ANNUAL REPORT
OCTOBER 1, 2008 – SEPTEMBER 30, 2009

UNITED STATES ENERGY ASSOCIATION

SOUTH ASIA REGIONAL ENERGY PARTNERSHIP PROGRAM (SAREPP) 2
NO. 386-A-00-04-00195-00-USEA

By the United States Energy Association

I. EXECUTIVE SUMMARY

With funding from the U.S. Agency for International Development (USAID), the U.S. Energy Association (USEA) continued the South Asia Regional Energy Partnership Program using its well-proven energy partnership model. Under the Regional Partnership Program, USEA conducted and/or support a total of six activities within FY 2009 – two Renewable Energy Partnership activities, one Energy Regulation Partnership activity, one Energy Transmission Partnership activity, one South Asia Women in Energy Partnership activity, and one Utility Placement Program activity. USEA continued to maintain the SARI/Energy website and produce the Daily Regional News Roundup. USEA also continued to coordinate with the other SARI/Energy implementing partners (PA Consulting and NREL) on relevant activities, including the SARI/Energy Quarterly Updates, promotion of events and accomplishments, and other programs.

USEA FY 2009 included two additional activities during the 2009 fiscal year – one additional Renewable Energy Partnership executive exchange and support of three participants to a South Asia Forum for Infrastructure Regulation (SAFIR). With the approval of SARI/Energy management, USEA postponed the Renewable Energy Executive Exchange originally planned for September 2009 in Madrid, Spain to October 19 – 23, 2009 at the request of the Spanish utility hosts. USEA intended on sponsoring three participants from Bhutan for the April 2009 South Asia Forum for Infrastructure Regulation (SAFIR) core course. However, with late notice the delegates cancelled their participation. USEA communicated with the SAFIR Secretariat to try to find substitute delegates to sponsor but the arrangements could not be made in time. There were no other activities scheduled for this fiscal year but SARI/Energy management has agreed that USEA will plan on sponsoring individuals to the 2010 SAFIR core course.

II. SUMMARY TABLE

A. Correlation to PMP/AMP:

The following indicators are measured by the number of sponsored delegates participating in the program.

- Number of people receiving USG supported training in energy related policy and regulatory practices
- Number of people receiving USG-supported training in renewable energy development and applications

The indicator of total public and private dollars leveraged by USG for energy infrastructure projects is determined through a cost-share configuring that estimates the direct expenditures (eg. photocopying, travel, meals, etc.) and indirect expenditures (eg. labor) spent on the program by participants and non-USG hosts.

Indicator	Annual Target for Reporting Year 2009	Actual Cumulative Targets Achieved for Reporting Year	Cumulative Expenditures for Reporting Year	Program Element Funding	Actual Expenditures to Date
Number of people receiving USG supported training in energy related policy and regulatory practices	85	112	$ 801,153	$5,359,324 DV (A069-Modern Energy Services)	$3,798,485
No. of men	80	87			
No. of women	5	25			
Total public and private dollars leveraged by USG for energy infrastructure projects	$260,000	$273,000			
Number of people receiving USG-supported training in renewable energy development and applications	46	82			

III. PURPOSE OF PARTNERSHIP PROGRAM

The United States Energy Association (USEA) and the United States Agency for International Development (USAID) Mission in India signed a cooperative agreement (386-A-00-04-00195-00-USEA) on August 10, 2004. The agreement calls for USAID/New Delhi to provide funding for USEA to foster regional energy cooperation within South Asia and to help assist South Asia achieve more sustainable, efficient and environmentally sound energy production and use through regional cooperation.

The fundamental purpose of the South Asia Regional Energy Partnership Program II (SAREPP 2) is to create long-term relationships among key stakeholders and decision-makers in South Asia energy utilities, regulatory agencies, media and energy parliamentarians. The partnerships also assist South Asia stakeholders to learn from their U.S. counterparts about the value, approaches and importance of regional energy cooperation in providing affordable, reliable, and efficient energy supply to all, which is necessary for economic and social development. The SAREPP 2 encourages the development of policies, regulatory and investment infrastructure to encourage private sector investment. The partnership assist in facilitating the long-term process of rationalizing energy supply and distribution across the region, including the development of the cross-border infrastructure and market mechanisms that will be required for the eventual trade in electricity, natural gas and other energy resources.

IV. ACTIVITIES DURING FISCAL YEAR 2009

A. Maintenance and Updating of the SARI/Energy Website

USEA maintained the www.sari-energy.org website. Updates to the website were done regularly, including posting of presentations from SARI/Energy events and notices of current events related to SARI/Energy.

B. Daily Energy News Round Up

USEA continued to compile and distribute the Daily Energy News Round Up to SARI/E implementing partners, select USG (including USAID), all previous participants of SARI/E activities, and select other individuals. The recipient list is continually revised to reflect changes of address, cancelled registrations, and new participants.

C. South Asia Regional Renewable Energy Partnership

1. Clean Energy Applications Workshop – Renewable Energy, Energy Efficiency & Greenhouse Gas Abatement
June 9 – 11, 2009
Dhaka, Bangladesh

Objectives of the Seminar

The focus of the workshop was to examine Renewable Energy, Energy Efficiency, and Greenhouse Gas Abatement with emphasis on implementation of projects, through policy & regulatory measures, technology and market development. South Asian and U.S. regulators, policy makers, and distribution and generation utility energy executives discussed techniques to maximize uptake of renewable energy as a capacity source while continuing to emphasize the role of energy efficiency and conservation as tools in meeting the supply demand. Delegates identified potential actions and practices that might be further applicable to the power sectors.

Targeted Group & Number Expected to Benefit

Approximately eighty executives from Afghanistan, Bangladesh, Bhutan, Nepal, and Pakistan participated in the workshop.

Description of Seminar

Approximately eighty executives from Afghanistan, Bangladesh, Bhutan, Nepal, and Pakistan met in Dhaka, Bangladesh, June 9 – 11, 2009, to participate in a Clean Energy Applications Workshop. The workshop was organized and conducted jointly by the Bangladesh Infrastructure Development Company Limited (IDCOL), the Sacramento Municipal Utility District (SMUD), Xcel Energy, and the U.S. Energy Association (USEA). Discussion focused on renewable energy, energy efficiency and greenhouse gas abatement, emphasizing implementation of projects, through policy and regulatory measures, technology and market development.

The three-day workshop was opened with an Inaugural Session of prominent speakers active in the transformation of the Bangladesh renewable energy sector. Welcoming remarks were provided by Ms. Denise Rollins, Mission Director for USAID/Bangladesh. Ms. Rollins gave an overview of USAID's partnerships with Grameen Shakti and IDCOL focusing on solar home installations, biogas plants, cook stoves, and other renewable energy projects centering attention on development for rural women. Through partnerships, the organizations have provided training in installation and all aspects of operation and business development for almost 3,000 women. Similar partnerships have also successfully installed 325,000 solar home systems (SHS), and the program continues to expand.

Local host Mr. Islam Sharif, Executive Director and CEO of the Infrastructure Development Company Limited (IDCOL) made keynote remarks. Mr. Sharif stressed the critical importance of Bangladesh and countries facing similar electricity crises, to focus on policies to incentivize investments in renewable energy project development. Especially in the case of Bangladesh where gas supply is quickly depleting and no domestic source of oil has yet been found, the country has even greater reason to utilize its vast but mostly untapped renewable energy opportunities. Mr. Sharif went on to provide an overview of IDCOL's role in development of the sector. IDCOL partners with about 25 partner organizations, and together they are striving to reach their goal to install 1 million solar home systems by 2012.

Mr. M. Musharraf Hossain Bhuiyan, Secretary of the Economic Relations Division for the Bangladesh Ministry of Finance served as Special Guest for the workshop. Mr. Bhuiyan emphasized the country's need to support environmentally-friendly clean energy technologies, most especially solar. There are opportunities for carbon credits, which are a key component of national and international attempts to mitigate the growth in concentrations of greenhouse gases (GHGs).

Workshop sessions focused on Bangladesh's available fossil-based and renewable energy resources, renewable energy policy, financing mechanisms, and an overview of Bangladesh's current renewable energy technology and developing projects. Highlights included IDCOL's Solar Energy Programme and 250 kW Biomass Based Power Plant Project; the Solar Home Systems funded by the World Bank, the German government-owned development bank KfW, the private enterprise GTZ also of Germany and the Asian Development Bank; and the National Domestic Biogas and Manure Program funded by SNV Netherlands Development Organization and KfW.

Special resource speakers included Mr. Kenneth Floyd, Vice President for Customer Care and Revenue Cycle of Xcel Energy and Mr. Jaspal Deol, Manager of New Services from the Sacramento Municipal Utility District (SMUD). As the sixth largest publicly-owned utility in the country in terms of customers served, SMUD's innovative energy programs are known throughout the U.S. and are constantly striving to meet the RPS targets of 33% RPS by 2020 being considered by the state. SMUD's renewable generation has over 45% from biomass, 27%

from wind, 1% from PV, 6% small hydro, and 22% geothermal. Mr. Deol highlighted some of SMUD's clean energy technologies and projects, including the SMUD Solar Shares Program, waste-to-energy, and wind projects, and addressed distributed generation and integration of renewable energy technologies into the grid.
Mr. Kenneth Floyd, Vice President for Customer Care and Revenue Cycle of Xcel Energy, which is the 5th largest combination electric and gas utility in the U.S. and the country's largest wind provider, gave presentations on the utility's role in renewable energy and energy efficiency. Xcel's generation base is comprised of 50% coal (which matches the U.S. average), about 20% gas, 12% nuclear, and 17% renewable energy, and is expanding its renewable portfolio. By 2020 the utility will have to be 24% dependent on renewable energy resources. Mr. Floyd provided the workshop participants with a snapshot view of one of the newest technologies to hit the field of renewable energy integration – smart grid. Smart grid delivers electricity from suppliers to consumers using digital technology to save energy, reduce cost and increase reliability and transparency. Such a modernized electricity network is being promoted by many governments as a way of addressing energy independence, global warming and emergency resilience issues. In December 2007, Xcel Energy established the Smart Grid Consortium, bringing together leading technologists, engineering firms, business leaders and IT experts.

Representatives from IDCOL and other Bangladesh energy organizations joined their counterparts from Afghanistan, Bhutan, Nepal, and Pakistan, in a series of site visits hosted by IDCOL. The participants were taken to areas where different renewable energy applications, including a biomass-gasification based power plant, solar home system, biogas plant, biogas-based electricity generation plant, an improved cooking stove, and a solar charge battery installation site.

On the first visit, the team visited a 250-kW biomass-based power plant at Kapasia, Gazipur, implemented by Dreams Power Ltd. and funded by IDCOL through grant and loan support. The plant, which is an example of distributed generation of electricity, uses locally available rice husk as fuel for power generation and utilizes its own distribution network and metering arrangement. Being located in an off-grid area, the plant supplies environment-friendly, grid-quality electricity to 400 households and commercial entities in the area. The plant is now in the planning stages to expand its capacity to cover two more villages with an additional 400 customers.

The team then went to see a biogas-based electricity generation plant, located at Maona, Gazipur, that was implemented by Grameen Shakti, a not-for-profit company in Bangladesh established to promote, develop and popularize renewable energy technologies in remote, rural areas of Bangladesh and one of IDCOL's partner organizations. The plant uses poultry litter of about 5,000 layer hens to generate 5KW of electricity as well as biogas for cooking purposes. The plant meets the electricity and cooking gas demand of several houses. The owner of the plant reported that he can meet his loan installment selling electricity and biogas to his neighbors.

The team next visited a household having an 85WP Solar Home System. Placed at the roof-top of

the house, the system supplies enough electricity to meet the lighting demand of that household, run a black and white television and mobile phone charger. The household also has an improved cooking stove. According to the household and Grameen Shakti, the improved cooking stove saves 50% biomass compared to their previous conventional stove.

The final site visit was to a rural assembling center run by a woman in her home who produces solar battery charge controllers. Grameen Shakti trained the individual on the assembly techniques of the chargers. She now earns about Tk.7,000 (equivalent to US$100 each month), and has the flexibility to do other work as well. According to an IDCOL representative, earlier all charge controllers under the IDCOL Solar Programme were imported. Now the controllers are locally procured. This new industry has created jobs for about 500 rural women.

The site visits allowed the South Asian delegates to experience the positive transformation that renewable energy can bring in the lives of rural people of Bangladesh.

Accomplishments

The SARI/Energy executives will be able to apply numerous lessons-learned in the process of developing more domestic renewable energy resources. Specific outcomes of the exchange are listed in the Results by Country section.

List of Attendees

Afghanistan

- Mr. Mohammad Jamil Wardak, Renewable Energy Capacity Development Expert, Energy for Rural Development in Afghanistan, Ministry of Rural and Rehabilitation Development
- Ms. Safia Azizi, Engineer, Renewable Energy Department, Ministry of Energy & Water
- Mr. Bismillah Bromand, Engineer, Renewable Energy Department, Ministry of Energy & Water

Bangladesh

- Dr. M Shahidul Islam, Consultant, Grameen Shakti
- Engr. Tanzeba Ambereen Huq, Programme Manager, BRAC Disaster, Environment and Climate Change Programme
- Mr. Ruhul Quddus, Managing Director, Rural Services Foundation
- Mr. Nur Kutubul Alalm, In-charge, Renewable Energy Programme, Integrated Development Foundation
- Dr. M. Harunur Rashid, Executive Director, Srizony Bangladesh
- Mr. Md. Nasir Uddin, Director (F&A), UBOMUS
- Mr. Zahurul Haque Bali, Executive Director, Bangladesh Rural Integrated Development For Grub-Street Economy
- Mr. Rifat Shahreen Reza, Product Support Engineer, Energypac
- Mr. Syed Ishtiaque Ahmed, Programme Manager, Rahimafrooz (Bangladesh) Limited

- Mr. Abul Fazal Manik, Executive Director, Sustainable Energy and Agro Resources Limited
- Mr. Asaduzzaman Seikh, Managing Director, Dreams Power Private Limited
- Ms. Asma Haque, Managing Director, Prokaushali Sangsad Limited (PSL)
- Mr. Abdul Mazed, Senior Programme Organizer, CMES
- Mr. Mohammad Humayun Kabir, Programme Director, Shubashati
- Mr. Gazi Shamsuzzaman, Head of Programme Monitoring, Coast Trust
- Ms. Asma Nasrin, Assistant Chief, Ministry of Environment and Forests (MoEF)
- Mr. Md. Anwar Hossain, Deputy Secretary (Dev), Ministry of Power, Energy and Mineral Resources
- Mr. Md. Mojibur Rahman, Member, PBS and Training, Rural Electrification Board
- Mr. Golam Mostofa Patwary, Additional Chief Engineer, Local Government Engineering Department
- Mr. Abdur Rouf Miah, Deputy Director, Power Cell
- Ms. Zarifa Khatun, Sub-divisional Engineer, Bangladesh Power Development Board
- Mr. Al-Mudabbir Bin Anam, Sub-divisional Engineer, Bangladesh Power Development Board
- Mr. Md. Saidur Rahman, Chief Planning, Bangladesh Water Development Board
- Mr. A Z M Anas Russell, Senior Reporter, Financial Express
- Mr. Abul Kalam Azad, Executive Engineer, Rural Electrification Board
- Mr. Zakir Hossain Mazumder, Bangladesh Energy Regulatory Commission
- Mr. M. Miran Hossain, Investment Officer (Finance), Infrastructure Development Company Ltd. (IDCOL)

Bhutan

- Mr. Chhimi Dorji, Offtg. Head of Division, Renewable Energy Division, Department of Energy, Ministry of Economic Affairs
- Mr. Karma Pemba, Senior Transport Officer, Road Safety & Transport Authority, Ministry of Communications

Nepal

- Mr. Madhusudhan Adhikari, Manager, Solar energy Support Program, Alternative Energy Promotion Center
- Mr. Rajeev Bahadur Munakami, Energy Officer, Alternative Energy Promotion Center

Pakistan

- Mr. Rana Nasir Ali, General Manager, Power and Mechanical Division, National Engineering Services Pakistan, Government of Pakistan

Cost Share

Cost share: $46,000

2. Clean Energy Applications Workshop – Renewable Energy, Energy Efficiency & Greenhouse Gas Abatement
June 15 – 16, 2009
Colombo, Sri Lanka

Objectives of the Seminar
The focus of the workshop was to examine Renewable Energy, Energy Efficiency, and Greenhouse Gas Abatement with emphasis on implementation of projects, through policy & regulatory measures, technology and market development. Sri Lankan and U.S. regulators, policy makers, and distribution and generation utility energy executives discussed techniques to maximize uptake of renewable energy as a capacity source while continuing to emphasize the role of energy efficiency and conservation as tools in meeting the supply demand. Delegates identified potential actions and practices that might be further applicable to the power sectors.

Targeted Group & Number Expected to Benefit
Twenty-five executives from Sri Lanka participated in the program. It is hoped that the delegates share the lessons learned with their organization counterparts.

Description of Seminar
The workshop was organized and conducted jointly by the Sri Lanka Sustainable Energy Authority (SEA), the Sacramento Municipal Utility District (SMUD), the Organization of PJM States, Inc, and the U.S. Energy Association (USEA). Discussion focused on renewable energy, emphasizing integration of wind energy into the system through policy and regulatory measures, technology and market development.

<u>Diversifying Generation Supply</u>
Dr. Tilak Siyambalapitiya, Director of Resource Management Associates in Sri Lanka provided an overview of current energy consumption and available fossil-based and renewable resources in Sri Lanka. Dr. Siyambalapitiya spoke of the country's historic dependence on oil imports. Oil imports are extremely vulnerable to price fluctuations and therefore unreliable. The other chief energy source has been large hydro, but the country has almost reached their capacity. Consequently, the previous two-source mix (hydro and oil) of the country now needs to be diversified. The government has a goal of 75% generation to be from coal by 2025. The country also plans to enable development of small renewable energy resources using simplified procurement procedures (SPP and net metering). Sri Lanka, which currently has about 4% of its generation supply from non-conventional renewable energy, has a goal of 10% by 2015. This will be met primarily by small hydro, biomass (including dendro power, which is electricity generated from wood fuels), solar, and wind. However, this goal is not a mandate and the country is not obliged by any international treaties. There are also plans to improve energy efficiency on the supply and the demand-sides, and build additional large hydro generation facilities.

Wind Generation Technologies and Grid Code Requirements

Dr. A. Atputharaja, Faculty of Engineering at the University of Peradeniya in Sri Lanka provided an overview of the direction the country is taking in adopting wind generation technologies and developing grid code requirements. Global wind capacity has grown exponentially and the market is now using Wide Speed Range (WSR) wind turbines, which allow for fluctuating wind speeds. Since grid code requirements are extensive for the more commonly used full-range turbines, the benefits of WSR turbines are extensive. In addition to being able to handle a range of wind speeds during operation, the WSR turbines allow for flicker elimination, direct control on real and reactive power, maximum power extraction, reduced mechanical stress and full control of the generator during a fault. Since tripping a large generating plant affects the grid stability, grid connection requirements depend on the strength of the grid. Sri Lanka is focusing on development of its grid codes to ensure power quality and grid stability (voltage and frequency control capabilities). There are also plans underway for development of a HVDC system. While HVDC would be more expensive, it allows for more flexibility and would be better suited to the country's plans for wind integration.

Power Quality Issues Connected with Embedded Generators

Dr. H.M. Wijekoon, Chief Engineer (Planning & Development) for the Ceylon Electricity Board gave an overview of power quality issues connected with embedded generators. With the introduction of distributed generation technologies into the power system, significant changes are needed in power system operation. Power quality is of particular interest for two reasons – 1) distributed generators are connected to distribution feeders rather than to transmission lines and feeders are less able to deal with fluctuating energy sources, such as wind, and 2) utility customers are typically located on the same feeder and sometimes located much closer to the distributed generator.

Compared to other renewable distributed generation, wind energy has special characteristics. The mechanical and electrical principles, as well as the aerodynamic behavior of the wind, are important issues. Power quality depends on the interaction between the grid and the wind turbine. The frequency of large power systems is normally very stable and therefore the frequency disturbances won't affect the grid voltage. However, in the case of an autonomous grid where diesel engines are used, wind turbines may cause frequency variations. These all represent challenges and hurdles Sri Lanka must deal with as they expand their wind generation.

U.S. UTILITIES PRESENT RENEWABLE ENERGY & ENERGY EFFICIENCY PROGRAMS

Special resource speakers included Dr. Rajnish Barua, Executive Director of the Organization of PJM States, Inc. and Mr. Jaspal Deol, Manager of New Services from the Sacramento Municipal Utility District (SMUD). As the sixth largest publicly-owned utility in the country in terms of customers served, SMUD's innovative energy programs are known throughout the U.S. and are constantly striving to meet the RPS targets of 33% RPS by 2020 being considered by the state.

SMUD's renewable generation has over 45% from biomass, 27% from wind, 1% from PV, 6% small hydro, and 22% geothermal. Mr. Deol highlighted some of SMUD's clean energy technologies and projects, including the SMUD Solar Shares Program, waste-to-energy, and wind projects, and addressed distributed generation and integration of renewable energy technologies into the grid.

Operational & Integration Issues with Wind Generation

Mr. Deol covered the extensive operational and integration issues associated with wind generation, including load balancing, forecasting, storage, and transmission availability. However, given that capital costs for wind is much lower than solar, and wind generation is developing at rate of 35% per year, it is important to find methods to overcome these challenges. RTOs and utilities are developing methods to accommodate wind through integrating wind forecasting into operations and by expanding markets, especially in-the-day, allowing more opportunities for wind to participate.

System protection is SMUD's first priority when dealing with wind generation and grid interconnection.

Mr. Deol led a discussion on generator scheduling and short-term supply demand balancing issues associated with large scale integration of wind. SMUD's local system operator has started a "Participant Intermittent Resource Program" (PIRP) that allows wind-powered generators to schedule energy without incurring unbalancing charges when the delivered energy differs from the scheduled amount. Hourly imbalance from actual and scheduled energy are netted on a monthly basis and given a weighted-average price. The workshop delegates also talked about ancillary cost associated with different penetration levels of wind.

Promotion of Renewable Energy through Regulation

Dr. Rajnish Barua, Executive Director of the Organization of PJM States, Inc. addressed the workshop participants on the regulatory aspects of renewable energy integration. The purpose of OPSI is to maintain an organization of statutory regulatory agencies in the 13 states and the District of Columbia within which the regional transmission operator oversees the operation of the electric transmission grid and related services. OPSI Member Regulatory Agencies' activities include coordinating activities such as data collection, issues analyses, and policy formulation related to the regional transmission operator PJM, its operations, its market monitoring, and related federal and statutory regulations. Dr. Barua provided an overview of strategies for resolving conflicting policies from environmental and utility regulators and addressing issues that arise during promotion of renewable energy resources. With Dr. Barua, participants examined laws and regulations that explicitly or inexplicitly prohibit the promotion of renewable energy resources, and examined the basis of laws and regulations that allow successful renewable energy development. Each country has a number of financial and social hurdles to overcome. When considering the financial, the sector must evaluate who will pay for these projects initially; how are the costs recovered; what are the cost recovery mechanisms (rates, etc.); and if interested in foreign investment, what will it take to attract them? Social

considerations include the acceptance of the renewable energy source in society; will there be correct usage; will there be a need to educate proper usage to maximize potential?

Accomplishments
The SARI/Energy executives will be able to apply numerous lessons-learned in the process of developing more domestic renewable energy resources. Specific outcomes of the exchange are listed in the Results by Country section.

List of Attendees
- Mrs. Amila Wickramasinghe, Project Engineer, Resource Management Associates
- Mr. H.D.S. Thimothies, Chief Engineer (System Control), Ceylon Electricity Board
- Mr. D.D.K. Karunaratne, Chief Engineer - Assets Management Branch, Ceylon Electricity Board
- Mr. Noel Priyantha, Engineer, Load Research, Ceylon Electricity Board
- Mrs. Tennakoon Appuhamilage Jayasekera, Chief Engineer (Transmission Planning), Ceylon Electricity Board
- Mr. Tharanga Wickramarathna, Engineer, Ceylon Electricity Board
- Mr. Thuresha Kothalawala, Engineer, Transmission Planning Section, Ceylon Electricity Board
- Mr. M. Lakshitha Weerasinghe, Chief Engineer, System Operations, Ceylon Electricity Board
- Ms. A.D. Tilekaratne, Deputy GM, Transmission & Generation Planning, Ceylon Electricity Board
- Mr. S H Midigaspe, Chief Engineer, Generation and Planning, Ceylon Electricity Board
- Mr. A A T, Eranjeewa, Electrical Engineer, System Control, Ceylon Electricity Board
- Ms. K T S P Warusapperuma, Electrical Engineer, Energy Purchases, Ceylon Electricity Board
- Mr. A A Jayawardena, Electrical Engineer, Generation Planning and Design, Ceylon Electricity Board
- Mr. Upali Daranagama, Deputy Director General (Strategy Development), Sri Lanka Sustainable Energy Authority
- Mr. BAN. Fernando, DGM, Energy Purchase, Ceylon Electricity Board
- Mr. TD. Handagama DGM, System Control, Ceylon Electricity Board
- Mr. DDK. Karunaratne, DGM, Corporate & Regulatory Relations, Ceylon Electricity Board
- Mr. J Nanthakumar, CE, Operations Audit, Ceylon Electricity Board
- Mr. KAN. Priyantha, CE, Renewable Energy Project, Ceylon Electricity Board
- Mrs. TAK. Jayasekara, CE, Transmission Planning, Ceylon Electricity Board
- Mr. PS. Fonseka, EE, Energy Purchase, Ceylon Electricity Board
- Mrs. MTK de Silva, EE, Generation Planning & Design, Ceylon Electricity Board
- Mr. Harsha Wickramasinghe, Deputy Director General, Ceylon Electricity Board
- Mr. AMA. Alwis, Director / Renewable Energy, Ceylon Electricity Board
- Mr. Wimal Nadeera, Head/Resource Allocation, Ceylon Electricity Board

Cost Share
Cost share: $24,625

D. South Asia Regional Energy Regulation Partnership

1. South Asia Regional Energy Regulation Partnership Executive Exchange
September 21 – 25, 2009
Albany, New York & Washington, D.C.

Objectives of the Seminar
To gain a better understanding of:

- Organizational structures and operational best practice policies and procedures
  - To promote the institutional strength and effectiveness of energy, gas, and oil regulatory organizations in the South Asia region
  - To share approaches and discuss best-practices policies and procedures for effective regulation, especially in the areas of renewable energy integration and conservation
  - To develop stakeholder support for regulatory organizations
- Tariffs and rate setting mechanisms
  - To share and discuss tariff setting mechanisms for national oil, gas, and power transmission regulation in South Asia
- Consumer affairs
  - To stimulate public support and confidence in the regulatory organization and its processes
  - To develop a customer protection program
- Policies that promote renewable energy, including renewable portfolio standards & other incentive programs
- Rebate programs, the role of an income tax base for renewable energy projects, and other financing strategies
- Impacts of integrating renewable energy on the energy market
- How a market facilitates renewable energy use
- Consumer education and marketing programs related to renewable energy

Targeted Group & Number Expected to Benefit
Exchange participants included eight officials, six from the regulatory sector and two from regulated enterprises, from Bangladesh, Nepal, Pakistan, and Sri Lanka. The SARI/Energy country coordinator from Bangladesh also attended.

Description of Seminar
The South Asian regulators met with their counterparts at the New York and Delaware Poublic Service Commissions and the Federal Energy Regulatory Commission, as well as participated in a number of visits to discuss renewable energy and energy efficient programs, inclduing hydro, solar, wind and biogas installations, and smartgrid connected residential properties. The Regulation Partnership exchange broaden the participants' understanding of best practices in regulatory agency organizational structures and operations, tariffs and rate setting mechanisms, consumer affairs, and policies and financing mechanisms that promote renewable energy, including renewable portfolio standards and other incentive programs.

Accomplishments

- At the request of the SARI/E participants, NYSERDA shared their recent draft energy plan for greater energy efficiency and renewable energy integration.
- The Rensselaer Polytechnic Institute (RPI) Lighting Research Center (LRC) showcased energy efficient lighting systems, including public lighting (i.e. street lighting), that could be applied in the South Asian countries relatively easily and provide large-scale impacts in energy efficiency and cost savings.
- Additional results can be found in the Results by Country section.

List of Attendees

Bangladesh

- Mr. Zaved Choudhury, Director (Gas), Bangladesh Energy Regulatory Commission
- Mr. Md. Haronur Rashid, Deputy Director (Power), Bangladesh Energy Regulatory Commission

Nepal

- Dr. Narayan Chaulagain, Executive Director, Alternate Energy Promotion Center (AEPC)
- Mr. Iswar Singh Thapa, Joint Secretary, Water and Energy Commission Secretariat

Pakistan

- Mr. Maqbool Ahmad Khawaja, Member, National Electric Regulatory Authority (NEPRA)
- Mr. Yawar Ali, Chairman, Lahore Electric Supply Company (LESCO)

Sri Lanka

- Mr. MMC Ferdinando, Secretary, Ministry of Power & Energy
- Mr. Upali Daranagama, Additional Secretary (Planning & Development), Ministry of Power & Energy

USAID

- Mr. Sher Khan, SARI/Energy Country Coordinator, USAID/Bangladesh

Cost Share

Cost share: $44,400

E. South Asia Regional Energy Transmission Partnership

1. South Asia Regional Energy Transmission Partnership Executive Exchange on the Cross Border Exchange of Electricity
March 30 – April 2, 2009
Kathmandu, Nepal

Objectives of the Seminar

To learn approaches and techniques for national transmission system and cross border interconnection planning, operations and management through assessment of international transmission standards (i.e. grid codes) to ensure the reliability of transmission systems, successful safety procedures, commonly agreed standards for system operation, procedures to monitor the compliance of standards, mechanisms for synchronous interconnection, and technical feasibility and related legal/regulatory boundary conditions of interconnections.

Targeted Group & Number Expected to Benefit

Exchange participants included twenty officials involved in national and cross border transmission system operations from Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka. There were also experts from South Africa and Uzbekistan, representing the Southern Africa Power Pool and the Central Asian electricity market, respectively.

Description of Seminar

The delegation learned numerous lessons from the Southern Africa Power Pool, which can be applied to South Asia as they develop their market. Both regions struggle from diverse political, social and economic situations, which need to be addressed when dealing with creating a cross border interconnections. The update of the Nepal-India interconnection was useful to all of the delegates as they begin their own strategies towards interconnecting with India, and Nepal was able to learn some lessons from Bhutan's experience with interconnecting with India. Lastly, the overview of the Central Asia electricity market provided some useful insight to the South Asian delegation as it is hoped that the two regions will someday be interconnected.

List of Attendees

AFGHANISTAN
Eng. Mohammad Hashim, Member of Planning, Ministry of Energy & Water
Eng. Mahmood Radmal, Head of Construction, Ministry of Energy & Water

BANGLADESH
Mr. Arun Kumar Saha, Manager, System Planning, Power Grid Company of Bangladesh Ltd.
Mr. Md. Mizanur Rahman, Deputy Director, Power Cell, Power Division, Ministry of Power, Energy and Mineral Resources

BHUTAN
Mr. K. B. Wakhley, Chief Executive Officer, Bhutan Electricity Authority
Mr. Dorji P Phuntshok, Director (Projects), Druk Green Power Corporation
Mr. Chencho Tshering Namgay, Senior Engineer, Office of the Managing Director, Bhutan Power Corporation

INDIA
Dr. S.K. Agrawal, General Manager (OS), Corporate Operation Services, Power Grid Corporation of India Ltd
Mr. Haziq Beg, Sr. VP (Power), IL&FS Energy Development Company Ltd.
Mr. Harish Saran, Vice President, Marketing & Transaction Facilitation, PTC India Ltd

NEPAL
Mr. Ram Chandra Pandey, Director, Nepal India Cross Border Transmission Line Project, Nepal Electricity Authority

Mr. Sher Singh Bhat, Director, System Operations Department, Nepal Electricity Authority
Mr. Yugal Kishore Sah, General Manager of Transmission and System Operation, Nepal Electricity Authority
Senior Divisional Engineer, (responsible for regional energy market), Ministry of Water Resources
Representative, Department of Electricity Development
Mr. Anand Jha, Chief Operations Officer, IL&FS Nepal
Mr. Grishma Ojha, Electrical Engineer, Plant Manager, Sunkoshi Small Hydropower Project

PAKISTAN
Mr. Abdul Majid Malik, General Manager Planning, National Transmission and Dispatch Co. (NTDC)

SRI LANKA
Mr. T.D. Handagama, Deputy General Manager, Ceylon Electricity Board
Mr. D.G.S. Kumara, Electrical Engineer, Ceylon Electricity Board

USAID
Mr. Chinmaya Acharya, Regional Project Management Specialist, USAID – India

SOUTH AFRICA
Mr. Willem Theron, Energy Trading Manager, Eskom

UZBEKISTAN
Mr. Umar Karimov, CDC Energia

Cost Share
Cost share: $38,000

E. South Asia Women in Energy Partnership

1. South Asia Women in Energy (SAWIE) Executive Exchange – Efficient Energy Management and Renewable Energy
May 12 – 20, 2009
Washington, D.C.

Objectives of the Seminar
The goal of the executive exchange was to bring together women energy sector professionals from Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka to understand, identify and develop sustainable approaches to providing low-cost efficient energy to poor women and men in rural and urban areas throughout the region. Delegates reviewed energy efficiency, renewable energy, resource management, social and gender mainstreaming, and community development.

Targeted Group & Number Expected to Benefit
Twelve SAWIE executives from Bangladesh, Bhutan, Maldives, Nepal, Pakistan, and Sri Lanka participated in the program. It is hoped that the delegates will apply numerous lessons learned from the exchange in their home countries and organizations, allowing for improved community

development and opportunities for sustainable project development and new income generation.

Description of Seminar
USEA arranged for the SAWIE delegates to meet with their counterparts at U.S. energy companies and organizations to discuss efficient energy applications and conservation and the role of women in the energy sector, for models of potential application to the South Asia region.

Keynote remarks were provided by Ms. Michele Schimpp, Director, Office of Technology Support, Bureaus for the Middle East and Asia for the U.S. Agency for International Development. Ms. Schimpp welcomed the SAWIE delegation and emphasized the importance of access to clean and reliable energy to contribute to the life improvement for women and children everywhere. Ms. Schimpp also provided an overview of USAID's programs in energy and the value in incorporating gender equity issues into all programs and not be held as separate, isolated efforts.

The delegation toured the Alexandria, Virginia municipal-waste-to-energy Covanta Energy power facility. The facility's three, 325 ton-per-day furnaces process 975 tons of solid waste, generating up to 23 MWs of electricity.

Patricia McArdle of Solar Cookers International demonstrated solar cook kits, which can be made for around $2 a piece. Cooking every day in smoke-filled kitchens or over open fires on the ground is still done by hundreds of millions of women in the developing world, and leads to 1.5 million respiratory deaths per year.

Scott Sklar, The Stella Group's founder and president, demonstrated his solar home in Arlington, Virginia which has solar water heating, passive solar building features (including double-paned, argon-filled windows, LO/MIT thermal barrier paint in the attic, R38 insulation), energy efficient fixtures and appliances (such as Whirlpool Cabrio washer), 1.2 kW of Solarex polycrystalline photovoltaics and 0.5 kW of UniSolar 'peal-and-stick' modules on a metal-seamed roof on the front porch, and a 24 gel cell battery bank tied to a Xantrex SWPlus inverter. The house boast's Virginia's first direct exchange (geothermal) ground-coupled heat pump. The Stella Group's Virginia office building has 1 kW of UniSolar photovoltaic roofing shingles, a 3.6 kW GridPoint smart battery bank, a 0.5 kW small wind turbine by Southwest Windpower, solar daylight tube, and has the first commercial lease of a 5 kW Plug Power fuel cell (running on recycled industrial hydrogen in canisters) tied to a dedicated Xantrex inverter.

The delegation also toured a pv/wind power, containerized, power station developed by SkyBuilt Power is a 6 kW quick deployment power generator used by the U.S. military and cellular industry.

Current Group provided the SAWIE delegation with a tour of a residential home retrofitted with

Smart Grid technologies. Smart Grid applications optimize power in the grid flow through communication with end users to impact their consumption decisions, thus leading to the most efficient and reliable delivery of electricity and lower electricity bills.

SAWIE delegates toured the Stafford Country Regional Landfill methane-gas-to-electricity plant. The landfill, operated and maintained by the Rappahannock Regional Solid Waste Management Board, teamed with Ameresco, who operates the 2.14 MW facility, to use landfill gas by decomposing waste at the landfill.

Pepco provided the SAWIE delegation with a tour of their Customer Care Center in Upper Marlboro, Maryland where they provided them with an overview of their technology software, performance tracking methods, customer protocols, and customer pay center.

Closing Keynote Speaker Ms. Diane Farrell, Member of the Board of Directors of the Export-Import Bank of the United States provided an overview of lending opportunities available at the Bank for renewable energy projects in the SARI/Energy countries, and encouraged the delegation to have an open dialogue with the Bank to further the development of the region.

Participating Organizations included:

- Alliance to Save Energy
- Ameresco
- The Cadmus Group
- Covanta Power
- Current Group
- Energy and Security Group
- Federal Energy Regulatory Commission
- Duane Morris LLP
- Electric Power Research Institute
- Export-Import Bank of the United States
- GE
- International Clean Energy Alliance
- Lighthouse Consulting Group, LLC
- National Energy Education and Development Project
- PA Consulting Group
- Pepco
- Prokaushali Sangsad Ltd.
- Public Service Commission of the District of Columbia
- Rappahannock Regional Solid Waste Management Board
- Sacramento Municipal Utility District
- Solar Cookers International
- The Stella Group, Ltd.
- SunEdison
- University of Colorado
- U.S. Department of Energy
- Virginia Polytechnic Institute and State University Advanced Research Institute
- Women's Commission for Refugee Women & Children
- Women's Council on Energy and the Environment
- The World Bank

Accomplishments

The SARI/Energy executives had the opportunity to share their passion for renewable energy and conservation with their female peers in the United States. Discussions focused on fostering personal and professional growth and leadership abilities within their communities, and strategies for effectively utilizing opportunities in the energy sector for a more sustainable environment and to promote an improved living standard for women and families. The SAWIE working groups met to develop initial proposals for the Regional Center's mission

statement, proposed activities, and other potential organizations to partner with. Additional specific outcomes of the exchange can be found in the Results by Country section.

List of Attendees

Bangladesh

- Ms. Reba Paul, Executive Secretary, Bangladesh Water Partnership & Joint Secretary and Gender Coordinator, Bangladesh Renewable Energy Society
- Ms. Farzana Rahman, Senior Investment Officer, Infrastructure Development Company Ltd.

Bhutan

- Ms. Deki Choden, Deputy Executive Engineer, Bhutan Electricity Authority
- Ms. Tshering Choki, Field Coordinator, Royal Society for the Protection of Nature

India

- Mr. Dharesan Unnithan, Director, Energy Management Center – Kerala
- Ms. Soma Dutta, Asia Regional Network Coordinator, ENERGIA

Maldives

- Miss Mariyam Asra, Officer, Ministry of Housing, Transport and Environment

Nepal

- Mrs. Tara Devi Shrestha, Rural Energy Advisor, Alternative Energy Promotion Centre/Rural Energy Development Programme
- Mrs. Rita Bhandary, Executive Director, Nepal Paper Crafts & President, Women Entrepreneurs Association of Nepal

Pakistan

- Ms. Syeda Ummekulsum Imam, CEO, Davis Energen Ltd.
- Mrs. Rukhsana Zuberi, Chairman, Pakistan Engineering Council

Sri Lanka

- Ms. Badra Jayaweera, General Manager, Ceylon Electricity Board

Observers

- Mr. Kama Krisha, Grameen Surya Bijlee Foundation
- Ms. Ekta Bhardwaj, Manager SARI/E Small Grants Programme, PA Consulting

USAID

- Mr. Srinivasan Padmanaban, Director of SARI/Energy, USAID/India
- Ms. Mercy Thomas, Regional Project Coordinator of SARI/Energy, USAID/India

Cost Share

Cost share: $52,800

F. South Asia Utility Placement Program

1. Pakistan Executives participation in Utility Placement Program – Capacity Acquisition
January 12 – 23, 2009
American Electric Power – Columbus, Ohio

Objectives of the Seminar
The placement was designed to provide the participants with a better understanding of load and demand forecasting; prioritizing generation demand options; capacity acquisition strategies; energy trading and contracting strategies; Power Purchase Agreements; and energy conservation and efficiency mechanisms.

Targeted Group & Number Expected to Benefit
One executive was from the branch of the federal government responsible for electricity sector. The other executive worked for Pakistan's primary generation branch. It is hoped that the entire country will benefit from improved generation planning.

Description of Seminar
Mr. Saif Ullah, Engineering Adviser (Power), Ministry of Water and Power and Mr. Muhammad Azam Khan, Director (Hydel), Water & Power Development Authority (WAPDA) visited AEP in Columbus, Ohio January 12 – 23, 2009. AEP ranks among the nation's largest generators of electricity, owning nearly 38,000 megawatts of generating capacity in the U.S. AEP also owns the nation's largest electricity transmission system, a nearly 39,000-mile network that includes more 765 kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP's transmission system directly or indirectly serves about 10 percent of the electricity demand in the Eastern Interconnection, the interconnected transmission system that covers 38 eastern and central U.S. states and eastern Canada, and approximately 11 percent of the electricity demand in ERCOT, the transmission system that covers much of Texas.

Since the mid-1990s, Pakistan has been facing an unprecedented energy crisis with an estimated power shortage between 1000 and 2000 MW. The crisis is expected to worsen in the coming two years due to a 50 percent increase in the demand and a rather slow improvement in the supply. It is estimated that the shortage will grow to 3000 MW next year and to increase to about 5300 MW by 2010. Pakistan could see increased power shortages by 2010 unless actions are taken to increase electricity generation and reduce transmission losses.

During the course of the two-week program, the delegates examined AEP's environmental policy; sustainability practices; resource planning, including fundamental analysis and load forecasting; acquisition strategies; and an extensive overview of AEP's commercial operations and market operations. AEP also introduced the executives to federal and state regulatory structures and market models and how they apply to the utility's operations.

Delegates were taken on a tour of the Dolan Laboratory complex – a joint project with American Electric Power and the Consortium for Electric Reliability Technology Solutions (CERTS). The facility researches, tests and evaluates distributed energy resources and the integration of these resources into the nation's electricity grid.

Delegates also toured AEP's Smith Mountain pumped storage project near Roanoke, Virginia. The project utilizes an upper reservoir and a lower reservoir. The water that is stored in Smith Mountain Lake first passes through turbine-generators in the powerhouse to produce electricity – primarily during peak usage hours – and the water is then discharged into Leesville Lake. Most of this water is retained in the Leesville Lake and is pumped back into the Smith Mountain Lake for re-use. This pumping occurs during periods of low demand.

Accomplishments
The Pakistan studied AEP's methods for load and demand forecasting; prioritizing generation demand options; capacity acquisition strategies; energy trading and contracting strategies; power purchase agreements; and demand side management including energy conservation and energy efficiency. This experience led to an improved understanding of the processes involved in capacity acquisition and operations under the today's more strenuous regulatory and energy efficient demands.

List of Attendees
Mr. Saif Ullah, Engineering Adviser (Power), Ministry of Water and Power
Mr. Muhammad Azam Khan, Director (Hydel), Water & Power Development Authority (WAPDA)

Cost Share
AEP Cost share: $61,600

V. Financial Summary

Spending for the South Asia Energy Partnership Program and other SARI/Energy activities conducted by USEA was largely on target with estimates for this fiscal year. The travel/lodging/per diem expenditures were lower than expected due to a reduction in the number of participants; however, this was largely offset by the increased labor time needed for dealing with the nomination and J1 visa hurdles.

A.

Cost Share to Date

August 9 - 31, 2004	$0
October - December 2004	$35,000
January - March 2005	$91,750
April - June 2005	$88,625
July - September 2005	$118,125
October - December 2005	$71,375
January - March 2006	$27,150
April - June 2006	$30,000
July - September 2006	$34,000

October - December 2006	$31,000
January - March 2007	$48,210
April - June 2007	$63,125
July - September 2007	$27,625
October - December 2007	$55,750
January - March 2008	$0
April - June 2008	$93,020
July - September 2008	$39,231
October-December 2008	$0
January - March 2009	$61,600
April - June 2009	$161,425
July - September 2009	$44,400
Total Cost Share	**$1,121,411**

B. Spending to Date

	Total Obligated Amounts (Aug. 9, 2004 - Sept. 30, 2011)	FY 2009 Disbursements/ Expenditures	Estimated Unliquidated Balance Remaining
TOTAL	**$5,359,324**	**$801,153**	**$1,560,839**
Program Expenses	$2,978,569	$445,884	$937,347
Management Expenses	$2,380,755	$355,269	$623,492

VI. SUMMARY

A. Result by Result Analysis/Results Listed by Country

	Renewable Energy Partnership	Energy Regulation Partnership	Energy Transmission Partnership	South Asia Women in Energy Partnership	Utility Placement Program

Afghanistan	Ø Afghanistan Ministry of Rural and Rehabilitation Development and Ministry of Energy and Water visited a local diesel-hybrid generator and solar battery manufacturer outside of Dhaka, Bangladesh. The Ministry of Rural and Rehabilitation Development expressed interest in the solar battery manufacturer providing the Ministry with a quote for purchase of solar batteries.				
Bangladesh	Ø Xcel will provide information on a pilot project with Hitachi Ltd. on battery storage for wind generation to Bangladesh representatives. Ø Bangladesh representatives requested assistance from SMUD and Xcel in conducting a national wind mapping, similar to the mappings done by U.S. Department of Energy's National Renewable Energy Laboratory for Afghanistan, Pakistan and Sri Lanka as part of the SARI/Energy program. Ø Bangladesh's IDCOL offered technical assistance to Pakistan in determining methods to harness solar power for electrification in their off-grid areas.	Ø Bangladesh delegates also requested Current Group to meet with Bangladesh utility representatives to discuss potential applications and benefits of smart grid technology to their country. Ø Bangladesh plans to initiate discussion on the potential application of Plug Power fuel cells for off-grid and unreliable grid areas to replace diesel generators as a power sources to save money and lower GHG emissions.		Ø The World Bank and The Stella Group are also assisting Bangladesh into researching the feasibility of solar installations for pump irrigation.	
Bhutan					

India				Ø The Energy Management Center in Kerala, India has offered to assist in future development of the South Asia Women in Energy program and serve as host to a Regional Center. The Energy Management Center is currently reviewing ideas for green building designs and developing plans for training programs through a satellite office.	
Maldives					
Nepal					

Pakistan		Ø Pakistan delegates expressed interest in learning more about the potential use of GE Energy's LMS100 gas turbine. GE's Dubai office is working with Pakistan to see how they can best assist the country is meeting their generation demands. Ø Mr. Maqbool Ahmad Khawaja, Member, National Electric Regulatory Authority (NEPRA) requested Current Group to provide a demonstration on the potential applications and benefits of smart grid technology, particularly on the distribution level, in Pakistan's electricity sector to Karachi Electric Supply Company or NEPRA. Mr. Khawaja also requested Current Group's assistance in establishing a smart grid pilot project in Pakistan, to assist the country in overcoming their enormous energy demand gap. Ø Pakistan plans to initiate discussion on the potential application of Plug Power fuel cells for off-grid and unreliable grid areas to replace diesel generators as a power sources to save money and lower GHG emissions.		Ø Pakistan initiated discussions for installation of pv and other renewable energy applications through The Stella Group.	The Pakistan studied AEP's methods for load and demand forecasting; prioritizing generation demand options; capacity acquisition strategies; energy trading and contracting strategies; power purchase agreements; and demand side management including energy conservation and energy efficiency. This experience led to an improved understanding of the processes involved in capacity acquisition and operations under the today's more strenuous regulatory and energy efficient demands. AEP shared the following materials with the Pakistan executives: Ø Sustainability in the current global credit crisis Ø Rate making Ø Overview of North American power markets and AEP energy marketing Ø Integrated resource planning process and current challenges Ø Mechanisms of operating reserves in PJM Ø Overview of financial transmission rights Ø Overview of the Federal Energy Regulatory Commission's promotion of wholesale competition through open access, non-discriminatory transmission services by public utilities; recovery of stranded costs by public utilities, and transmitting utilities Ø Overview of AEP commercial operations Ø AEP corporate strategy for reducing emissions Ø AEP customer services Ø AEP's technology push for gridSMART Ø Energy efficiency and demand response programs Ø Energy storage in T&D applications Ø Fuel switching, low NOx burners, fuel conversions

Sri Lanka	Ø At the request of the Ceylon Electricity Board, Mr. Jaspal Deol, Manager of New Services from the Sacramento Municipal Utility District (SMUD) has agreed to review Sri Lanka's grid code draft for wind interconnection. Ø Sacramento Municipal Utility District shared a wind integration study that was done with the California Energy Commission to study operational impacts and address primary questions as well as the California ISO's "Integration of Renewable Resources" study which examines transmission and operating issues and recommendations for integrating renewable energy resources on the California ISO-controlled grid. Ø The Ceylon Electricity Board expressed interest in a study tour to a Greek island which has a comparable proportion of wind integration to that Sri Lanka. Sri Lanka participants would like to study a system with similar wind integration requirements and how it handles its operations system dispatch. It is hoped that through such study, Sri Lanka could gain a better understanding of what steps and measures they should take, especially on the part of the dispatcher. Ø At the request of the workshop participants, Mr. Jaspal Deol, Manager of New Services from the Sacramento Municipal Utility District shared SMUD's organization charts for their distribution services and energy supply groups.	Ø The Sri Lankan delegates conducted a three-day concentrated study tour of the Rensselaer Polytechnic Institute (RPI) Lighting Research Center (LRC) to examine other potential programs for the Regional Centre for Energy Efficient Lighting in Colombo.			

B. Issues Pending Progress

For most executive exchanges, each of the eight SARI/Energy countries are invited to send two nominees, who's participation in the program is fully sponsored. Unfortunately, for a variety of reasons, some of the

countries are unable to provide the two participants. For executive exchanges conducted in the United States, often the J1 visa processing time is so lengthy that it becomes a hurdle in the nomination process. For instance, in the case of Afghanistan, the mission requests 3-4 months for candidate selection. Then, oftentimes, the selected candidates do not already have passports, so those need to be obtained prior to the visa application process being initiated. All of these hurdles, therein, make Afghanistan participation extremely cumbersome and time consuming, and often prohibitive.

In recent years, USEA has attempted to increase the percentage of female participants in its partnership program. Because USEA is not directly responsible for selection of candidates in the South Asia Partnership Program, USEA cannot have any direct control over the female participation count, however, we encourage the Country Coordinators to solicit female candidates whenever possible. Despite this, female participation remains low amongst most of the countries, with the exeption of Sri Lanka and Pakistan to a lesser extent.

Pakistan had a lot of interest in the Utility Placement Program. Nepal and India also showed interest. However, since the launch of the program, USEA spend over sixe months conducting a full scale recruitment of U.S. utilities to participate in the program. USEA reached out to association members, including organizations such as Edison Electric Institute who were gracious enough to market the program to their members as well. With the exception of American Electric Power (AEP) and Bonneville Power Administration (BPA), USEA was unable to convince any other utilities to host a delegation even for a week. While all of the U.S. utility executives USEA spoke with agreed that the program was important and beneficial to the South Asian participants, the U.S. utilities felt that it would be inappropriate to take on any additional responsibilities, such as hosting a delegation, during the current economic downturn which is dramatically and negatively impacting the utilities' operations and revenues. Right now, utilities are having to downsize their staff and are being carefully scrutinized to ensure they are operating as efficiently as possible to ensure they are focused on their consumers and rate payers. Therein, each utility regrettably declined to host any delegates as part of the Utility Placement Program. They simply feel it is "not the right time" to participate in the program, and do not foresee being able to do so until the economy has turned around. In addition, unfortunately the placement at Bonneville Power Administration had to be cancelled as well. BPA had initially agreed to host two Pakistan delegates for a period of two weeks to study BPA's transmission system planning. However, after extensive delays, the delegates were unable to obtain the necessary U.S. visas, and in fact, now a year later, one of the delegates is still waiting for his visa. After discussion with BPA, it was decided that the placement needed to be cancelled since BPA could no longer be guaranteed to be able to provide the time and resources to host the delegation. Given these difficulties, it was decided along with SARI/Energy management that activities in the Utility Placement Program should be postponed and the resources put towards a more productive end.

C. Conclusion

The U.S. Energy Association will continue the South Asia Regional Energy Partnership Program using its well-proven energy partnership model, and to maintain the SARI/Energy website and produce the Daily Regional News Roundup. The partnership activities continue to be very successful and generate extensive positive feedback from the participants. Overall, the partnerships individually, and the program generally, are having positive development impacts for partners' organizations and their countries. As a result of the partnerships, in many partners' countries more people have improved access to energy services. Energy resources are being

produced more efficiently and delivered to customers more safely and reliably as well.