy.

Given that only the narrow range of "hot" stories make it to be published as "news", a journalist's awareness of the issues at stake, relevant sources of information and how it can be presented to public has a substantial impact on the effectiveness of reporting. A tremendous opportunity exists to build upon the networks that currently exist, expanding upon them in a strategic manner so as to benefit from a range of organizations. The leveraging potential is high but must be coordinated with the various partners already working in the energy sector. This module has therefore been designed to provide a more coordinated and strategic approach to increasing awareness of environmental journalists on regional issues by building on the expertise and partnering with the various organizations already in the field.

This module aims to strengthen the knowledge of journalists on regional energy issues and to provide practical information on how to access reliable and objective information concerning regional and global energy issues so as to provide increased and accurate reporting of the regional

energy sector. This module will also aim to promote the existing networks of journalists, rather than creating new networks that strain already limited finances and limits their long-term viability.

4.4.1 Objectives:

- (O1) Formation of a core group of journalists/media representatives knowledgeable in energy issues
- (O2) Increase the quality & quantity of reporting on energy issues
- (O3) Improve media networks across the region

4.4.2 Activities:

- (A1) Introduction to Energy Issues (Workshops, potentially web-based)
- (A2) Information Center for Energy Data and Resources for Media (Web-based Resource)
- (A3) Study tour for journalists to noteworthy/controversial regional energy projects (Study Tour)
- (A4) Participation in other SARI/E module training workshops/outreach seminars (Invitational Travel)

4.4.3 Beneficiaries:

Local radio and print media organizations, a selected group of senior (editors) and junior (reporters) staff.

4.4.4 Potential Implementing Partners:

A range of organizations currently provides some level of energy awareness to journalists in the region and could serve as implementing partners of this module. Local partners could include the National Press Institutes (located in each SARI/E country); regional media associations (International Federation of Environmental Journalists⁷), including PANOS South Asia (Katmandu) and the Energy Forum (Hyderabad); and local newspapers and radio organizations. In addition, the network of journalists created thus far by the SARI/E journalism partnership program (administered by USEA), will be a valuable resource through which to identify additional partners and participants.

The Asia Pacific Forum of Environmental Journalists (APFEJ) based in Sri Lanka has administered the environmental-journalists “e-group”: promoting education, understanding and awareness of the environment through the honest and accurate reporting of local, regional and international environmental and development issues. The International Institute for Journalism (IJ) of the Deutsche Stiftung für internationale Entwicklung (DSE) has been providing advanced technical training for newspaper and agency journalists from the developing countries of Asia, Africa and Latin America since 1997. The Centre for Development Communication (CDC), based in Washington DC, is another specialized agency in communication training for technical staff as well as for the media and for spokespersons or decision-makers.

⁷ The International Federation of Environmental Journalists (IFEJ) has carried out training to journalists in some activities. The organization holds annual meetings for environmental journalists and publishes a quarterly newsletter, "The Planet's Voice" and a system of tip-sheets of international environmental news ideas for journalists through the Internet.

4.5 (TC5) Consumer Awareness Campaign

The Consumer Awareness module seeks to address the lack of public awareness of critical energy sector issues (which was also raised in *(TC4) Media Capacity Building*) by promoting the institutional development of local and regional NGOs and consumer-oriented organizations as potential “change agents”. Although there are organizations in the region that have been established to promote sustainable energy development as a means of seeking positive economic growth and higher standards of living, these organizations often lack the skills and experience to design and run public awareness campaigns in support of these objectives. Conversely, there is significant international experience and expertise in this area. Thus, rather than conducting the consumer awareness activities directly, USAID would use its resources and contacts with many of these organizations with international experience to improve the capacity of the locally-based organizations to do the same. Local organizations are emphasized both because they are sustainable and because messages that come from independent local sources are likely to have greater influence, validity, and impact on local public opinion than messages from international NGOs. This local institutional buy-in to the need to educate consumers on critical energy reform issues, as described in SARI/E Social Marketing Program (SMP), would include the customer-supplier relationship, real cost of electricity service, economic benefits of regional energy trade, amongst other topics, and it would be important in terms of establishing a stakeholder base of support for such reforms.

The key to the success of this module will be to select beneficiary and partner organizations whose mission coincides with the specific, targeted objectives of the SARI/E program. By conducting training and creating long-term partnerships between these organizations, capacity to support regional energy cooperation, increased trade and responsible private participation will be increased amongst non-traditional stakeholder groups.

4.5.1 Objectives:

- (O1) Improve regional consumer understanding of key energy sector issues, including electricity pricing, real cost-of-service, regulation, the consumer-supplier relationship, and benefits of regional interconnection
- (O2) Develop the capacity of local NGOs and Consumer Groups to implement consumer education/advocacy campaigns in energy sector issues

4.5.2 Activities:

- (A1) Developing and Conducting Consumer Awareness Campaigns and Activities in Energy Issues (Workshop)
- (A2) International Experience in Energy Consumer Awareness (Study Tour)
- (A3) International and local/regional NGOs and Consumer Advocacy Organization Partnerships for on-going skill transfer (Partnership)

4.5.3 Beneficiaries:

Selected Local/regional NGOs and Consumer Advocacy organizations

4.5.4 Potential Implementing Partners:

Experienced U.S. and International or regional organizations with a proven track record for consumer awareness building in energy.

4.6 (TC6) Rural Electricity Service Institution Building

Rural electric cooperatives (RECs) have become an important vehicle for providing electricity to large segments of the population in SARI/E countries, where only small percentages of the general population in those countries are connected to the electric grid (eg. Only 30% in Bangladesh and 16% in Nepal). RECs have been effective, feasible alternatives for rural populations to receiving power from mis-managed state-owned electric utilities. They are unique in ownership structure, as a consumer-owned entity, which allows for business to be guided by a set of principles in which the members control decisions relating to the provision of their electric services.

The SARI/E region is fortunate in that it has one of the best examples of a successful rural electric cooperative system in the world, outside of the United States. Bangladesh's Rural Electric Board has established 67 cooperatives of which 57 of these are operational. This system provides service to about 20 million people in rural areas, and they are establishing 390,000 new connections annually, averaging more than 1,000 per day of new installations. Total investment in the program has exceeded \$1 billion with support from more than 15 donor agencies/countries, as well as \$70 million from the Bangladesh government. The program has addressed and overcome a range of extremely difficult problems associated with poor load density, low revenues, and high losses in take-over areas. The Bangladesh REC system works so well that it has become recognized as a model of efficient performance in the SARI/E region particularly in light of the overwhelming problems that are typically encountered in providing rural electric service.

The Bangladesh REB, a SARI/E TIP, could serve as a good model for other countries to emulate and could provide training to professionals in other parts of the region on good practices in rural electricity supply⁸. Despite its relative success, however, officials in REB recognize the continued need for training and extension services to further improve REC operations in Bangladesh (and elsewhere in the region), with the goal of enabling them to become efficient and fully self-sustaining entities over time. The series of capacity building activities below are designed to assist the REB in becoming a center of excellence in the region, to develop curriculum, materials and training strategies, and to serve as a major training provider to other organizations.

4.6.1 Objectives:

- (O1) Build the capacity of a local/regional institution to provide high quality training in rural electricity supply issues to regional stakeholders
- (O2) Assist in improving rural electricity supply in the region
- (O3) Create and Increase Efficient and Sustainable Rural Electric Cooperatives
- (O4) Promote the rural electric cooperative and other alternative models (to centralized supply) for rural electrification

⁸ These recommendations assume that a study to determine the feasibility of establishing REB as a regional center for excellence and training in rural electrification (as prescribed in the SARI/E II RFP) has been completed and confirms its viability as such a center.

4.6.2 Activities:

- (A1) Support to the REB for course development related to the provision of rural electricity services (Curriculum/Materials Development)
- (A2) Support to the REB in developing an institutional plan of providing training services to clients (in Bangladesh and outside) as a sustainable center for training in the region (Strategy Development)
- (A3) Creating, Managing and Operating a Sustainable Rural Electric Entities
- (A4) Attracting Private Participation to the Distribution Sector (Workshop)
- (A5) Successful Rural Electricity Delivery Projects and Models (Study Tour)
- (A6) Managing Grid/Transmission Maintenance in Rural Areas (Workshop)

4.6.3 Beneficiaries:

REB and all other utilities, cooperatives or other entities in the region involved in rural electrification.

4.6.4 Potential Implementing Partners:

With the increased capacity gained in activities A1 and A2, REB would be expected to serve as a primary implementing partner for activities A3 through A6 that would be provided to other stakeholders in the region. Other regional utilities in the public and private sector, and international organizations/NGOs, such as NRECA, with the appropriate expertise may serve as implementing partners.

4.7 (TC7) Human Resource Development for Energy Utilities

In the face of proposed utility sector reforms, SARI/E country utility managers will soon be confronted with the need to be able to more accurately evaluate their system's performance and to determine appropriate measures through which to improve their systems' performance and profitability. This need will include being able to evaluate each employee for their job performance, their capacity for improvement, and the training that they would need to do so. In the process of commercializing and streamlining, utility managers will need to determine on a macro- human resource level the areas where the company experiences a shortage and/or an excess of staff. Utilities will need a systemized approach to determining overall utility staffing needs and the optimal allocation of staff to maximize utility performance within its financial constraints. Developing such an approach to labor allocation will be particularly crucial to the utility achieving its business strategy and to the possibility of the utility reducing labor forces and subsequently cutting costs. With an appropriate understanding of labor needs across utility functional areas, managers will be able to determine whether such cuts will be cost effective and how they will affect system performance in the short and long-term.

An effective Human Resource Development Department will be a very important part of this process as it will play a key role in assisting executives and managers in the decision making process by establishing 1) a utility-wide labor strategy, 2) a system of performance monitoring and evaluation, 3) an incentive-based system of employee advancement to encourage optimal job performance, and 4) institutional training initiatives to provide on-going staff support to its own employees, and those of other utilities in the region. Furthermore, the Human Resource Development entity will need to communicate its mission and goals to the employees to elicit their support in the effort. With the knowledge that the utility is making its best effort to support employee development and retention, labor may be more supportive of restructuring changes that are sweeping through the energy sector.

The Human Resource Departments of utilities in most SARI/E countries do not presently possess most of these skills. At present, several utilities offer limited training to new employees in job related skills, while a few departments provide on-going training in utility operations. Training is provided, however, on an as-needed, and ad-hoc basis. Few employees receive regular performance evaluations, if at all, and employee advancement is based on seniority rather than performance. The resulting consequences of inadequate human resource development departments within utilities across the SARI/E region include a regional energy sector with a poorly trained staff, low performance incentives, and high efficiency losses.

This Human Resource Development & Management module focuses on improving the institutional capacity of energy utilities to provide progressive training to their employees, and to leverage the training initiatives of utilities in the region, in order to maximize employee job performance and encourage utility labor support for regional energy trade and interconnection.

4.7.1 Objectives:

- (O1) Define a constructive role, structure and function of Human Resource departments in energy sector entities
- (O2) Systematize utilities' approach to staff training and institutionalize existing programs
- (O3) Integrate self-sustaining techniques into organizational training plans.

4.7.2 *Activities:*

- (A1) Designing, Operating and Managing an Effective Human Resources Development Program (Workshops, repeated)
- (A2) Developing In-House Training Capacity (Workshop, Web-based Resources)

4.7.3 *Beneficiaries:*

Public & Private Utilities (Sr. Executives and Senior Human Resource/Training Managers)

4.7.4 *Potential Implementing Partners:*

Regional organizations experienced in energy sector human resource training (ex. ASCI, Hyderabad; CMD, Dhaka; PMI, Delhi/Noida)

4.8 (TC8) Regional Energy Efficiency Support/Initiative

SARI/E energy efficiency initiatives to date have focused on the development and implementation of consumer appliance standards and labeling. The extent of success in implementing these energy efficiency initiatives has varied from country to country depending upon the priority given to energy efficiency by the host-country/government partners. Because of its importance, it makes sense for SARI/E to continue to support the ongoing work it has begun in encouraging the harmonization of standards across the region as a way of facilitating trade linkages in efficient appliances and equipment. To further achieve the maximum impact of a regional standards program, SARI/E should also consider expanding the range of products included in the program to include those that require the greatest energy inputs in industrial applications. For instance, the industrial sector accounts for approximately 40% of the country's electricity consumption⁹ - of which 70% is used for operation of motors¹⁰. By increasing the efficiency requirements of motors, fans etc. used across a variety of applications, the region could improve industrial energy efficiency, improve regional trade, and reduce the strain on an energy system that is already short of supply.

To this end, there are organizations in SARI/E countries with experience in performing industrial energy audits precisely to determine where companies consume the greatest amounts of energy. What is lacking however, is access to baseline data in the region and in the world, which can be used to determine efficient levels of energy consumption (in similar industries), and points of intervention where energy savings can be realized while still maintaining efficient levels of production. For example, during the TNA several stakeholders identified the cement industry as an ideal target industry for additional research, data collection, and efficiency reform.

This module supports partnerships between regional institutions to coordinate standards and labeling efforts, and focuses on developing the institutional capacity of stakeholder organizations to create and maintain resources related to energy efficiency, including web-based accessible information and training curricula. The purpose of these activities is to introduce market-based incentives for efficiency and to create the demand for regional trade in efficient appliances and equipment.

4.8.1 Objectives:

- (O1) Develop local institutions' regional energy efficiency training & data resources
- (O2) Encourage the collaboration of energy efficiency-related organizations within the region
- (O3) Facilitate continued support between organizations for energy efficiency labeling program
- (O4) Promote energy efficiency projects in commercial and industrial activities, particularly in increased use of efficient equipment.
- (O5) Harmonize energy efficiency standards across the region to promote increased trade in efficient products and equipment.
- (O6) Reduce barriers to regional trade in energy efficient products and equipment.

⁹ "Concept Paper: Energy Efficiency Standards and Labeling for Appliances in Bangladesh." Nexant/USAID, February 2003.

¹⁰ Bangladesh Power Development Board, May 2003.

4.8.2 Activities:

- (A1) Development of energy efficiency database structure and web-based operation (Web-based Resource)
- (A2) Collection and input of data in collaboration with regional energy efficiency organizations (Web-based Resource)
- (A3) Assist organizations in the revision and updating of existing training curricula & regional access to curricula (Curriculum/Materials Development)
- (A4) Facilitate travel and/or communication support between energy efficiency labeling organizations upon request, as follow-on to SARI/E I Energy Efficiency Labeling program (Invitational Travel)
- (A5) Designing a National Energy Efficiency Strategy (Workshop)
- (A6) Policy Incentives to Encourage Market-Based Energy Efficiency Initiatives (Workshop)

4.8.3 Beneficiaries:

All stakeholders - especially NGO/Consumer Groups, Media, and Public Institutions (Energy organizations tasked with the development & implementation of energy efficiency labels)

4.8.4 Potential Implementing Partners:

Local/Regional Energy Efficiency Organizations (NGO or Academic - ex. SLEMA (SL), Univ. of Moratuwa (SL), BEE (India)); Academic Institutions (current training providers, some same as the Implementing Partner); Public Institutions (Energy organizations tasked with the development & implementation of energy efficiency labels - ex. CEB (SL) and implementing agency in Nepal)

Attachment I: List of Stakeholder Meetings

Stakeholder Category	Institution	Country
Public Institutions	Petrobangla	Bangladesh
	Power Development Board	Bangladesh
	DESCO	Bangladesh
	DESA	Bangladesh
	Power Grid Company	Bangladesh
	Hydrocarbon Unit	Bangladesh
	Central Power DisCo of Andhra Pradesh	India
	Power Management Institute	India
	National Power Training Institute	India
	National Electricity Authority	Nepal
	Alternative Energy Promotion Center, Ministry of S&T	Nepal
	Ceylon Electricity Board	Sri Lanka
	Bureau of Infrastructure Investment	Sri Lanka
Lanka Electricity Company (LECO)	Sri Lanka	
Department of National Planning, Ministry of Finance	Sri Lanka	
Policy Makers	Gas Trading Policymakers (Seminar)	Bangladesh
	UP Regulatory Commission	India
	Maharashtra Electricity Regulatory Commission	India
	Water and Environment Commission of NEA	Nepal
Private Sector/ Private Developers	UNOCAL	Bangladesh
	KSK, Energy Ventures	India
	Confederation of Indian Industry	India
	FICCI	India
	Bhote Koshi Power Company	Nepal
	U.S. Chamber of Commerce	Sri Lanka
	Caltex	Sri Lanka
	Ceylon Chamber of Commerce	Sri Lanka
EcoPower	Sri Lanka	
Financial Institutions	Infrastructure Development Finance Company, Ltd	India
	Hatton National Bank (HNB)	Sri Lanka
TIPs	BUET	Bangladesh
	REB	Bangladesh
	Administrative Staff College of India	India
	BSES Management Institute	India
	IndianOil	India
	School of Environmental Management and Sustainability	Nepal
	SLEMA	Sri Lanka
University of Moratuwa	Sri Lanka	
Media	Bangladesh National News Agency (BSS)	Bangladesh
	The Sangbad Limited	Bangladesh
	The Daily Dinkal	Bangladesh
	The News Today	Bangladesh
	The Daily Janakantha	Bangladesh
	The Daily Ittefaq	Bangladesh
	The News Today	Bangladesh
	Daily Manabzamin	Bangladesh
	Press Institute of India	India
	Ex-Editor, The Times of India	India
	Nepali Times	Nepal
	Himalayan Time	Nepal

Attachment I: List of Stakeholder Meetings

	Kathmandu Post Deshantar Weekly Spotlight Daily Mirror	Nepal Nepal Nepal Sri Lanka
NGO/Educational/ Other	Center for Management Development NRECA Consumer Education Research Council - CERC Consumer Org. Regulation of Electricity, Lok Satta TATA Energy Research Institute (SAFIR) SBR Rao, Independent Consultant on Rural Energy ProPublic Panos South Asia Center for Energy Studies – Tribhuvan University (TU) Center for Economic Development & Administration, TU Energy Forum Munasinghe Institute for Development (MIND)	Bangladesh Bangladesh India India India India Nepal Nepal Nepal Nepal Sri Lanka Sri Lanka

Attachment II: Training Institution Partner Meeting Summaries

Name of Institution	Administrative Staff College of India (INDIA)
Stakeholder Category	Public Educational Institution
Description of Activities	Administrative training institute which provides across the board training for all sectors, training mostly public but in some cases private recipients. Strong program for energy sector training.
SARI/E Experience	ASCI has signed an MOU with AED under SARI/E and is charged with developing additional training capacity under Regulatory Reform issues.
Institutional Strengths & Weaknesses	<p>+ Exceptional training experience and facilities.</p> <p>+ Strong capabilities and in-house expertise on all areas of energy sector management</p> <p>+ Experience with building knowledge portal for inexpensive distribution of information (health sector)</p> <p>- Lack of good access to international data resources and subscriptions</p> <p>- Not yet focused on regional issues of energy cooperation</p>
Capacity Building & Training Needs Identified	<ul style="list-style-type: none"> • Partnership with US Institution (resource center) to develop long-term regional energy training program curriculum focused on regulatory reform. • Membership into professional bodies to strengthen areas of expertise – 2 years • Establishment of regulation and restructuring resource center with computer facilities, formal ties with relevant institutions, books and literature, journals, portals for links to sites and database relevant to utility regulation and restructuring. • Grant to develop institutional models for resolving energy trade disputes.
Potential Role in Training	<p>Provide training in all areas of regulatory reform.</p> <p>Develop compendium of experience throughout the region for regulatory reform.</p> <p>Exchange programs with other TIPs</p> <p>Resource center.</p> <p>Internet Portal of information for utility regulation</p> <p>Develop model for resolving energy trade disputes</p>
Follow-on to Meeting	ASCI has sent ideas for training support. Response required. We will also send a specific list of suggestions for their input.

Attachment II: Training Institution Partner Meeting Summaries

Name of Institution	BSES Management Institute (INDIA)
Stakeholder Category	Private Utility – Training Institution
Description of Activities	Houses an established number of management training programs focused at various levels of management for a variety of Utility personnel within BSES. Currently runs about 12 workshops per year out of a selection of over 50 topic areas on a variety of general management topics (leadership, team building, communications, quality control, finance) and technical programs (contract management, power project development, reliability and modernization of distribution, reducing distribution loss, repair & maintenance of thermal power plants, corporate governance, effective management of power distribution utility, etc)
SARI/E Experience	Signed MOU as TIPs partner. Has hosted SARI/E workshops. Has not yet proposed any specific TIPs strengthening activities or action plan.
Institutional Strengths & Weaknesses	+ Large number of courses on distribution and utility management already prepared + Established reputation and years of utility & distribution experience in parent institution + Recently purchased by Reliance, focus on profit and business expansion; Reliance wants BSES as company institution - No specific courses on regional issues of distribution
Capacity Building & Training Needs Identified	<ul style="list-style-type: none"> • Assistance with curriculum development and materials for training • Instructor advisory assistance with specific regional topics • Coordination with other countries to develop regional program
Potential Role in Training	Provide training on the following: 7-12 per year w/Regional or State Issues Focus Communications & Outreach Regulation for Distribution Reform Managing Change for DisCos Operational Mngrs Revenue Mgmt and Loss Reduction Social Aspects of Distribution Reform Unbundling, Open Access, Transmission? Consumer Relations Mgmt for DisCos Executive Seminar for Media
Follow-on to Meeting	Send a proposed list of courses with regional emphasis and budget for their review and prioritization. Propose business plan support for commercialization of services

Attachment II: Training Institution Partner Meeting Summaries

Name of Institution	IndianOil (INDIA)
Stakeholder Category	Public sector corporation
Description of Activities	Comprehensive training in all upstream and downstream activities related to oil sector management.
SARI/E Experience	Signed MOU as TIPs partner. Planning course on Regulation in the Oil Sector planned for September.
Institutional Strengths & Weaknesses	+ Significant experience in the oil sector and all levels of management and technical training + Comprehensive one stop shop for all areas of interest under the oil sector + Established, professional well run institute with excellent resources and extensive regional offices. - No portal for on-line training
Capacity Building & Training Needs Identified	<ul style="list-style-type: none"> • Some outside expertise to modify courses to introduce regional issues • Internet portal for on-line training
Potential Role in Training	Host Institution Can provide spaces in current program for regional participants Can develop a few new courses that are adapted to include regional perspective.
Follow-on to Meeting	Provide suggested list of regional courses for their review.

Attachment II: Training Institution Partner Meeting Summaries

Name of Institution	School of Environmental Management & Sustainability (NEPAL)
Stakeholder Category	TIPs; Public Institution, part of Pokhara University (State Funded)
Description of Activities	Established in 1999. Provides university programs, short term programs for professionals and specific consultancy services. Bachelors and Masters programs.
SARI/E Experience	Met with SARI/E Team, agreed to be TIPs, reviewed EIA CD, launched CDs in Bangladesh, Nepal, Sri Lanka. Developed 6 proposals for SARI/E, developed action plan for its role in SARI/E.
Institutional Strengths & Weaknesses	<ul style="list-style-type: none"> + Leading EIA institution in the region, run by highly respected leading expert of EIA in the region + Dean is very active, has lots of ideas, very motivated to be a leading resource for EIA in the whole region + Existing courses in EIA + Strong environmental network in the region, works with other universities and ministries + Some resource facilities (library, classroom, computer) - Not a great deal of experience on power sector EIA - Not a positive experience with SARI/E to date
Barriers/Political Issues	Has made promises during the distribution and presentation of CDs. But is afraid of giving false assurances of follow up support and then not receiving it from SARI/E.
Capacity Building & Training Needs Identified	<ul style="list-style-type: none"> • Expand EIA to power sector areas • Expand EIA to include regional cooperation energy activities • Develop regionally consistent framework to deal with displaced persons as result of power projects
Potential Role in Training	Develop CDs Provide support to other institutions in the region on EIA capacity
Strategy, Insights, Ideas	Limited discussion with TIPs
Follow-on to Meeting	Needs immediate follow up and response on proposals submitted and action plan. SchEMS is a bit frustrated due to significant input so far and lack of response to initiatives. Did not provide any information to the TNA team in terms of specific courses taught, capacity needs etc.

Attachment II: Training Institution Partner Meeting Summaries

Name of Institution	University of Moratuwa (SRI LANKA)
Stakeholder Category	TIP – Academic
Description of Activities	Engineering & Architecture University
SARI/E Experience	<ul style="list-style-type: none"> • TIP: signed MOU with AED/USAID in the area of legal aspects of energy projects even though they do not have expertise in that area. Formed the “Center for Energy” as a SARI/E initiative, which is an association of 15 faculty specializing in energy sector issues. • Currently developing a workshop on “Procurement & Financing Energy Projects”. Have been involved in studies on Energy Efficiency in Ceramics Industry, and Economic Impacts of Insufficient Power Generation. • Continues interaction with BUET (SARI/E TIP in Bangladesh)
Institutional Strengths & Weaknesses	<p>(+) Strong technical expertise in energy project financing, risk assessment, electricity pricing, renewable energy technology, energy efficiency, distribution & transmission, building management.</p> <p>(-) University’s location and lack of lodging options make it unsuitable as a training venue.</p> <p>(-) The University’s condition for the formation of the Center for Energy is that it does not develop curriculum or offer courses to Moratuwa students. Its role is defined as a Center to interact with external parties by establishing partnerships, undertaking joint projects with other institutions, etc. Students can benefit by being involved & advised in energy projects.</p>
Capacity Building & Training Needs Identified	<ul style="list-style-type: none"> • Power Sector Reform (Media, NGOs, Financial Institutions) • How to Attract Private Investment to the Power Sector (Public Institutions, Media, Policymakers, NGOs) • Mechanics of Private Sector Participation: Performing Due Diligence, Financial Evaluation, Preparing Proposals to Lenders, RFP Documents, Contract Negotiation (Public Sector) • Distributed Power Technology (all stakeholders) • Energy Efficiency Monitoring & Evaluation to Determine Impact of Technology Change (??) • Energy Efficiency Best Practices in End-User and Industrial Systems (all stakeholders)
Potential Role in Training	Host organization, Curriculum Development, Facilitators, Partnerships & Networking, Participants in Regional Studies
Follow-on to Meeting	Sent preliminary announcement of upcoming SARI/E Grants program

Attachment II: Training Institution Partner Meeting Summaries

Name of Institution	Sri Lanka Energy Manager's Association (SRI LANKA)
Stakeholder Category	NGO, non-profit (funded by companies of attendees, UNDP, Energy Conservation Finance Fund, renewables by Norwegian gov't, greenhouse gas – AIT of Thailand, Swedish CITA)
Description of Activities	<ul style="list-style-type: none"> • Promotion of rational development and use of energy with a focus on Energy Efficiency (EE) • Run 8-10 programs per year on energy efficiency and subsequent capacity building, energy efficiency and technology (Courses developed for advanced as well as unskilled levels) • Conducted series of Energy audits throughout Colombo with USAEP • Courses: Boiler operations, EE on tea plantations, • Developed set of manuals with industry-specific issues for ceramic, glass, cement, rubber, buildings etc. • Typical course: lecture 3-5 days, go to industries 5 days, conduct energy audits, return to class, write reports, brief management • Participation in rural energy, biomass feasibility study using rice husks
SARI/E Experience	<ul style="list-style-type: none"> • Nexant course in ESCO financing
Institutional Strengths & Weaknesses	<ul style="list-style-type: none"> • 20 year old training institution, 4 FT staff, all members work on a voluntary basis, strong industry participation and representation • 100 active members, 25 participate in trainings and/or as trainers • Quality of written materials is good with many illustrations and documentation • SLEMA is totally focused on energy efficiency, with apparently little expertise in other SARI energy focal areas
Capacity Building & Training Needs Identified	<ul style="list-style-type: none"> • Industry specific trainings relevant to major SL industries • Trainings illustrating EE experiences in other countries • Managerial finance training, including banking, financing, sources of potential finance and their requirements, Types of finance (ESCOs, self-financing, mixture of finance), forms of credit enhancement • Financial institution training: study of EE project options, project economics, finance w/in project finance framework, lending security with EE • EE regulatory training: briefing of regulatory regime, outline SL regulatory plans, • Training on the need and benefits of industrial and commercial EE benchmarks for the region with standards being influenced by buyers • Biomass energy workshop – discussing technologies, economics, and financing, but with particular emphasis on regional experiences especially India and Thailand • TIPs trainer training programs
Potential Role in Training	Facilitator, Curriculum Development, Participant, Host Organization
Follow-on to Meeting	Requested input on potential courses, Sent preliminary announcement of upcoming SARI/E Grants program

Attachment II: Training Institution Partner Meeting Summaries

Name of Institution	Bangladesh University of Engineering and Technology (BUET) (Bangladesh)
Stakeholder Category	TIP – Academic
Description of Activities	Engineering University
SARI/E Experience	TIP: Attended Mumbai workshop on Regional Energy Efficiency in Distribution. Signed MOU in Sept/Oct 02 in as a specialist in Technical Cross Border Interconnection Issues, and asked about their specific capabilities in Dec 02. Since Feb 03, interaction has increased and is developing a workshop on <i>Methodologies to Quantify the Benefits of Interconnection</i> scheduled for July 03. (They were previously involved in the Four Borders study) They have also been assigned a to conduct of study of ESCO experience in the region. Previously, they submitted proposals to AED but after several months have not received any response. IIE obtained the proposals – one for training, one for research – in follow-up by e-mail.
Institutional Strengths & Weaknesses	(+) Large, established, well respected/ preeminent multidisciplinary engineering university in Bangladesh. Faculty have international post graduate degrees. Highly technical expertise in power systems. (+) Located in Dhaka and have adequate facilities for training. (+) Maintain linkages with similar academic institutions in the region (inc. University of Moratuwa)
Capacity Building & Training Needs Identified	<ul style="list-style-type: none"> • Lowering Energy Costs Through Regional Energy Trade (Media, NGO) • Load Side Approach to Energy Efficiency: Benefits to consumer from energy efficiency (Media, NGO, Public Institutions/Utilities) • Cross Border (Technical) Harmonization of Distribution Systems (Public Institutions/Utilities, Private Sector, Media, FI)
Potential Role in Training	Technical training facilitators, Host Institution, Conducting studies & research, Organizing Policy-Level Workshops (have access to Ministerial level officials)
Follow-on to Meeting	Requested copies of grants proposals previously submitted – sent preliminary announcement of upcoming SARI/E Grants program

Name of Institution	Rural Electricity Board (Bangladesh)
Stakeholder Category	Public GOB Electric Distribution Company
Description of Activities	<ul style="list-style-type: none"> • REB has its own training program (quotes are from Member, Generation) <ul style="list-style-type: none"> ○ “No institution can continue to operate until it is self-sustainable ○ Training must be self-financed and realize its cost of service ○ “It training is excellent compared to others in Bangladesh, but less so compared to American standards. Training needs to: <ul style="list-style-type: none"> ▪ Reflect continuous changes in technologies and procedures ▪ Update its curriculum in a scientific way ▪ Constantly adjust its mode of delivery ○ The REB always depends on some development project from the GOB or multi- or bi-lateral funding sources, some of which come through the GOB ○ In the past, they train people in their RE cooperatives, do not charge fees, pay from overhead; this is changing as they are starting to charge fees ○ The Directorate of Training and Career Development of BPDB has developed a Training Policy and program for regional and area training centers for DESA, DECSO, and REB – IIE has a copy of the plan, • REB has independent generators: a 140MW, adding another 70MW, and a 450MW. <ul style="list-style-type: none"> ○ They deliver power at 99% availability with virtually no unscheduled interruptions
SARI/E Experience	<ul style="list-style-type: none"> • Have participated in SARI projects and delivered papers in India • SARI experience is useful as it broadens the experience of participants through the sharing of experiences with professionals from other countries • Follow-on activities should be developed from needs identified from participation in the training and communication in the evaluation of the program
Institutional Strengths & Weaknesses	<ul style="list-style-type: none"> • Best training program for a distribution company in Bangladesh and for rural distribution in S. Asia <ul style="list-style-type: none"> ○ Despite their success, total REBs will not be self-sufficient for another 10-20 years ○ 7-8 coops are generating sufficient funds (those located around Dhaka and industrial loads) ○ 20 other cooperatives may be close to B/E, other will take many years • NRECA’s role in training has supported the standardization of materials, accounting procedures, finance, training, and engineering procedures <ul style="list-style-type: none"> ○ Currently, they are being used to give assistance in construction; they are no longer associated with the REB training program ○ They have small delegation here providing assistance in specific projects, GIS mapping, negotiating PPAs ○ REB has the best negotiating team in the negotiation of PPAs • REB has very efficient diagnosis process and management systems, it is very transparent
Barriers/Political Issues	<ul style="list-style-type: none"> • There are many institutes capable of providing technical training in the region, but none with a syllabus that specific to the REB • No political mindset to invest in training
Capacity Building & Training Needs Identified	<ul style="list-style-type: none"> • Assistance to institutionalize training: develop schedule, costing, protocols, & curriculum review • Private Financing of the distribution sector

Attachment II: Training Institution Partner Meeting Summaries

Name of Institution	Rural Electricity Board (Bangladesh)
	<ul style="list-style-type: none"> • Course in how to make an cooperative self-reliant • Course directed towards changing mindset of institutions from government assistance to self-sufficiency • Training courses provided/sponsored by BSES • Courses in cooperative information management • Development of maintenance program, where they transfer responsibility for maintenance total to the coops
Potential Role in Training	<ul style="list-style-type: none"> • A trainer for personnel from other SARI distribution companies taking advantage of: <ul style="list-style-type: none"> ○ Their established training programs and skills that are directly pertinent and applicable to Bangladesh and S. Asian environment ○ Their desire to make their training activities self-sustainable, covering costs, or operate at a profit ○ Their understanding and ability to bring training activities down to lower staffing and local levels as desired by DESA and DESCO (see other interviews) on a cost-effective basis • REB can help establish coops in other countries in terms of: <ul style="list-style-type: none"> ○ Formation and operation ○ Bi-laws ○ Setting financial management processes ○ Standards for construction • Participate in curriculum development team
Strategy, Insights, Ideas	REB training could facilitate required skilled, yet low-cost training of 1) larger numbers of employees, 2) local distribution company workers
Follow-on to Meeting	Sent preliminary announcement of upcoming SARI/E Grants program

Attachment III: Country Summary Reports

This section is intended to highlight the key issues in each country, across stakeholder groups, as they were revealed through the TNA process. As previously mentioned, the TNA team split into two sub-teams to cover all four countries in the amount of time allotted. The team that conducted the assessment in Bangladesh and Sri Lanka found common, critical issues between the two countries, that may have relevance as well to other stakeholders in the region. These issues are discussed at the close of this section, following the Sri Lanka summary. The key themes in all four countries were then examined for concurrence across the region as potential points of intervention in the SARI/E program. The results of the comparative analysis can be found in Section Four

3.1 Bangladesh

Bangladesh's power and energy sectors reflect both great needs and opportunities at the same time. Its power sector consists of 55 power stations totaling an installed capacity of 4680 megawatts (MW). This capacity is mostly thermal-fired (mainly natural-gas-fired) with the remainder being hydroelectric. The electric system, however, is not efficiently run, and it suffers from a range of problems that include: up to 35% system losses, delays in the completion of new plants, low plant efficiencies, natural gas availability problems, the erratic provision of power supply, significant electricity theft, repeated power blackouts, and an unwillingness by its customers to pay bills. As a result of these problems, the system can serve only a peak demand of 3600 MW, out of its total installed capacity. Because only 30 percent of its population is currently connected to the central electricity grid, its power demand is expected to grow rapidly. The country's Power System Master Plan forecasts a doubling of electric generating capacity by 2010 with a total requirement in new investment approximating \$4.4 billion through 2005. In addition, the country may also need to replace 30-40 percent of its current generating capacity due to plant retirements within the near future.

A bright spot for the country is that it has a relatively well-managed and efficiently run rural electric cooperative system that distributes electricity to residents outside the main cities. The country's Rural Electric Board provides electricity to a large percentage of the country's residents, and it offers to the country's otherwise poorly run, state-owned electric systems a performance benchmark to match. An even brighter prospect for the country is its potentially significant reserves of natural gas. Whereas the country has small reserves of oil and coal, it has huge reserves of gas that could range up to 50 Trillion cubic feet (Tcf). Whereas the reserves greatly exceed domestic demand, the country's significant gas reserves offer the country an opportunity to earn significant foreign exchange earnings through the export of gas to Indian markets. Since many Bangladeshi politicians and citizens consider the gas reserves to be a national resource, there is significant controversy over exporting its gas to serve Indian customers. It is expected that the domestic controversy over gas exports will be settled within the coming months.

Regional cooperation: Cross border connection with India is difficult in the prevailing political environment. There is a lack of Indian government buy-in to the SARI/E program initiatives, as evidenced by India's insistence on bi-lateral arrangements versus a regional/multilateral approach to energy development. The "Four Corners" interconnection project envisaged in the pre-feasibility report was never realized due to this uncooperative sentiment.

Sales of Natural Gas to India: Within Bangladesh there is no full consensus on an accurate determination of the country's proven gas reserves and domestic use requirements for future development. Policymakers also continue to debate the appropriate method for gas exports, whether it is through electricity generation and sale or gas transmission pipelines/sale. If and/or when gas trade is approved by the government, public sector promoters and stakeholders will need to know the legal, technical, fiscal, and contractual issues related to cross border trade to be able to effectively negotiate sales agreements.

Consumers and other civil society stakeholder groups are still generally unaware of the potential economic and social benefits (including domestic employment opportunities) to be gained from inter-regional trade and the export of natural gas. At the same time, Myanmar is considering trans-shipment of gas through Bangladesh to India.

Electricity: Electric utilities are operated with an emphasis on a politic agenda rather than providing high quality and reliable service to customers in a manner independent of the political process. Most importantly at this time, rates need to be revised to reflect cost of service rather than political agendas; however, even would-be regulators are not willing to buy into recognizing the real cost of service.

Regulation: Following restructuring, electricity regulation was identified in most interviews as an area which would be critically important to the future health of the electricity sector in the region. Although recent electricity laws call for the establishment of regulatory bodies to develop and carry out regulatory oversight and policy, South Asian countries have had little or no previous experience in the steps required to establish, organize, and operate national and state regulatory agencies. Electricity regulatory training is, in fact, the single largest training need that affects all SARI/E stakeholder groups (public sector, private sector, consumer groups, the media, etc.) either because of their need to make informed decisions on how to structure, staff, and operate such bodies or because what they pay for electricity will be regulated by these agencies. Thus, it is important that they understand the role of regulation and responsibilities of a regulatory body, as well as each stockholder's relationship to the process of its development and operation. This need for a comprehensive training plan to adequately address each level of regulatory development and implementation is extensive in all four countries interviewed, although the need in India is most urgent at the state versus the Center level.

In Bangladesh, the Parliament recently passed the Energy Regulatory Commission Act of 2003 that called for the creation of a regulatory commission to oversee both the electricity and gas sectors. Specifically, the Commission will be responsible for regulating: 1) Transmission and distribution of the gas sector 2) Generation, transmission and distribution of the power sector and 3) Energy fuel marketing. Its primary and most urgent task will be to set electricity tariffs. The Commission will also issue licenses, determine fuel prices in accordance with government policy, set standards for energy activities, ensure the rights of consumers are protected, and enforce existing laws. It was expected that chairman and members would be nominated for the new commission on July 1, 2003, and although, no appointments were made at that time, they are expected imminently.

This regulatory issue was identified in similar scope and depth for Sri Lanka, and applies to Nepal and, on a state-level, India, but was raised most strongly during the team's stakeholder discussions in Bangladesh and Sri Lanka. Bangladesh and Sri Lanka also have additional needs for training assistance for gas and petroleum regulation respectively. Natural gas regulation is a new area in

Bangladesh, and very few other countries - particularly in South Asia - have relevant experience with gas regulation

Distribution Sector Reform: Restructuring of the Bangladesh electricity sector is being implemented gradually. Bangladesh's distribution system is old, technology is antiquated, and is not sufficient to meet demand in the country. In the short-term, distribution will continue to be managed by DESA, with DESCO continuing to report to DESA instead of dealing directly with the newly established TRANSCO. This arrangement is being continued under the influence of DESA's Central Bargaining Agency (CBA), which is highly political, represents labor union interests, and is opposed to any form of privatizing billing, collections, metering etc. Privatization of specific distribution functions, however, such as collections, billing, metering, would help increase DESA efficiency. In the long-term, three distribution companies will be established from DESA service territory.

Rural Energy Development: Despite its relative success in providing electricity to its rural areas, 70% of rural Bangladesh remain without access to power. The Rural Electricity Board (REB) is very efficiently run and can be held as a model for the SARI region. This model needs to be further developed for attracting private sector investment into developing additional Rural Electric Cooperatives (RECs). Greater emphasis is also needed on the use of renewable energy, particularly wind energy in areas well-suited; biomass and other solar technologies for rural areas.

Generally, RECs provide in-house training to staff and train personnel from other cooperatives free of charge. Certain RECs may be appropriate implementing partners, able to provide training to other government-owned distribution companies. REB can help in establishing RECs in other SARI countries; specifically in the formation, setting bylaws, financial management systems, maintenance procedures.

3.2 India

The Indian energy sector is of critical importance to all national development priorities. Sustainable economic growth in agriculture and industry, as well as employment generation will require reliable energy supplies. Achieving social objectives such as improved health and education is today threatened by the high budgetary costs of energy, particularly at the state levels.

Economic growth is at risk in India due to the absence of far-reaching structural reforms in the fuel and power sectors. Between 1992 and 2002, GNP increased in India from \$330 billion, to about \$411 billion. In the same period, per capita real income increased from Rs. 7,690 to Rs. 10,653, and total primary energy demand increased from 1,716 million tonnes of oil equivalent (MTOE) to 2,421 MTOE. The demand for commercial energy also increased from 199 MTOE to 225 MTOE in, a thirty-eight per cent increase.

The country has embarked on sectoral reforms needed to improve both the efficiency of the power sector, and to exploit domestic oil and gas resources more efficiently. New policies are also needed to attract foreign investment to finance the required infrastructure, and to shift from imported oil toward more competitive natural gas.

Coal is the dominant commercial fuel in India, satisfying more than 70% of fuel for power generation. The country is the world's third largest coal producer, with the government-owned Coal India Ltd. accounting for about 90% of all domestic production. The Indian coal industry is however characterized by inefficiency and low productivity. Furthermore, the high ash content these low-grade coals, as well as environmental impacts of increased coal usage are encouraging a shift to gas as a major fuel for power generation

Energy Security. Rapidly growing demand for commercial energy has increased the country's dependence on imported oil and gas. During 2001-02, 69% of the country's consumption of these fuels was imported, of which 65% was from the Persian Gulf region. This dependence on imported fuels is expected to increase to 81% by 2011-12, at present rates of economic growth, in spite of increases of domestic production. Energy security concerns have resulted in a search for more diversified imported fuel sources, and an interest in regional pipeline projects to facilitate secure natural gas supplies from Bangladesh and Iran's South Pars field.

The Federation of Indian Chambers of Commerce and Industry (FICCI), emphasized the importance of energy security as an area of concern in the private sector. There is, according to FICCI, strong interest in regional discussions on how the private sector within the region can address regional energy security issues.

The Power Sector and Distribution Reform. The reform of the power sector in India focuses today on improving the performance of state owned distribution systems. The Government of India has formulated a broad program to improve distribution throughout the country. The new Electricity Law 2003 is landmark legislation. It will undoubtedly influence the future direction of reform efforts already underway, refocus attention on the pace of unbundling in the states, and add to the range of issues already on the table. The most important among these will be: tariff rationalization and 'open access'. Also on the agenda will be the role of energy efficiency, integrated resource planning and demand side management in the new environment.

Discussions with stakeholders on reform issues reveal a need for a systematized overhaul of this sector including activities focused on nationwide manpower development for utilities and distribution companies. To support the reform, SARI/E could propose to develop teaching materials on how to manage electricity distribution functions based on experience in the region, and a series of Best Practice Guides to showcase successes in improved management practices. The BSES Management Institute, an existing SARI/E TIP, as well as some other local distribution companies¹ could be engaged to implement these activities. Their experience and knowledge would be supplemented with experience from other SARI/E countries, and the documents made available through the project website.

Oil Sector Management: In the oil and gas sectors, improved upstream petroleum and natural gas regulation is needed with a focus on concessions licensing, and regulatory management of offshore oil and natural gas exploration and production. A bill has been proposed to set up a Petroleum Regulatory Board to oversee and regulate the refining, processing, storage, transportation, distribution, marketing and sale of petroleum and petroleum products. Similarly, a Gas Law is under consideration that will establish a new body to regulate natural gas transmission, distribution and

¹ Ex. CPAPDCL (Andhra Pradesh), NPCL (Noida), and NDPL (North Delhi),

marketing. Administered Pricing Mechanism (APM) for petroleum product prices ended in April 2002, and the deregulation of oil prices is gradually being implemented.

IndianOil, the SARI/E TIP for oil sector management, has an interest in expanding its capabilities to include regulation and to offer a course on Oil Sector Regulatory Reform. During the TNA mission, discussions revealed a willingness to expand its contribution to SARI/E through the development of regional programs in oil sector management. IndianOil provides comprehensive training at all levels of management at its main center outside of Delhi and all technical levels through its extensive set of regional centers. Management topics include upstream and downstream subjects from refinery to pipeline operations to the marketing, strategy, finance and information technology. Not only will IndianOil readily accept up to five or so participants from the region in its ongoing courses, but also the institute is willing to consider tailoring its courses to meet regional concerns.

Private Sector and Other Contributions. India is clearly in a position to provide technical and managerial expertise in many areas and through several types of stakeholders groups that are of concern under SARI/E. There is no dearth of active consumer organizations that have made significant contributions to protecting consumer interests and providing a voice to consumer concerns. For example the Consumer Education and Research Centre (CERC) in Ahmedabad not only brings consumer complaints before the regulatory commission, but also has established an energy efficiency testing facility for appliances. Other examples include the Consumer Organization (for) Regulation of Electricity under Lok Satta, in Andhra, which helps develop franchises (run by a cooperative or more often, local entrepreneurs) of rural feeders for improved distribution of electricity. They provide training on how to set up, operate and maintain these franchises and are willing to share their experiences through exchanges or training on a regional basis.

There is much that can be learned from the reform and restructuring efforts at the state level in India; most notably, the experiences in Orissa and Delhi, although in many states the story is still unfolding. The states are at various stages of reform, and these efforts are now likely to take new directions under the impetus of the new Bill. Nonetheless, there is a need to compile the regional regulatory experience gained to date, in a suitable “resource center” form available to regional institutions. Such a resource center could be housed at the Administrative Staff College of India (ASCI), one of the SARI/E TIPs.

Although the Indian TIPs are all well placed to contribute to the regional training needs, their capacity can be enhanced by drawing upon the resources a number of other centers of training excellence (such as the Indian Institutes of Management and the Indian Institutes of Technology). Two of these institutions (IIT-Kanpur, and IIM- Ahmedabad) have entered into a collaborative Memorandum of Understanding with the Infrastructure Development Finance Corporation (IDFC) to expand their activities in the area of power sector (and infrastructure) training. The network, “3IN”, has expressed its interest in collaborating with other institutions in the region to develop training programs with a regional focus. In addition, these additional institutions can draw on private sector resources. Both the Confederation of Indian Industries (CII) and FICCI expressed strong interest in participating in selected activities. CII, through its Green Business Center, will be willing to assist in establishing a regional database on energy efficiency (drawing on its own extensive data base on Indian industrial energy audits). Both organizations are well networked in the region, and have a strong interest in promoting regional trade and investment, and, as mentioned, energy security is a specific interest.

The areas most amenable to cooperative training and capacity building (including those where Indian institutions/stakeholders are likely to make a contribution and to benefit from cooperation with other SARI/E countries) include:

- Rural electrification and rural energy 'solutions';
- Interconnection and operational issues related to regional power pools;
- Improved management practices (and "change management") in energy sector institutions particularly, distribution utilities whose staffs will require extensive reorientation and training to meet the needs of a competitive environment;
- Stakeholder involvement in the reform process (including consumer protection, improvement of service quality; and a voice in the regulatory process);
- Tariff and subsidy reforms; and
- Energy Security, a topic of particular interest to private sector organizations such as the Federation of Indian Chambers of Commerce (FICCI).

3.3 Nepal

Nepal's energy sector and national energy policy have been greatly influenced by the country's geography. The predominantly rural population is widely dispersed, in isolated village communities through much of the country's mountainous terrain. The population remains largely dependent on subsistence agriculture. Traditional fuels remain the most important source of energy for over 80% of the population. The consumption of commercial fuels on a per capita basis is among the lowest in the world (approximately 33 kgoe annually, as compared with India, where the figure is approximately 270 kgoe). The lack of employment opportunities in rural areas has resulted, as in many South Asian countries, in an exodus of younger male workers to urban areas within the country and to neighboring India. As a result the urban population has grown rapidly in the past two decades (dominated by the growth of Kathmandu, the capital city²). Only 15-17% of the country is electrified, and only twenty per cent of the population has access to electricity. There is great potential for hydropower (an estimated 83,000 MW; of which 45,000 MW is economically and technically viable, and only 400 MW have been exploited).

Energy Security: The country's dependence on imported petroleum products, and its dependence on exports of hydroelectricity to the Indian market places importance on the issue of national energy security. Although commercial fuels are a small portion the country's total energy requirements, they remain of critical importance to the economy. Consumption of imported refined petroleum products is the largest component of commercial energy demand. Under the terms of an agreement in 2002, these requirements will be met by India from crude imports from third countries expected to be in the range of one million tons annually.

The development of the country's vast hydropower resources assumes enormous significance because of its potential contribution to national economic growth, and to financing a more diversified energy sector. This diversification will involve the likely continued substitution of

² Eighty-eight percent (88%) of Nepal's total population lives in rural areas, of which only 5% receives electric power. Kathmandu: 235,160 535,000, Lalitpur, 190,000, Biratnagar 132,000, Bhaktapur, 130,000 (source: 1981 - United Nations Statistics Division.; source: 1993 - "Book of the Year 2000", Encyclopedia Britannica.)

hydrocarbon fuels (small diesels for electricity in rural communities, kerosene and LPG for domestic use), and the use of renewables. It has been long recognized that renewable energy sources of energy (small hydro, solar and wind, and biogas) can make a major contribution to Nepal's future growth, but these sources are expensive, and, as noted, require a major, and coordinated national effort for effective implementation. However, there are conflicting views among stakeholder groups on how the country's hydro resources should be developed. Environmental issues are a significant source of concern; security is another.

There is understandable national concern about relying exclusively on the Indian market for power. In the short run, however, exports to the Indian market on a bilateral basis, through a resolution of pricing issues³ remains the most viable option. In the longer term, however, the development of a regional market, in the long-run, based on a systematic effort to reduce both technical, and regulatory barriers among countries in the region can enhance energy security as a whole. This potential, with benefits for India and Bangladesh as well, has been well documented by the Four Borders Project feasibility study, supported by SARI/E. There is considerable stakeholder interest in pursuing this project further, and in creating a broad regional consensus on a more integrated approach to the development of Nepal's hydro resources. A broad-based dialogue between stakeholders can overcome political barriers.

Regulatory Reform: The limited size of the interconnected, centralized electricity sector, and small, dispersed load centers outside the main metropolitan areas has not encouraged major reforms. The focus of national policy has been on improving the operational efficiency of the Nepal Electricity Authority (NEA), the government owned utility, particularly in the area of distribution. This has been undertaken through a process of an 'internal' unbundling of NEA operations into generation/transmission and distribution as separate profit centers, accountable for their own profitability, and performance objectives. The eventual corporatization and separation of these divisions, and their privatization, remains a somewhat distant prospect.⁴

At present Independent Power Producers (IPP's) contribute more than 20% to total installed capacity. The recent adoption of a new "Hydropower Development Policy (2001)" establishes a Rural Electrification Fund and incentives to encourage rural power delivery through the development of small projects through the involvement of the private sector (<10 MW). There are also larger projects under development for production

Policy making in the energy sector is presently a dispersed activity., although the Ministry of Water Resources (MOWR) is the line ministry with overall responsibility for the development of both water and energy resources in the country. The Water and Energy Commission and its secretariat is responsible for the formulation of policy and establishing coordinated national energy policy.

There has been some discussion on the establishment of an independent regulatory authority. If this occurs, it is likely to occur through an expansion of the current responsibilities of the Electricity Tariff Fixation Commission (ETFC), formed in 1994 to regulate tariffs on a cost of service basis.

³The market particularly within India's the Northern Grid Region is of major significance, but Nepal tariffs have been double those of India's northern states during 1996/1997, attributed partly to the subsidies in India and partly to the relatively high generation transmission and distribution costs in Nepal.

⁴ A World Bank study on [Power Development in Nepal](#) recommends unbundling of the NEA with significant private ownership in distribution.

The ETFC's mandate included establishing a pricing regime to attract private investment in the sector. The commission is a quasi-independent agency under the direction of a full time chairman (representing MOWR), with commission members representing, in addition to the government, the regulated entities, the private sector, industry and consumers. Also represented on the Commission is the Department of Electricity Development, created to oversee licensing, and promotion of private sector involvement, and to oversee quality standards (for transmission and distribution) in the electric sector.

Since energy policy and water policy are closely linked, it is important to note that the principle problems. Institutional arrangements are characterized by an absence of a clear-cut separation of policy, implementation, and regulatory functions. The weaknesses of existing bodies in all these functional areas were noted in several stakeholder meetings.

Rural Electrification:

Expanding access to electricity in rural areas is a high priority for national energy policy and is reflected in the 10th 5-Year Plan. An additional 20,000 MW of hydropower capacity is a target for the next 25 years. As noted, the current hydropower policy places heavy emphasis on utilizing the country's underutilized hydro resources especially to serve rural populations.

Nepal's rural electrification and energy programs have been the focus of several bilateral and multilateral assistance programs for a number of years. The United Nations Development Program has been active in Nepal since 1997 through the Renewable Energy Development Program (REDP) and has been responsible for the introduction several rural electrification schemes, serving over 18,000 people in rural areas now have access to electricity in 15 districts; these are primarily mini/micro community level hydro systems. These schemes have helped to reduce the consumption of wood fuels (which, by some estimates, has been reduced by as much as 25%). REDP has been regarded as a relatively successful model and the World Bank has provided funds to expand the program into 10 additional districts. Also, the Alternative Energy Promotion Center (AEPC), funded by DANIDA promotes and implements off grid mini and micro hydro, as well as other small renewable energy generation technologies.

In the course of several discussions during the TNA it was noted that institutional impediments continue to be major obstacles to rural electrification projects and their sustainability. The lack of technical and managerial capacity at the district level to operate and maintain systems is a major obstacle. There is an urgent need to establish a national "extension" service to provide technical assistance and training to rural community organizations. Equally important from the perspective of the long-term sustainability of rural energy projects is the need to stimulate productive uses of energy, particularly electricity. This is especially the case if the current effort to encourage private investment in small 'off-grid' systems is to be a viable policy. Electrification must be tied to income generation activities, if such investments are to be profitable. These are problems that confront rural energy policy throughout the region, and there is active interest among several stakeholders in Nepal in regional collaboration to exchange information and experience in tackling these issues.

Mobilization of the Private Sector: To attract private investment, the HMG is making efforts to put a regulatory body in place and provide incentives to private developers of both large and small energy generation facilities. Several agencies are involved with promoting private sector involvement in rural electrification. These are the Water and Energy Commission Secretaria (WECS), the

Alternative Energy Promotion Centre (AEPC) and the Remote Area Development Committee (RADC).

Incentives to encourage private investment in mini and micro hydro include tax exemptions, lack of need for licenses for surveys, building and operating plants, lack of royalty imposed on electricity sales, private producers can set selling price. The passage of the Electricity Act of 1992 encouraged a number of survey licenses and MOUs to be issued. However, government instability, and its resulting changes in bureaucratic rules and personnel make it difficult for independent producers to invest with confidence. For example, a 15-year tax holiday for IPPs was arbitrarily eliminated, causing difficulty for the IPPs that did not have such an exemption grandfathered into their contracts.

Another barrier or frustration to the IPPs is that lack of understanding on the part of ministry or department staff who do not always understand Power Purchase Agreements from a legal standpoint, or all the clauses and their implications. Many IPPs spend a lot of time going through several levels of arbitration for dispute resolution of disagreements in contract implementation. In most cases, the government is found to be in the wrong resulting in fines, legal fees and a great deal of wasted time on behalf of government employees. There is not only one department that needs to understand the rules and mechanisms of these agreements. All related offices must be strengthened to eliminate interdepartmental conflicts over power development (such as the departments of treasury, finance, internal revenue, industry; etc.) and to standardize tax codes, import rules, etc., in accordance with the Hydropower Development Policy (1992). In short, while the government is keen to mobilize private sector investments and has introduced legislation to provide incentives for such investment, it remains a burdensome process.

3.4 Sri Lanka

Sri Lanka is almost totally reliant on hydropower as a domestic resource to generate its electricity and imports all of its crude oil, used for transportation and some electricity generation. Whereas high utilization of hydroelectricity is often a blessing, this over-reliance has caused many problems for the country since it has been very vulnerable to fluctuations in rainfall. To reduce this dependency, the Sri Lankan government has been trying to attract foreign investors to build independent thermal power plants, but it has had only guarded successes as it has yet to completely clarify its regulatory and investment policies. Despite the country's relatively small size, its net electricity consumption has doubled between 1991 and 2000, and future growth rates are expected to be comparable.

Because of waning hydropower resources, Sri Lanka turned to building thermal plants to fill immediate power needs causing the country's oil consumption to increase significantly. While some exploration work has been done in the north off the coastline of Jaffna, the most likely areas for future activity are offshore in the south, just to the north of Colombo. To further diversify its portfolio of energy resources, the country has been active in its exploration, promotion and development of energy efficient technologies, biomass, and wind energy resources

The government is also actively restructuring its electricity and petroleum sectors. Its liberalization program is likely to result in greater competition, more responsive pricing and higher levels of customer service. The shake-up of the electricity sector is, in part, a response to the immense

challenges Sri Lanka faces in rehabilitating and extending its grid from south to north and in meeting the demand for energy, which is increasing at a rate of 10 percent a year. The Ceylon Electricity Board (CEB), the state power company, is in the process of a restructuring program that will ultimately result in it being split into four distinct entities, thereby paving the way for more foreign investment in key areas like power generation.

Energy Efficiency. Sri Lanka's labeling program is being carried out by the Ceylon Electricity Board (CEB) and has progressed further than those in Bangladesh and Nepal. The TNA recommends the continued support of the Sri Lanka Energy Managers Association (SLEMA), an existing TIPs organization, to assist Nepal and Bangladesh to develop and implement local appliance labeling programs. SLEMA has continued to be in contact with counterparts in Nepal since their initial interaction in the SARI/E program. SLEMA has the in-house expertise to continue to assist Nepal (and Bangladesh), which at the same time would increase their exposure to international practices and lessons, and establish them as a leading body of expertise in the region.

The TNA team also found significant reason to broaden the scope of SARI/E's role in energy efficiency beyond consumer appliance standards & labeling programs. Even in countries such as Sri Lanka and Bangladesh where industrial activity is somewhat limited, industry still consumes a major portion of the base electricity load. Among the incentives to manufacturers to reduce energy consumption through efficiency measures include improving production efficiency and improving product-cost competitiveness. As industrial sectors grow in these countries, where electricity supply is currently inefficient to meet full demand, efficiency in industrial components, such as boilers and motors, will be essential. SARI/E may want to consider expanding its scope in efficiency to include building efficiency, industrial process and equipment efficiency (inc. energy auditing), opportunities for Energy Service Companies (ESCOs), and national energy efficiency strategies. Sri Lankan institutions have valuable and extensive experience in providing training, consulting services, and technical research/analysis in these areas to contribute to a regional audience.

Financial Sector Capacity Development: Sri Lanka's financial institutions have begun to finance small to medium-sized energy projects, but need greater expertise and exposure to financing mechanisms, international practices, financing large-scale projects, and knowledge of energy technologies. Furthermore, because they lack technical experience in the power sector, financial institutions (large and small) on the whole are hesitant to finance rural, renewable energy, or energy efficiency projects. Supporting these gaps in experience would facilitate the flow of funds through the energy sector for large and small-scale energy projects. Lessons and experience can be drawn from the Indian financial sector as well as international sources.

Executive Development and Training: Topics related to several aspects of the on-going electricity restructuring processes in Sri Lanka and Bangladesh arose during the TNA as being particularly sensitive issues to political leaders and influential decision makers in the respective countries. These topics included long-term energy planning, energy sector regulation, and cost-based electricity pricing, and they represent principles that key decision-makers in those countries have yet to accept as essential to the effective implementation of restructuring plans. A general lack of knowledge and/or misunderstanding of these issues must be resolved by high level decision makers before these countries will be able to identify and carry out necessary reform measures in those countries. Acceptance of these principles will also improve investor confidence in the market and increase much needed capital flows for energy infrastructure.

The underlying theme of this training would be to de-politicize electricity services and transfer decision making to a perspective that will best serve the development of equitable, reliable and affordable electricity supply. SARI/E may hold Regional Executive Forums for senior level policymakers, key ministers and agency heads (such as the Chairman of the Power Development Board in Bangladesh), to discuss and analyze international and regional experience, and the importance of appropriate and sound planning, regulation, and electricity costing policies. Real life forecasting models and case studies may be used to demonstrate the macro-level effects of electricity policy decisions and optimal resource use on the economy, un/employment, and the environment.

This issue was identified in similar scope and depth for Bangladesh, and may apply to India and Nepal, but was raised most strongly during the team's stakeholder discussions in Bangladesh and Sri Lanka.

Attachment IV: Common Regional Topics Issues

<i>Topic</i>	<i>Issues Identified</i>
1. Utility Management/ Change Management	<ul style="list-style-type: none">1.1 Lack of executive decision-making and general management skills1.2 Lack of knowledge/process for franchising/outsourcing utility management1.3 Lack of business skills & financial management skills for newly created unbundled entities1.4 Lack of customer orientation1.5 Lack of technical operational skills (e.g. load mgmt, load research, line mgmt, metering, wiring, energy auditing, efficiency and loss reduction)1.6 Lack of training programs that focus on influencing the framework through which policies are developed where managers:<ul style="list-style-type: none">1.6.1 Become more goal oriented and focused on accomplishing change in ways different from how things have traditionally been done1.6.2 Are clear that corruption does not need to be a part of doing business1.6.3 Are encouraged to “think outside of the box”
2. Rural Energy Delivery/Supply	<p><u>Overall Issues</u></p> <ul style="list-style-type: none">2.1 Insufficient comprehension of benefits of impact of improved energy delivery by policy makers and need to develop better policies2.2 Lack of awareness of what is being done/ similar experiences in the energy sector in other countries, including successes, failures, and lessons learned2.3 Lack of familiarity with available regional rural energy delivery models and their applicability to each SARI countries2.4 Inconsistent quality of management skills and services of rural cooperatives, franchises, and community user groups2.5 There are many institutes capable of providing technical training in the region, but none with a syllabus that is specific to the REB2.6 Significant need to expand training programs from upper level management to middle-to-lower personnel levels of distribution companies

Attachment IV: Common Regional Topics Issues

2. Rural Energy Delivery/Supply

continued

Grid Extension

- 2.7 Need of further knowledge and training regarding the redesign and upgrade of distribution networks
- 2.8 Insufficient skills in effective metering, billing, and collection
- 2.9 Need improved efficiency of end-use technologies (e.g. EE and RE)

Off Grid

- 2.10 Lack of skills in resource assessment at the local level (wind, solar)
- 2.11 Lack of adequate load / demand density (also Grid issue)
- 2.12 Lack of rural “extension” service (also Grid) – maintenance, operations, technical support
- 2.13 Lack of awareness of available and applicable off-grid electric generation options and technologies
- 2.14 Cost of power in rural areas, likely to be subsidized for a while

3. Energy Efficiency

- 3.1 Lack of familiarity and comfort with financing EE projects by banks
- 3.2 Lack of existing standards/consistent labeling practices across region
- 3.3 Lack of consumer product testing facilities and availability of a choice of products
- 3.4 Lack of consumer awareness/support regarding the importance of EE
- 3.5 Need for better EE in industry to improve local and global competitiveness
- 3.6 Lack of national government/policy support for energy efficiency in certain countries
- 3.7 Lack of understanding of how to implement EE at the end user level, (i.e. regulators need to know what DSM incentives to offer, how to promote, and how to offer incentives)
- 3.8 Limited sharing of energy audit information (lots of data/case studies that could be compiled into a data base and used for benchmarking)
- 3.9 Lack of incentives for market-based promotion of EE
- 3.10 Lack of private investment for industrial/commercial EE applications
- 3.11 Need for local, private EE institutions

Attachment IV: Common Regional Topics Issues

4. Regulatory Reform

Regulation

- 4.1 Lack of understanding of regulatory “best practice” procedures and standards
- 4.2 Lack of familiarity with staff on purpose, organization, goal setting, and objectives of regulatory body objectives
- 4.3 Few personnel with adequate training to run and staff newly created regulatory bodies

Regional Market Design

- 4.4 Limited experience and knowledge with regional commercial/ technical/ legal aspects of electricity spot markets and exchanges
- 4.5 Limited experience in developing regional power pools elsewhere in world
- 4.6 Tariff design and rationalization of tariff
 - 4.6.1 Limited acceptance of the cost of service tariff model
 - 4.6.2 Types of tariffs, structures, calculation, cost factors and components,
 - 4.6.3 Lack of understanding of impact of pricing upon regional power trade

5. Restructuring & Distribution Reform

- 5.1 Unfamiliarity with regional and international restructuring efforts, including successes and failures
- 5.2 Significant need to expand training programs from upper level management to middle-to-lower levels of distribution companies
- 5.3 Insufficient skills in efficient metering, billing, and collection
- 5.4 Need for significant management training in many areas, including: optimizing system design, standardization in equipment selection, commercial operation, management principles, MIS, commercial practices for billing and collections, loss reduction etc.
- 5.5 Lack of skills in training administration and delivery, including instructional techniques
- 5.6 Poor finance management and accounting, including financial monitoring and data collection – including financial planning
- 5.7 Lack of management leadership skills and managers capable of “thinking out of the box”
- 5.8 Problem of long-term non-payment by customers (especially in the agriculture sector)

Attachment IV: Common Regional Topics Issues

6. Banking and Project Finance

6.1 Lack of creditworthy public/private sector entities in S. Asian countries able to provide project security to lenders/ developers to secure finance for projects within a country

Banks with Experience:

6.2 Lack of detailed knowledge on 1) terms and skills in negotiating final project contracts, 2) preparing full financial documentation for financial closure of projects, 3) specific energy technologies, 4) risk mitigation/ credit enhancement mechanisms, 5) experience in larger-scale projects

6.3 Insufficient availability and inadequate terms of local funding for certain technologies

6.4 Lack of experience in understanding financing standards and practices used in successfully closed projects regionally and internationally

6.5 Lack of knowledge dealing with bi- and multi-lateral FIs as participants in the final financing packages

Banks without Experience (in addition to previous barriers):

6.6 Lack of skills in project due diligence and financial modeling of energy sector projects

6.7 Lack of skills in project versus corporate finance and in the financial closure process

6.8 Lack of understanding of, and experience in negotiating, security package documents and in understanding project risks

6.9 Lack of understanding of the project development process

Attracting Private Sector Investment

6.10 Inaccurate perceptions of project development risks by foreign investors

6.11 Lack understanding and appreciation by governments of the importance of the sanctity of contracts and written agreements to investors and banks

6.12 The lack of commitment, consistent implementation policies, and initiatives encouraging new investments between the various levels and agencies of governments

6.13 Lack of government's ability to make decisions due to lack of clear, precise policies and investment initiatives and opportunities within a country

6.14 Significant, un-addressed political and institutional risks associated with project development

Attachment IV: Common Regional Topics Issues

7. Information Sharing	<p>7.1 Lack of valid and detailed data and databases on the S. Asian energy sectors with which to prepare reports on national and/or regional activities</p> <p>7.2 Insufficient investigative reporting due to insufficient information from relevant agencies possessing information</p> <p>7.3 Lack of interaction with media and other organizations on a regional basis</p> <p>7.4 Lack of capability to exchange views with other journalists regionally and how they face similar problems and write them up in newspapers</p> <p>7.5 Alliances with non-media and/or political organizations causing reporting biases regarding stories or project initiatives.</p>
8. Consumer Awareness	<p>8.1 General lack of understanding of broad energy issues and problems within a region relating to technologies, finance, development, risks, and environmental impact</p> <p>8.2 Lack of familiarity with impact of theft on a utility's revenues, and the importance of electricity's and energy's role in economic development</p> <p>8.3 Lack of understanding of priority issues that country is seeking to achieve</p> <p>8.4 General lack of NGOs and consumer interest groups that are highly knowledgeable on electricity and energy sector issues</p>
9. Human Resource Development	<p>9.1 Lack of business/corporate outlook and a managerial orientation amongst even the senior level executives in the energy entities</p> <p>9.2 HR Programs are not closely aligned with the business goals and plans of the organization</p> <p>9.3 Lack of career development mindset and initiatives for employees of energy entities</p> <p>9.4 Absence of performance based management/advancement of employees (HR practices and policies do not encourage or reward high performance)</p> <p>9.5 Staff training (initial and on-going) not given high priority by organizations</p> <p>9.6 Very limited resources committed to human resource development and training hardly used as a vehicle for bringing about an improvement or change within the organization</p> <p>9.7 Employees remain in the same functional areas without any opportunities to upgrade knowledge or skills. Even on promotions or transfers, there are practically no career - linked training interventions</p> <p>9.8 Lack of experience in how to systematize existing training activities and ideas</p> <p>9.9 Lack of experience in creating and utilizing a useful Human Resources department within organizations</p>

Attachment V: Descriptions of Recommended SARI/E Activities

Implementation Modes

Implementation modes that are used to describe the types of capacity building activities throughout this plan are defined as the following:

- *Workshop*: One- to two-week classroom-style training activity at a venue located in the region for 30 to 50 participants.
- *Study Tour*: One- to two-week hands-on training that takes place at two or more regional or international venues for the purpose of visiting project sites and/or meeting with experts in the field, for 5 to 15 participants.
- *Web-Based Workshop*: Workshop module materials provided on-line with e-mail and/or web “chat” access to the instructors, and a one-time video conference session between participants and instructors.
- *Web-Based Resource*: Development of and access to a dedicated web page/portal specifically tailored to the module topic and maintained by a local institution.
- *Invitational Travel*: Travel within the region to SARI/E activities applicable to stakeholders/individuals who were not initially identified during the selection process. Invitational Travel would be contingent upon available space in the workshop/activity, and a case-by-case approval by USAID.
- *Seminar*: One- to two-day outreach or executive-level awareness/training activity to reach large numbers of the public at minimum cost, or to reach an insulated, select audience of busy executives whose support is necessary in a given area.
- *Conference*: One- to two-day conference-style activity designed to highlight key issues within a specific area, regional participant presentations, information exchange, panel discussions, and increase networking among regional stakeholders.
- *Degree-Oriented Program*: Long-term (9 mo.– 1 year), intensive, leadership development program that combines classroom training, site visits, and internships into a comprehensive program, upon completion of which, participants receive a specialized degree from an accredited academic institution.
- *Partnership*: Long-term partnership (1-2 years) between regional, or regional and international, organizations in the same stakeholder category to develop institutional capacity and exchange experience. Partnerships will be designed with specific goals and deliverables to demonstrate level of skill/knowledge transfer.
- *Exchange*: Exchange visit between executives or managers within the region to exchange information and share experience related to a specific, common issue.
- *Forum*: An established group/network of professionals in a given expertise (ex. Transmission, distribution) organized to share emerging experiences in support of capacity building in the sub sector and to help to hasten the process of reforms. Forums could meet on a semi-annual basis, and eventually become a self-supporting activity (through membership fees from the utilities).
- *Internship*: Two- to three-week placement of selected participants in a regional or international organization where the participant can work side-by-side with a mentor to increase his/her technical job skills and performance capacity.
- *Curriculum/Materials Development*: Development, updating and production of curricula and/or materials designed for a specific audience to be used in training and/or outreach activities in the SARI/E program and beyond.
- *Strategy Development*: Design of a strategic institutional development plan including the mission, objectives, appropriate activities, implementation/work plan, etc. (ie. Business strategy), conducted by a team of regional and international experts.

Attachment V: Descriptions of Recommended SARI/E Activities

TC1 Leadership and Management Development

(A1) Leadership and Change Management for Executives and Senior Management

Executive Seminar or Workshop

This one-week course is aimed at senior management of utilities and is designed to equip a team of leaders who can apply learned skills within their departments, and develop appropriate leadership within their individual organizations. Topics will include: understanding the importance and role of leadership; assessment of leadership skills; assessment of differing personal styles; approaches to conflict/ conflict resolution; consensus building techniques; empowering others; team building; and building leadership skills through training.

(A2) Annual or Semi-Annual Conference for Regional Utility Management Conference

(A3) Regional Executive Masters of Business Administration (EMBA) Program Degree-Oriented Program

This one-year, intensive MBA program is designed for mid- level energy sector executives, most of whom have engineering or other specialized backgrounds and experience working in utilities or other relevant energy sector entities. The program integrates a mix of standard MBA courses, a series of applied energy courses, and a brief internship/study tour to U.S. power sector institutions. The EMBA is implemented in collaboration with a respected, accredited academic institution in the region.

- please see Attachment VI for full description -

(A4) Utility Management for Mid-Level Managers Workshops (Series)

This series of workshops will equip technically trained electric utility managers with the conceptual, analytical and behavioral skills required to perform well as general managers. It will introduce participants to management concepts and skills using case studies from developing countries. It is designed to enhance and refine managerial and decision making capabilities, improve energy planning capacity in rapidly changing environments, assist in the development of comprehensive and responsive action plans, and enhance program implementation and monitoring. The series is designed for mid to senior-level electric utility managers.

(A5) Regional Utility Partnership/Exchange Partnership/ Exchange

(A6) Improved Management Practices in Distribution Utilities Workshop

This one-week workshop covers the principal issues involved in the effective management of a distribution company. The instructors will draw on their experiences with the financial, operational and general management of electric utility companies in the US and in the region. The course will cover topics in business planning, goals, objectives, customer service, finance, accounting as well as distribution planning and overall operations.

(A7) Distribution Operations and Loss Reduction Workshop

This workshop is designed for distribution company or utility managers and will help them to understand, evaluate, identify and regulate the technical losses in electricity distribution systems, and to optimize the alternatives for reduction of these losses using analysis and planning tools. The perspective will be to improve the overall quality of service and lower costs. Topics covered may

include: Introduction to the Technical Losses; Basic Concepts about Losses; Systems Modeling; Impact of the Losses in the Transformers; Losses in the Secondary Systems; Losses in Feeders; Losses in the High Tension Systems; Diverse Losses; Analysis of Real Systems.

(A8) Effective Management of a DISCO

Study Tour/ Invitational Travel

The objective of this study tour is to promote better management of distribution systems in the SARI/E region in order to address current concerns related to poor service quality and excessive losses. It is designed to give senior-level managers first hand exposure to effective management procedures (at one or more sites) so that they see, in person, the benefits that can be gained by implementing an efficient management system. Participants should be senior-level persons involved in the operation or management of distribution activities in key energy sector organizations. Topics covered during the study tour may include: commercial DISCO business culture, service orientation and productivity; consumer service and consumer care; quality and reliability of power; metering, billing and collection; distribution planning; modernization of distribution system; SCADA application; loss reduction initiatives; detection, monitoring and elimination of theft; distribution and transmission linkage; role of regulatory commission and regulatory issues; and transition issues in privatization.

(A9) Regional Forum on Distribution & Preparation of a Best Practices Guide

Forum & Materials Development

A “Forum For Emerging Practices in Distribution (FEPD)” is being established under the USAID bilateral program in India. A similar effort at the regional level will promote interaction and exchange on lessons learnt, amongst the existing and emerging interest groups (utilities, stakeholders) on an ongoing basis, about the various practices that have been/are being adopted, which have resulted in improved performance. Implementing partners could be BSES (TIP), NEA (Nepal), and DESCO (Bangladesh), and LECO (Sri Lanka), and the venue could be rotating/host might be NEA. The implementing partners may also form a team to prepare, publish and distribute a Best Practices Guide in Electricity Distribution in the region, which may include some international experiences.

TC2 Capacity Building for Regulatory Systems and Regional Markets

(A1) Role of Regulation and a Regulatory Body in a Restructured Energy Sector

Outreach Seminar

This seminar is intended for all stakeholders so as to enable the public to better understand the purpose of national power sector reform programs. It explains the benefits of restructuring and regulatory reforms and the way to develop a power sector reform program. It also demonstrates how to implement regulatory reform and restructuring for the power sector. Participants discuss characteristic elements of the power sector's structure and regulation and analyze these elements in the context of the region's electricity sectors. Discussions and team exercises explore the data availability and organizational structure in place to support restructuring and regulatory reform and identify specific changes necessary to support such reforms locally.

(A2) Creation, Operation and Management of a Regulatory Body

Workshops (Series)

A.2.1 Implementing Regulatory Reform: This workshop is designed to help regulatory commissions set up their day-to-day operations and procedures. It briefly reviews the concept, economic theory, and legislative roots of regulation, but focuses mainly on practical aspects and experience. The workshop will outline the primary objectives of regulation under alternative

regulatory models, the mechanisms by which such objectives can be achieved, and how a sound regulatory environment can improve the investment climate. The workshop is designed to help regulatory commissions set up their day-to-day operations and procedures. It reviews the concept, economic theory, and legislative roots of regulation, but focuses mainly on practical aspects and experience. There will be examples of enabling legislation, procedures, filings, and rulings. Highlight of this course is the opportunity for participants to walk through a rate case and participate in a mock regulatory hearing. Participants should be able to implement the operations of a regulatory commission and its staff, or to participate as utility managers or customers in the regulatory process.

A.2.2 Electricity Rate Setting and Tariff Design: This course is designed with two main objectives. The first is to inform policy makers and planners in government and utilities of the conceptual considerations of utility ratemaking, and the second is to provide fundamental training in the methods of ratemaking for future rate analysts. The course will provide participants with the understanding and tools required to 1) integrate rate tariffs with desirable economic policy objectives of government or the electric utility companies; 2) identify the data requirements of a professional cost allocation and rate design system for wholesale, retail and purchased power rate structures; 3) perform the tasks of a professional rate analyst, and 4) analyze the cost and rate significance of long-term electric system development.

A.2.3 Consumer Advocacy: The purpose of this course is to help participants gain a deeper understanding of the regulatory process and enable them to set up and implement programs which defend the interests of customers. Graduates of this course should be able to prepare utilities and commissions to interact properly with Consumer Advocates, understand the beneficial roles of Consumer Advocates, and be able to support the policies, legislation, and implementation steps required to develop progressive and useful Consumer Advocates.

A.2.4 Judiciary Aspects: This workshop will provide participants with experience of other countries with long traditions of regulatory jurisprudence. As regulatory commissions issue orders, particularly tariff orders, often following quasi judicial proceedings, legal challenges are made in the courts by interested parties, including utilities and consumer groups. Because this is a new legal territory for the Nigerian justice system, a need has been expressed for a workshop to expose key members of the judiciary to the basic rationale and mechanics of power sector reform, and the manner in which courts in other countries have handled it.

(A3) Regulation Incentives for Private Participation and Cross Border Interconnection Workshops

This workshop is designed for regulators, policymakers, utility executives, and energy developers to explore the regulatory tools for promoting private investment in cross border interconnection projects. The role of the regulatory body will be discussed, in addition to the need for coordinated cross border transmission planning, determining border region market capacity, grid access, impact of market restrictions, and the streamlining of permitting and siting requirements.

**(A4) Assemble, Publish and Disseminate a guide to international experience in regional electricity market development
Best Practices Guide Development**

**(A5) Harmonizing Regional Electricity Transmission
Workshop, Study-Tour**

TC3 Improving Energy Project Finance

Power Sector:

(A1) Introduction to Power Project Finance

Workshop

This workshop is designed for regional and commercial banks participants in the SARI region that have had minimal exposure with the development and financing of energy infrastructure projects. It is intended to provide bankers and possibly other stakeholder groups with the basic fundamentals relating to energy technologies, energy project development, and project financing. It will include relatively in-depth technical discussions relating to select energy sector and technology investments¹; project development, financing, project implementation; project contracts and agreements; project risks; project due diligence; project debt and equity; project documentation; and basic financial modeling skills using actual case studies and advanced models. The training will provide a detailed, but broad overview of these subjects, and it will include discussions of experiences in other countries in other SARI countries as well internationally. The goal of the course will be to provide a relatively detailed overview of each subject to allow participating institutions to develop a comfort level with the financing of energy sector investments.

(A2) Advanced Topics in Energy Project Finance

Workshop, Internships

This workshop is designed for representatives of regional and commercial banks in the region who may have already attended SARI/E financial training seminars and/or who have already had some role in the financial closure of projects. It is intended to provide local bankers with advanced skills in the financing and closure of energy infrastructure projects, to enable them to take the lead in structuring, negotiating, and closing projects in the future. In addition to providing advanced discussions of many topics discussed in the basic financial training, this course will provide additional coursework in topics such as large power project development & financing, advanced project due diligence and financial modeling; negotiating tactics and skills; and the project financial loan documentation process. The course will place special emphasis on discussing the structuring and credit enhancement details of other recent projects, which allowed them to achieve financial closure internationally and in the SARI region. It specifically examine detailed international and local case studies of successful and unsuccessful projects, describing agreements, negotiations, credit enhancements, and required documentation.

Following completion of the workshop, SARI/E will request applications for internship placement from bankers working with this level of understanding to complete a three to six week, on-the-job training program (as an internship) with an expert in energy project finance. SARI/E will match interns with an appropriate expert in the region or third country.

(A3) Developing and Financing of Energy Projects for Commercial Finance

Workshop

This course is targeted to a range of SARI stakeholder groups that have had minimal exposure with investors and financial institutions and their requirements to develop and finance energy infrastructure projects. Its purpose would be many: to educate stakeholder groups (1) on the fundamentals relating to energy technologies, energy project development, and project financing, (2) the needs of, and alternative investments available to, private investors in SARI and other countries, (3) the requirements, security requirements, and covenants of banks in lending to projects, and how

¹ For example, in rural energy supply, energy efficiency, generation projects, renewable energy technologies, distribution, unbundling and operations, gas trade.

banking requirements often dominate the structure of a transaction, and (4) the importance of successfully mitigating project risks. The training will provide a broad overview of these subjects and seek to expand the trainees understanding of all aspects of these and other subjects. To provide perspective, the training will include cases studies of investor and banking experiences in other countries. The training may be slightly modified in different countries to address the needs and interests of specific stakeholder groups such as 1) policy makers/ government agencies, 2) companies and local developers, and 3) NGOs, Consumer advocates, and media.

(A4) Development and Financing of Energy Efficiency Projects

Workshop (Web-based)

This training program is designed for bankers, financial decision-makers, project developers and other financial intermediaries interested in providing or obtaining financing of local energy efficiency projects. The course will provide participants with enhanced analytical tools and technical understanding of energy efficiency projects and promote cross training in evaluation of “bankable” and economically viable projects. Participants will develop or strengthen the analytical tools and technical understanding of energy efficiency projects required to properly evaluate the technical and financial risks.

(A5) Development and Financing of Renewable Energy Projects

Workshop (Web-based)

This training program is designed for bankers, financial decision-makers, project developers and other financial intermediaries interested in pursuing financing or development of renewable energy projects globally. The course will provide participants with enhanced analytical tools and technical understanding of renewable energy projects and to promote cross training in evaluation of “bankable” and technically and economically viable projects. Participants will develop or strengthen the analytical tools and technical understanding of renewable energy projects required to evaluate the technical and financial risks of the projects. All participants will learn to understand the economic and technical fit between renewable energy and the sector at large.

Gas Sector:

(A6) Natural Gas Contract Negotiation

Workshop

This one-week course is intended for government officials and professionals of the gas sector involved in preparing, negotiating, and managing the long term exploration and production (E&P) agreements and long term gas sale and purchase (GS&P) agreements. Negotiations of E&P agreements are conducted between the GON officials/professionals and the international oil companies involved in bidding for E&P blocks. For those blocks being successful in discovery of natural gas, negotiations of GS&P and management of the E&P agreements become essential. E&P agreements, as well as long-term GS&P agreements are essential for further development of oil and gas industries and attracting greater foreign investment in the gas sector. While the principal objective of the course is to cover the principles and provisions of E&P and GS&P agreements, topics will be discussed in the overall context of the integrated chain of gas activities from reservoir to market with emphasis on the gas industry development.

(A7) Financing Cross Border Gas Pipelines

Workshop

This workshop is designed for government officials and gas sector executives likely to be involved in development and financing of international gas projects. The topics will include basic modes of project development and financing and their pros and cons, financing sources, guarantees and overcoming cross-border risk will be covered.

**(A8) Pricing of Natural Gas for Export/Import
Workshop**

This workshop is designed for government officials and gas sector executives likely to be involved in gas price negotiations or approvals. There is a significant potential for gas exports from Bangladesh to India, with potential foreign exchange earnings roughly in the range of \$500-\$1000 millions per year, based on a level of 5-10 BCM (billion cubic meters) per year. Even if a policy decision is made by the Bangladesh government to export gas, a mutually acceptable price will have to be worked out between the two sides. The workshop will familiarize the participants with basic factors, principles, and practices in international gas pricing; such as parity with an internationally traded petroleum commodity, netback pricing based on replacement value of existing fuels, etc. Case studies based on gas trading elsewhere in the world will also be presented.

**(A9) Negotiating International Gas Sales & Purchasing Contracts
Workshop**

This workshop is designed for government officials and gas sector executives likely to be involved in negotiating or approving international gas sales and purchase contracts. This workshop will focus on major provisions of long-term international natural gas sales and purchase contracts, including the issues of guarantees and handling of risks, commercial, operational and financial matters, and project financing. The workshop will include simulations in which the roles of lead negotiator, supporting analyst, and legal advisor will be exercised.

Cross Sector:

**(A10) Information Center for Energy Finance
Web-based Resource**

(A11) Creating and Sustaining an Environment for Attracting Private Investment (Executive Seminar Series)

The purpose of this series of seminars would be to bring together developers and private equity investors, regional and international bankers, and other key stakeholder groups in a country to exchange information on the concerns and needs of investors, the needs of and demands placed upon policymakers and governmental organizations, the concerns of public interest groups, and the needs and requirements of the media. A secondary objective will be to provide host-country representatives with an opportunity to present investors with priority investments and opportunities within their countries. The seminars would discuss investor needs, the significance of barriers to investment (see previous table), and specific concerns on risks. Special focus will be placed on the importance of honoring project agreements, performance guarantees, and project tariffs. The seminars would also provide an opportunity for host-country government representatives to “roll out” some of their high-priority and more prominent investment and policy initiatives.

TC4 Media Capacity Building

**(A1) Introduction to Energy Issues
*Workshops, Web-based***

A series of workshops designed for local journalists and media representatives. The purpose of these workshops is to raise the level of awareness about important energy issues in order to increase the quality of reporting on energy related matters. Participants will gain relevant knowledge and exposure to current energy issues, which will result in more clear and informed reporting to the consumer. Workshop topics may include industry infrastructure, financing, regulation, etc

**(A2) Information Center for Energy Data and Resources for Media
*Web-based Resource***

**(A3) Study tour for journalists to noteworthy/controversial regional energy projects
*Study Tour***

**(A4) Participation in other SARI/E module training workshops/outreach seminars
*Invitational Travel***

TC5 Consumer Awareness Campaign

**(A1) Developing and Conducting Consumer Awareness Campaigns and Activities in Energy Issues
*Workshop***

**(A2) International Experience in Energy Consumer Awareness
*Study Tour***

**(A3) International and local/regional NGOs and Consumer Advocacy Organization Partnerships for on-going skill transfer
*Partnership***

TC6 Rural Electricity Service Institution Building

**(A1) Support to the REB for course development in providing rural electricity services
*(Curriculum/Materials Development)***

**(A2) Support to the REB in institutionalizing provision of training services to external clients as a sustainable center for training in the region
*(Strategy Development)***

**(A3) Creating, Managing, and Operating a Sustainable Rural Electric Utilities
*Workshops (Series)***

The purpose of this series of workshops is to strengthen the rural electrification movement in SARI/E countries, by involving diverse groups of stakeholders in the process. An introductory workshop will familiarize policymakers, utility executives, bankers and other key stakeholders with potential innovative approaches for allowing remote, rural communities access to commercial energy or traditional energy sources. Successful models from around the world for rural energy supply

discussed, as well as policy approaches that make rural energy supply more feasible and sustainable in the SARI/E region.

A workshop specifically addressing rural electrification models will explain the philosophy of member owned and democratically managed electric cooperatives, principles of cooperative organizations, electric cooperative organization structure, operating standards and methodology utilized in developing an independent rural electric cooperative (such as the Bangladesh Rural Electric Cooperative Program). Other successful approaches may include Nepal's Leasing of Mini-Grids to the Private Sector and selected non-grid (e.g. PV) cases, and their implications for application under a restructured energy market. It is designed for government officers, electric utility senior management personnel, financial institutions that support development of electric cooperatives that encourage economic and social improvement to the member and service area.

Detailed workshops on the requirements, structure, and operations (administrative, financial, technical) of successful rural energy service companies, and the analysis of alternative business plans for specific rural energy markets would be also designed for current and future rural energy managers and executives.

A workshop on Rural Energy Service Companies² (RESCOs) may also be considered. Course modules will include (1) renewable energy market identification and characterization, (2) overview of alternative RESCO structures, with examples drawn from actual RESCO enterprises in Asia and elsewhere, and (3) development of illustrative business plans including a cash flow analysis of these plans. Presentations would be made by individuals actively engaged in RESCO operations (e.g., Shell/Community Power Corporation RESCOs in the Philippines, the Rural Energy Services Project – RESPRO – in Ghana, the Solar Electric Light Company initiatives in Vietnam and China, etc.). The advantages and limitations of RESCOs viz-a-viz other business models (rural electric cooperatives, outright sales, leasing, etc.) would be presented.

**(A4) Attracting Private Participation to the Distribution Sector
Workshop**

This one-week course is intended for senior government officials from the Ministries of Energy, Finance and Planning, and senior utility/distribution company executives involved in making policy decisions about issues affecting international investment in electricity distribution. Topics will include the function of Regulatory body, tariff rationalization, contracting terms and conditions and other important factors relating to international investment in the distribution, and regional experience in this regard over the past 5-10 years will be discussed, as well as impediments, if any, to greater levels of investment with respect to PSC terms and conditions. These issues will be covered in the context of international trends and with examples from other countries seeking to attract international gas sector investment.

**(A5) Successful Rural Electricity Delivery Projects and Models
Study Tour**

This study tour for policy makers and energy developers would be comprised of site visits to selected, successful rural energy enterprises (i.e. cooperatives). Participants would also discuss existing and emerging "best practice" examples of rural electrification programs and projects, and lessons from less successful efforts, with the enterprise executives and related government officials. Success cases will

² RESCOs are companies that act as rural energy utilities, retaining ownership of the energy equipment and taking responsibility for operation and repair, with customers paying periodically (e.g. weekly, monthly) a fee for service. In case of rural electrification, both DC and AC energy services can be provided, using a mix of renewable and hybrid power systems. The end use customers do not assume either financial or technical responsibility for the equipment, although they are required to use it properly.

include systems based on both renewable and conventional energy. As the power sectors of the countries in the region are in varying stages of reform and restructuring, the overall content of the course would be "forward looking" in that presentation would emphasize reform and restructuring matters.

**(A6) Managing Grid Maintenance in Rural Areas
Workshop**

This workshop is designed for government and utility officials involved in rural electrification and rural development, private entrepreneurs, and regulatory officials. The workshop will cover rural communities' options to access electricity on a mini-grid structure, particularly in remote, hard-to-access areas. It will address technical issues that utilities face in dealing with generation, distribution, dispatch, operation, and cost effective maintenance in rural areas, and market demand assessment. Options for micro- or mini-grid management, particularly regulations such as market entry, licensing, legal status, regulatory risk (grid extension), access and availability issues, area coverage, universal service obligations, and quality will also be covered. Cost/benefit analysis for communities considering mini grids will be explored, as will the financial viability of a mini grid, load levels and growth, and customer tariffs. Grid financing and subsidizing, cross-border issues, and different business models for grids will also be included.

TC7 Human Resource Development & Management for Energy Utilities

**(A1) Designing, Operating and Managing an Effective Human Resources Development Program
Workshop (repeated)**

This course explores key components of designing and developing effective human resource development (HRD) systems to increase productivity and profitability within the energy sector. Procedures that have been introduced with great success by industry are discussed. This includes organizational strategies, innovative work practices, efficient technology transfer systems, and succession planning. The workshop also deals with modern concepts of adult learning, manpower planning, and the technology and effective management of human resource development systems. When applied collectively and incorporated into a totally integrated system of human resources management, these programs can speed the progress of energy sectors.

**(A2) Developing In-House Training Capacity
Workshop, Web-Based resources**

This course is for mid-to-upper level managers involved in the design and delivery of training programs, as well as management of the training function. This workshop focuses on the characteristics of the adult learner and the learning process. The aspects of instructional technology addressed include: needs analysis, defining learning objectives, lesson design and development, training aids, instructional methods and media, platform skills, and program evaluation.

TC8 Regional Energy Efficiency Support/Initiative
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- (A1) Development of energy efficiency database structure and web-based operation**
Web-based Resource
- (A2) Collection and input of data in collaboration with regional energy efficiency organizations**
Web-based Resource
- (A3) Assist organizations in the revision and updating of existing training curricula & regional access to curricula**
Curriculum/Materials Development
- (A4) Facilitate travel and/or communication support between energy efficiency labeling organizations upon request, as follow-on to SARI/E I Energy Efficiency Labeling program**
Invitational Travel
- (A5) Designing a National Energy Efficiency Strategy**
Workshop
- (A6) Policy Incentives to Encourage Market-Based Energy Efficiency Initiatives**
Workshop

Attachment VI: EMBA Description

Executive Leadership Development for the South Asia: Energy MBA Program

Background

A successful, USAID-sponsored model Energy MBA program was implemented in the Ukraine between 1997-2002. This one-year, intensive MBA program exposed five promising groups of mid-level energy sector executives, most of whom had engineering or other specialized backgrounds, to a mix of standard MBA courses, a series of applied energy courses, and a brief internship/study tour to U.S. power sector institutions.

This MBA program helped create a new wave of future energy sector leaders well versed in state-of-the-art concepts of business and utility operations, to complement their previous specialized education and utility experience. Participants gained the management and business skills to help them become the driving force behind the new Ukrainian power sector as it operated commercially in a market economy.

Energy Executive MBA Program for the South Asia Region

The same concept is recommended for the South Asia Region under the SARI/E program. This Energy Executive MBA Program (EMBA) program, patterned after the Ukraine Energy MBA Program, would use a proven, quality approach to address energy sector needs in a geographical region comprised of countries facing similar challenges. A highly trained cadre of professional managers to oversee and operate the sector's institutions that can overcome the challenges of creating an efficient, truly commercial energy sector is a critical, recognized priority in SARI/E countries. In addition to providing direct educational benefits, the EMBA will foster professional relationships between energy sector professionals throughout the region, and provide a forum for mutual exchange of successful ideas. In this scenario, the program will yield the additional benefit of providing a rare opportunity for future energy leaders or senior professionals from neighboring South Asian countries to come together for a year in an intensive, academic environment, fostering close relationships, which may facilitate future cooperative ventures. The program would consist of:

- 19 core courses
- 6 specialized energy courses
- Business English language training
- US-based Internship/Study Tour, and Master's Project

Implementation

Like the Ukraine program, the South Asia Executive Energy MBA program is recommended to be implemented in collaboration with a reputable Indian institution that currently offers a quality MBA program. The Indian partner would provide standard courses in management, economics, finance, and other basic business-related topics. The SARI/E contractor would be responsible for overall program coordination and management, as well as for the applied special energy curriculum and U.S.-based internship and study tour. The Delhi-based SARI/E would also be involved in handling program logistics.

Program Curriculum

The specialized one-year curriculum of the EMBA would include:

1. Core management, financial, accounting and economics courses that are essential for market-based operation of companies and regulatory agencies;

2. Applied, specialized courses covering specific energy-related subjects critical to the management, planning and operation of electric utility companies and regulatory agencies, such as ratemaking theory and practice, competitive electricity market development, integrated resource planning, evaluation of energy investment (including IPPs), strategic utility planning, and organizational change management, taught by leading international practitioners from the field.
3. The program may allow a number of specialized tracks, such as Energy Finance; Utility Management with a focus on the Power Sector; and Energy Sector Regulation.
4. A real-world consulting project/case study dealing with specific current problems faced by a utility company or a major customer demonstrating real world economic, social, and political constraints on executive management decisions and providing opportunities for innovative thinking.
5. A U.S.-based study tour with visits and discussions with key players in the U.S. power sector (including state public utility commissions, private and multilateral financial institutions and rating agencies, an operating power pool), and a weeklong internship at a US utility covering all aspects of its operations.

Specialized Energy Management Curriculum & Internship/Study Tour

The recommended EMBA curriculum would consist of the following components:

- Core management, financial, accounting and economics courses essential to the operation of privately-held companies and regulatory agencies;
- Key industry courses covering specific energy-related subjects important to the management, planning and operation of electric utility companies and regulatory agencies;
- Courses on presentation skills essential to providing effective communications;
- English language training necessary to operate in the international community;
- In-country consulting project in the energy sector (working with a faculty member and other participants in the MBA program); and
- A U.S.-based internship and study tour in the appropriate energy branch/industry.

The **specialized energy management courses** are designed and conducted by leading practitioners in their respective fields to cover specific energy-related subjects important to the management, planning, and operation of energy sector entities. The following special energy courses were included in the Ukraine Energy MBA Program, and provide a sample of the specialized energy curriculum that could be also developed for this program.

1. Economic Evaluation of Energy Investment Projects
2. Utility Strategic Investment Planning
3. Electricity Market Development
4. Tariff Design and Ratemaking with Utility Accounting Overview
5. Change Management: A Human Resources Perspective
6. Change Management: Corporate Planning for a Utility

The Appendix includes more detailed descriptions and outlines, and the recommended core business curriculum.

The curriculum includes a two-week **internship and study tour** of the United States. There are a variety of options for the study tour portion of the program. During these two weeks, participants could spend time in/with any of the following places/organizations:

- Financial organizations: investment banks, stock exchange, credit rating agencies.
- Specialized organizations: the largest independent system operator (ISO) in the United States (PJM Interconnection)
- Public Service Commissions and privatized utilities

During the internship portion, participants would spend time in small groups on-site at an appropriate U.S. utility covering every aspect of utility management and operations. All participants would then reconvene in Washington for meetings with bi-lateral, multilateral funding agencies, and organizations currently working within the South Asian energy sector.

Participant Selection and Eligibility

The participants should be required to meet certain minimum qualifications with respect to their education and work experience in the energy sector. Normally, prospective participants will have completed the equivalent of a bachelor's degree, have some energy sector experience, and will be nominated by their respective employing institutions. In addition, it is recommended that each candidate nominated undertake a binding agreement to continue to work for the nominating institution upon completion of the program for a minimum period.

Special Energy Course Descriptions

1) Economic and Financial Evaluation of Energy Investment Projects

This course was designed to develop the participants' ability to handle the concepts of "time value of money." After completion of the course, participants understood the concepts of compounded interest, cost of capital, inflation effects, rate of return, net present value, cost-benefit analysis, and learned how to apply these concepts to the analysis of electric power utility investments.

Outline

- I. Introductions & Objectives
 - A. Outline and Schedule
 - D. Levelized Values
 - 1. Formula
 - 2. Examples & Work Problems
- II. Characteristics of the Power Sector
 - A. Historically considered a natural monopoly
 - B. Divided into Generation, Transmission, and Distribution
 - C. Regulated Service Areas or Government Ownership
 - 1. Objective of Regulated Utility/Regulators
 - 2. Regulatory Compact
 - D. Types of Utility Costs
 - E. The Revenue Requirements Formula
 - E. The Fixed Charge Rate
 - 1. Purpose and Calculation
- III. Time Value Concepts
 - A. Future Values
 - 1. Formula
 - 2. Compounding and Escalation Rate Examples
 - 3. Examples & Work Problems
 - 4. Guidelines
 - B. Present Values
 - 1. Formula
 - 2. Examples & Work Problems
 - 3. Guidelines
 - C. Uniform Series (Annuities)
 - 1. Present Value of a Uniform Series
 - a. Formula
 - b. Examples & Work Problems
 - 2. Uniform Series Equal to a Present Value
 - a. Formula
 - b. Examples & Work Problems
- IV. Busbar Cost Analysis
 - A. Purpose
 - B. Examples & Work Problems
- V. Minimizing Costs in a System-Wide Context
 - A. Capacity Expansion Planning
 - B. Cumulative Present Worth
 - C. Breakeven Analysis
- VI. The Move Toward Competition
 - A. Problems with Regulation
 - B. Solutions
 - C. RFP
 - D. IPP Market
 - E. The Merchant Power Market
- VII. Evaluating an Independent Power Producer (IPP) Project
 - A. Pro Forma Analysis
 - B. Discounted Cash Flow Analysis
 - C. Constructing a Pro Forma
 - D. Case Study: Competing IPP Projects, A Government Perspective
- VIII. IPP Contracts and Pricing Formulas
 - A. Objectives of the Power Purchase Agreement
 - B. Pricing Formulae

2) **Utility Strategic Investment Planning**

The course consists of following modules:

1. **Utility Planning Framework:**

This module covers discussion on overall process of utility planning, planning constraints, relationships amongst technical, financial and strategic planning and concepts of short, medium and long term plans.

2. **Technical Planning**

In this module, demand and supply side planning methodologies are discussed. The discussion on demand side planning will deal with methods of demand projection, management and conservation. Supply side discussions will include evaluation of supply options, preparation of generation plan, transmission and distribution plans and projections of power balances.

3. **Financial Planning**

Basic concepts of financial statements (income, cash flow and balance sheet) and principles to check the financial health of a utility (performance ratios etc) are reviewed. Future projections of financial statements, capital budgeting for future investments and impacts of new investments on the projected financial health of the utility could be discussed

4. **Strategic Options**

Evaluation of strategic options based on technical and financial projections are discussed. This would include options such as demand management vs. capacity expansion, choices of sizes of plants and technology, utility expansion ROE/ROA vs. long term sustainability, short term vs. long term plans, grid expansion vs. locations of generations, distribution investment equity vs. debt financing debt terms, restructuring and downing sizing, metering and bill collections, financial management, corporatization, commercialization, tariff strategies, etc.

5. **Risk Assessment and Scenario Development**

This module covers identification of technical and financial risks of projects, investments, operation and risks associated with various strategies. Discussion will also focus on iterative nature of strategic planning and development of various scenarios.

3) Electricity Market Development

Outline

1. Establishing A Power market

- Power Sector Strategy
 - National and regional targets
 - Unbundled systems/utility segmentation
 - Indicative planning
 - Company specialization,
 - Open access and competition.
 - Centralized planning and integrated companies
- Institutional Market Roles
 - Regulated functions
 - Transparency and stability
 - Laws, Courts and stability
 - Competitive environment
 - Service Obligations
 - Risk management
- Contracts
 - Types and purposes
 - Supplier Contracts
 - Limitations
- Market Economic Base
 - Prices and tariff systems
 - Creating a climate to promote private investment
- Market Investment Needs
 - Capital
 - Assets
 - Technology
 - Management.
- International Trading Considerations

2. Wholesale Market

- Targets and Minimum Requirements
- Technical and Commercial Market Structures:
 - Compatibility
 - Rational use of resources and infrastructure
 - Sending the correct economic signals
 - Prices
 - Charges
 - Compensation
 - Participant agent types

- Dispatch Center Functions
 - System operator
 - Market administrator.
- Markets
 - Short-term (spot) market
 - Medium and long term (contract) market
- Services Transactions
 - Transmission
 - Ancillary services
 - Dispatch
- Settlement System
 - Invoicing
 - Collections
 - Payments
 - Reciprocated obligations
 - Non-compliance
- Commercial Measurement Systems
- Quality of Service
 - Wholesale Quality
 - Reliability

3. Short Term Markets

- Objectives
- Economic Dispatch Limitations
 - Competition and variable costs
 - Cost recovery
 - Opportunity cost
 - External Pricing
 - International interconnections and offers
 - International interconnections
 - International prices and competition
- Thermal generation
 - Variable costs
 - Fixed costs
 - Payment criteria
- Hydroelectric generation
 - Water value and substitution value.
 - Scenarios and horizons,
 - Random situations,
 - Future strategies
 - Maximizing profits
- Capacity and reliability
 - Treatment of capacity payments
 - Reliability assurance

4. Energy Spot Prices

- Objectives
- Production costs:
 - Short-term marginal costs
 - Offered prices
- Costs of non compliance
 - Voluntary demand reductions
 - Forced rationing
 - Price and the risk of failure
 - Operational reserve

5. Capacity Payments

- Fixed Cost Recovery Methods
 - Energy sales
 - Reliability sales
 - Supply guarantees
- Capacity Products
 - Reserve requirements
 - Availability.
- Pricing Fixed Costs
 - Investment reference cost (book value)
 - Actual capacity cost (market value)
 - Failure costs

- Capacity Price Elasticity
 - Demand cost and payments
 - Voluntary demand reduction
- System Capacity Needs
- Capacity and Demand payments

6. Medium and Long Term Agreements

- Objectives
- Contract types
 - Opportunity price and contract price
 - Contracts between generators
 - Supply contracts with distributors and large users
 - Physical and financial components
- Power Purchase Agreements (PPA) and Market Based Contracts
 - Potential risks
 - Risk management and sharing
 - Conditions and terms
- Competition in the Contract Market
- Import and Export Contracts

4) Tariff Design and Ratemaking, with Utility Accounting Overview

Outline

- I. Introduction to Uniform System of Accounts for Public Accounting.
- II. Financial Statements and Reporting by Public Utilities.
- III. Operating Revenues, Operating Expenses, Rate Base Development and Revenue Requirement for Utilities
- IV. Tariff Philosophies and Approaches & Role of Regulator.
- V. Cost of Capital, Rate of Return, Role of Profit
- VI. Cost of Service Concepts, including Accounting Cost of Service and Economic Marginal Cost of Service.
- VII. Rate Tariff Structures and Designs

5) Change Management for a Utility: A Human Resources Perspective

This course was designed to show the relationship between the broad trends and changes in power sector reforms and their impacts on human resources within a utility (for example rationalizing manpower, increasingly specialized jobs, etc.). The course reviews human resources principles and re-examined them in the context of ongoing reforms. Such principles include: establishing clear lines of accountability; defining roles and responsibilities of staff; linking reward to performance in a performance management system; linking human resources subsystems such as training and career planning; outlining employee discipline; etc. Key issues addressed also include the change of strategic culture and adoption of new capacities to support restructuring and reforms; identification and development of leaders with the capacity to drive new entities (i.e. entrepreneurial, business-minded managers); use of training as a vehicle for change; creation of a new corporate outlook; communication focused on change, including public awareness and support for reform; and cultivation of utility managers with enhanced understanding and effectiveness with respect to reform leadership.

Outline

- I. Leadership - At the end of the session the participants will be able to
 - Identify the leadership skill needed in his organization,
 - Identify the traits of an innovative and passionate leader,
 - Facilitate subordinates in doing their job in a better way.
- II. Role of the Top Management - At the end of the session the participants will be able to
 - Identify the various functions of the Top Management,
 - Identify the skills required for Top Management,
 - Prepare own job description.
- III. Aligning Organizations for Superior Performance - At the end of the session the participants will be able to
 - Identify the characteristics of superior performance & global excellence,
 - Identify the connection between leadership and quality,
 - Ensure mission, vision, values and objectives of the organization are dovetailed into individual and team plans,
 - Identify the process of incorporating creativity in the organizational system,
 - Identify the necessity of empowered teams in organizations and the process of developing them,
 - Identify the process of transformation for competitive excellence,
 - Identify the approaches towards aligning organizations.
- IV. Change in Organizational Cultural: Managing People for Change - At the end of the session the participants will be able to
 - Initiate behavior change in the organization,
 - Motivate people for improved performance.
- V. Conclusion
 - Q&A Session
 - Action Plans (what will participants do with what was learned)
 - Participant evaluation of the course (conducted by SARI/E contractor)

6) Change Management: Corporate Planning for a Utility

In an era of capital scarcity, it is increasingly important for SARI/E countries to apply the most cost-effective options for providing electricity services. This requires an integrated evaluation of all available options for meeting electricity service demands, including utility investment to improve end-use efficiency. This course covers the principles and practice of integrated (least-cost) resource planning and strategy formulation for electric utilities with a focus on evaluating options with corporate interests in mind. Participants learn to creatively consider the full range of options that may be available to utilities in order to meet demand, including the improvement of end-use efficiency (demand-side management), an area new to most utilities in the region. Investment analysis procedures are also addressed, with an aim to familiarize participants with concepts such as risk analysis, before- and after- tax ramifications on project analysis, and borrowed-money financing.

Core Business and Management Courses

1) Financial Accounting

To make effective managerial decisions and to get results, it is of utmost importance that managers have information with respect to their resources and sources of financing. Such information is necessary for outside entities to evaluate the enterprise's performance. Financial accounting provides this information. The course introduces the participants to double-entry bookkeeping and to basic financial statements, “balance sheet”, “income statement” and “cash flow statement”. It also provides an understanding of accounting methods, standards, and terminology for participants to interpret and evaluate financial statements.

Related technical issues such as asset valuation, depreciation practice, formation of and change in owner's equity are examined.

The goal of the course is to provide the participants with:

- The origins and formation of accounting policies;
- Knowledge of the methods of the gathering and systemization of information of state enterprises
- Necessary skills to analyze economic operations in the financial accounting system
- Methodology of the preparation and presentation of financial statements
- Knowledge of the fundamental differences between the Ukrainian accounting system and international accounting standards

During the Financial Accounting course, the participants will gain confidence and the necessary tools to participate in South Asian countries' transition to international accounting standards and statements.

2) Managerial Accounting

In this course, participants learn how to use accounting controls to operate a firm successfully. The topics covered in the course include basic cost concepts, short and long-term decisions and capital budgeting, the behavior of costs, full costs and their uses, variable costing, responsibility accounting, and analyzing and reporting performance.

Preparation of managerial decisions, planning and control of the performance of the enterprise requires tight cooperation between managers and accountants. Today's manager should know the fundamentals of accounting and calculations of costs of production, be able to use the accounting data for the planning and control of the distribution, subsidiaries, necessary in such a way to interpret the accounting information depending on the character of the decision which needs to be made.

The participants of the MBA program will acquire such knowledge and skills:

- conception and organization of managerial accounting;
- classification and behavior of expenditures and revenues;
- principles and methods of the calculation of expenditures and revenues;
- analysis of the correlation of the expenditures, the scope of the activity and profit;
- analysis of the taking current and long-term decisions, budget planning and control; and
- system of managerial control and accounting from the centers of responsibility.

Necessary emphasis is placed on the participant's mastery of the fundamental financial accounting and understanding of various aspects of enterprise management. This course provides the steps to study of such courses as: Financial Accounting, Management, Business Economics, Organizational Development.

3) International Accounting

This course describes the functions of international accounting, focusing on such issues as foreign currency transactions, financial statement translation, inflation, auditing and taxation. A comparative approach is stressed. International systems and principals of accounting are studied in relation to the development of global market and foreign economic relations. Participants also learn the practical use of financial reports and the problems faced by accountants when implementing them. Special attention is paid to international accounting standards as a viable instrument to harmonize accounting practices in different countries around the world.

4) Auditing

One of the problems of auditing has been that it is not possible to simply transfer the experience of other countries to South Asian countries. This has proven to be one of the difficulties of the region's transition to a market economy. The goal of this course is for the participants to gain knowledge of the field of auditing and related services, the regulation of auditing, the local and international experience of its organization, methodology and technical feasibility. This makes it possible for its potential users to understand the value of auditing.

The course focuses on:

- Control of enterprise management;
- Legislative and theoretical principles of auditing;
- External auditing subject of entrepreneurship;
- Internal auditing of the management of entrepreneurial activity; and
- Auditing conclusions and reporting.

5) Macroeconomics and Monetary Policy

This course prepares participants in various spheres of the economy: private companies, banks and the banking system, territorial administration organs, government administration, and functional management. The course investigates economic processes on a macro level and creates models of these processes and makes practical recommendations for economic policy. Monetary Policy, an integral component of the course, is given at the beginning of the academic program. It contributes to the fundamental preparation of professionals of governmental organization and commercial establishments, and the re-training of bank workers.

6) Fundamentals of Microeconomics

This course provides participants with the basics of microeconomic theory, including the behavior and mechanisms of decision-making by different economic entities (individuals, householders, enterprises; i.e. micro-systems), which strive to reach their goals using limited resources. Upon completing the course, participants should know the principles of rational micro-system behavior in market conditions, and critical and fundamental methods of micro-economic analysis. In addition, participants should be able to independently execute technical and economic calculations, tied to the analysis and to the substantiation of rational micro-system behavior.

7) Financial Markets

The purposes of this course are to examine theoretically and empirically the organization of capital markets, security prices reaction to various kinds of market information and to look at the participants of capital markets: investors, issuers, and financial intermediaries. The main topics are the structure of financial markets, capital markets, debt and equity instruments, derivative instruments, and securities trading. Upon completion of the course, participants should have a clear idea of the modern theory of the organization and functioning of the financial markets in the world. They should also understand the legislative and normative base of these issues in South Asia.

8) Financial Management

The objective of this course is to give the participants a competitive knowledge of financial management, general principles and methods of financial management, application of acquired knowledge and decision-making in the production process. The course focuses on the fundamental questions of making long-term financial decisions, including the problems of:

- Time-value of money
- Risk and return
- Valuation of securities
- Capital budgeting
- Cost of capital, capital structure
- Dividend policies
- Business valuation

9) Financial Statements Analysis

The goal of this course is to give participants a knowledge of the theoretical principles and practical analysis of the financial state of an enterprise, moving toward short-term forecasting of financial indicators, looking at economic situations. These all combine to cultivate of decision-making skills in a concrete production environment. The course focuses on the methods of financial analysis of different forms of ownership and the fundamental problems of evaluating the financial state of an enterprise, such as:

- Sources of information
- Ratio analysis and application
- Pro-forma statements
- Cash management

10) Investment Management

This course studies financial markets, principally equity markets, from an investment decision-making perspective. The course develops a set of conceptual frameworks and analytical tools, and applies these to particular investments and investment strategies chosen from a fairly broad array of companies, securities, and institutional contexts. The focus is on adding value across the spectrum of decisions ranging from position-taking in particular securities, to portfolio risk management.

The course is organized around:

- Valuation of the aggregate equity markets, of individual company shares, and of a variety of derivative instruments written on these.
- Arbitrage: as a valuation tool, as an investment strategy, as an implementation strategy.
- Information: for valuation, implied in security prices, “private” versus “public”.
- Risk management: diversification, hedging.

Practical issues of the course are studied at the FAST (Financial Analysis and Security Trading) classes, which are integral part of this course.

The FAST Programme

FAST is one of the World's leading programmes for participants who want to specialize in the quantitative, technology-intensive trading that drives today's financial markets. FAST differs from traditional classroom instruction in being based on the principles of experiential learning. Participants go beyond theory of finance, to experience how theory works in practice.

John O'Brien, co-founder of the FAST programme says: "FAST traders can do anything Wall Street traders can. The only difference is that gains and losses are simulated too". The FAST trading room virtually duplicates the latest technology available in major trading firms and investment houses.

The FAST programme consists of two components: first, course modules that use interactive simulations to guide participants through historical market cases that illustrate key trading principles. This stage introduces participants to the fundamentals of trading and to the uses of financial instruments. 6-8 hours of FAST training is taught in the Core Course "Financial Management" (topics: Bond Valuation, Interest Rate Risk Hedging, Bond Portfolio)

In stage 2 participants enter the real world where markets are more complex. Techniques and strategies from stage 1 are now re-evaluated using live data feeds from stock exchanges and participants gain first-hand experience in implementing their own trading strategies. They manage their own investment portfolio. 12 hours of FAST training is taught in the Elective Course "Investment Management".

11) International Finance

The primary objective of this course is to give participants an understanding of the current international business environment and how firms manage their finance at the international level. Topics covered include financial structure of market economy, foreign exchange market, parity conditions, currency risk and exposure, international trade finances.

This course has strong links with the following courses:

- Corporate finance;
- Capital markets;
- International business.

The course will be built around major segments:

- Exchange Markets, Exchange Rates and their Behavior;
- Currency Rate Risk and its Management;
- International Corporate Finance Issues;
- International Trade Finance.

12) Business Communication

This course moulds skills and abilities to influence positively social and psychological climate in the team; to find efficient ways to overcome conflicts; to plan business communication; to develop communication competence; to determine strategy and tactics of conducting negotiations; to use creatively different means of communication, special national and cultural features of business communication and etiquette.

13) Strategic Management

The content of this course contains the strategic management essence and basic components; the role of manager in company strategy formation and realization; methods of analyzing foreign economic environment strategies and strengths and weaknesses of a company; evolution and corporate strategies developmental trends; corporate culture components.

14) Human Resource Management

This course is designed to provide participants with an understanding of attaining a competitive advantage through on organization's people. It focuses on the ties between organizational strategy, human resource strategy and organizational effectiveness outcomes. Participants in the class will address two issues: how to think systematically about managing people as a critical firm resource; and, how to implement human resource strategy to attain competitive advantage.

15) Time Management (Self-Management)

Time management is actually a problem of manager's behavior self-management. Any person, a manager as well, is free to decide how to spend his or her time. And, though time management in general is a "series of interferences into activities, intervened with other interferences", anyone is capable of doing this in order to increase "the efficiency, but not the scope of work". There is nothing advantageous in staying back after the workday, as this, in fact, decreases manager's productivity. To the contrary, a manager should be aimed at doing more priority tasks in one same period of time. A limit of a person's ability to manage the time marks a limit of his or her ability to manage the life. This course provides profound knowledge and practical skills of self-management to help participants make their work and life effective.

16) Management Information Systems

It's impossible to manage an organization in today's highly competitive world without the use of information systems based on state-of-the-art computer technologies. The main objective of this course is to give participants an understanding of the role Information Systems (IS) can play in achieving organization's strategic goals. In addition, the course provides participants with the necessary knowledge and skills for planning, implementation and successful use of information technologies in business management and decision-making.

Issues covered are:

- Basic concepts of IS
- Review of modern information technologies
- Applications of IS (end-user computing, decision support systems, and IS in functional areas of business)
- IS development process
- Information resource planning and management

Course material is presented through lectures, case studies, and software demonstrations. Participants perform practical tasks in computer class.

17) Internet in Business

Using the Internet is an integral part of company activities and business development. This course provides participants with effective tools for improving organization activity using Internet technologies, world resources, and gaining experience in developing a company's IT policy in a competitive environment.

Issues covered are:

- Basic concepts of Internet technology
- Using IT and the Internet for business support
- Main Internet services
 - E-mail
 - World Wide Web
 - Mailing lists/Teleconferences/news groups.
- Receiving information from the Internet, review of main information sources, search tools.
- Communication via the Internet.
- Marketing in the Internet.
- Electronic commerce via Internet.
- Internet resources in NIS countries.
- How to connect to the Internet. Internet Service Providers in South Asia.
- Internet security issues.
- Intranet in corporate networks.

Course material is presented through lectures, software demonstrations, practical classes, and computer games. Participants perform practical tasks in computer class.

18) Principles of Marketing

The course focuses on the complex issues of marketing faced by a company, as well as the recognition of role of consumers in developing sharp competition. The course blends the experience of marketing abroad with the reality of the South Asian environment. The course teaches the essence of the fundamentals of the location of marketing techniques. In addition, recommendations are given as effective use of the marketing concept in the enterprise activity or other socially useful activities. The course will acquaint the fundamentals of the construction of the complex marketing research, formation of the possible competitive product selection, design of the pricing policy, distribution policy, communication, marketing management, etc.

19) Business Computer Simulation “Markstrat-2”

In the business game "MARKSTRAT-2", a team of participants creates and manages a company. This firm operates in a competitive environment where four similar companies also compete. The managerial decisions of each firm depend on the preparation of the marketing strategy. Long-term strategic directions, which include varied policies of pricing, channels of distribution, and system of promotion, are part of the fundamental activity of each company. These decisions are made in uncertain market conditions and the unpredictable actions of the competitors. The business game "MARKSTRAT-2" develops exceptional practical skills necessary for the managers' work.