



USAID
FROM THE AMERICAN PEOPLE

SUSTAINABLE MUNICIPAL ENERGY SERVICES (SMES) PROGRAM

2004 - 2013

Final Report

July 2013

This publication was produced for review by the United States Agency for International Development. It was prepared by Nexant, Inc. under Contract No. EPP-I-02-03-00007-00 Order No. 02.

SUSTAINABLE MUNICIPAL ENERGY SERVICES (SMES) PROGRAM 2004-2013

Final Report

July 2013

July 2013

This publication was produced for review by the United States Agency for International Development. It was prepared by Nexant, Inc. under Contract No. EPP-I-02-03-00007-00 Order No. 02.

DISCLAIMER

The contents of this report are the sole responsibility of Nexant, Inc. and do not necessarily reflect the views of USAID or the United States Government.

TABLE OF CONTENTS

Section 1	Executive Summary	1
Section 2	Project Purpose and Impacts	3
2.1	Theme 1 – Energy Efficiency.....	3
2.2	Theme 2 – Air Quality	3
2.3	Theme 3 – Peri-Urban Energy Access	3
Section 3	Program Timeline	4
Section 4	Project Activities	5
4.1	Tasks 1 and 6: Energy Efficiency Capacity Building for Local Stakeholders in Mongolia.....	5
4.2	Tasks 2 and 7: Market Research Assessment for LPG in Northern Mozambique and Increasing LPG Use to Replace Charcoal for Cooking.....	6
4.3	Task 3: Energy Efficiency Public Procurement for Public and Institutional Buildings in Egypt	8
4.4	Task 4: Evaluation of the Watergy Program in Brazil and India	10
4.5	Task 5: Slum Electrification – Outreach and Capacity Building Activities	11
4.6	Task 6	12
4.7	Task 7	12
4.8	Task 8: Public Procurement of Energy Efficiency Services in Mexico	13
4.9	Task 9: Identification of Slum Electrification Potential.....	14
4.10	Task 10: Slum Electrification And Loss reduction (SELR) Pilot in India.....	14
4.11	Task 11: Slum Electrification and Loss Reduction (SELR) Pilot in Brazil	17
4.12	Task 12: Energy Efficiency Initiative for the Agricultural Sector in India.....	19
4.13	Tasks 13 and 16: Green Buildings in Jordan.....	20
4.14	Task 14: Energy Efficiency Incentive Mechanism for Electric Utilities in Jordan.....	23
4.15	Task 15: Liberia - Electricity Affordability, Safety and Loss Reduction	25
4.16	Task 16	26
4.17	Task 17: Liberia Video.....	26
Section 5	Project Management	27
5.1	Modifications, Funding Increases	27
5.2	Documentation and Records Plan	27
Section 6	Final Budget.....	28

In September 2004, USAID/EGAT awarded Nexant Inc. the Sustainable Municipal Energy Services (SMES) task order to comprehensively address a range of municipal energy services issues in order to meet the challenges of urbanization in targeted USAID-client countries. Through customized technical assistance activities and replicable pilot initiatives, the SMES task order focused on the efficient use of energy resources, increasing access of poor communities to safe and legal electricity services and improving air quality. SMES aimed to develop new tools and approaches, test and demonstrate innovative service models, develop strategies to scale up impacts, help create additional sources of data and information, evaluate intervention efforts, and disseminate market lessons and results. To meet these target objectives SMES activities were specifically designed to:

- Address a broad range of development challenges in urban and peri-urban areas;
- Focus on sustainable energy solutions for municipal services including electricity, cooking/heating, water, housing, transportation and waste management;
- Promote new approaches and activities encouraging cost-effective efficiency improvements in the use of energy, water and natural resources; and
- Encourage the adoption of integrated policy, technology and social approaches to reduce air pollution, both for indoor and outdoor urban air quality.

Over the life of the program (2004-2013), Nexant implemented 17 activities in 9 different countries with various degrees of success and achievements. In each of the host countries, the nature of activities was influenced by the availability of local organizations that were willing and capable of benefiting from these initial activities and turning them into sustainable practices. While some activities achieved tangible results and offered promising replicable potential, others were faced with local challenges that limited their impacts.

Activities that achieved promising results included:



- **Jordan** -- Promoting the concept of developing a regulated incentive mechanism to encourage privately owned electricity distribution companies as well as the state-

owned transmission company to invest their own capital in achieving verifiable energy efficiency targets.

- **Egypt** – Demonstrating an approach to leverage ESCOs investment in increasing efficiency in public and institutional building.
- **Jordan** – Promoting the adoption of the Green Building concept to meet the challenges associated with increased demand on energy resources as a result of the rising new construction activities.
- **Brazil** – Developing, testing and evaluating customized approaches to improve electricity access and normalize services in a large slum in Sao Paulo.
- **Liberia** – An assessment of the extent to which introducing energy efficiency interventions and prepayment meters reduce customer consumption and enhance affordability of electricity service.
- **Liberia** – Documentary-style training film that presents the results and lessons learned of donors’ efforts to rebuild the electricity sector after the end of the civil war.
- **Mongolia** – Developing a capacity building program for building professionals to design, build, and manage energy-efficient housing units.
- **Brazil and India** (Water Energy Nexus) –An independent evaluation of USAID’s ‘Watergy’ program activities in Brazil and India including recommendations to help USAID and the implementing agency scale up and commercialize the program.
- **Mozambique** – A market research assessment for LPG in Northern Mozambique.

Activities that encountered implementation challenges limiting their achievements included:



- **Mozambique** – Testing the possibility of packaging selected marketing approaches and credit schemes to stimulate demand for LPG as an alternative to biomass fuels among households and SMEs.
- **India** – Developing, testing and evaluating customized approaches to improve electricity access and normalize services in a large slum in Mumbai.
- **India** – Developing and testing a new approach to substantially increase the purchase and installation of energy-efficient irrigation pump sets within the agricultural sector.
- **Mexico** – Public Procurement of Energy Efficiency Services.

The SMES program focused on three themes: Energy Efficiency, Air Quality, and Peri-Urban Energy Access. The following projects fell under one or more of these themes:

2.1 THEME 1 – ENERGY EFFICIENCY

- Tasks 1 & 6: Energy Efficiency Capacity Building for Building Sector in Mongolia
- Task 3: Energy Efficiency Public Procurement for Public and Institutional Buildings in Egypt
- Task 4: Evaluation of the ‘Watergy’ Program in Brazil and India.
- Task 8: Public Procurement of Energy Efficiency Services in Mexico
- Task 12: Energy Efficiency Initiative for the Agricultural Sector in India
- Tasks 13 and 16: Green Buildings in Jordan
- Task 14: Energy Efficiency Incentive Mechanism for Electric Utilities in Jordan

2.2 THEME 2 – AIR QUALITY

- Tasks 1 & 6: Energy Efficiency Capacity Building for Building Sector in Mongolia
- Tasks 2 & 7: Market Research Assessment for LPG in Northern Mozambique and Increasing LPG Use to Replace Charcoal for Cooking

2.3 THEME 3 – PERI-URBAN ENERGY ACCESS

- Task 5: Slum Electrification – Outreach/Capacity Building Activities
- Task 9: Identification of Slum Electrification Potential
- Task 10: Slum Electrification and Loss Reduction (SELR) Pilot in India
- Task 11: Slum Electrification and Loss Reduction (SELR) Pilot in Brazil
- Task 15: Liberia – Electricity Affordability, Safety and Loss Reduction
- Task 17: Liberia Video

4.1 TASKS 1 AND 6: ENERGY EFFICIENCY CAPACITY BUILDING FOR LOCAL STAKEHOLDERS IN MONGOLIA



1. Photo - Capacity building program at UDRC attended by 26 professionals

In support of Mongolia's efforts to improve energy efficiency, Nexant developed and delivered a capacity building initiative targeting local building professionals. The main objective was to stimulate and grow the knowledge base of a critical mass of professionals, enabling them to design, build and manage energy-efficient housing units. The program was designed to address internationally accepted energy efficiency principles, and energy consumption in buildings, in response to severe climatic conditions.

The key element of this pilot initiative was the delivery of a training course titled *"Energy Efficiency Considerations for Residential Buildings in Mongolia"*. With support from the Urban Development Resource

Center (UDRC) and the Energy Conservation Center (ECC) of Ulaanbaatar, Nexant delivered the course in January 2007 to 26 participants at the training facility of the ECC. This first training was intended to be the initial nucleus of an energy efficiency capacity building program aimed at professionals working in the residential buildings area. A group of 6 engineering professionals were trained before the course and were asked to participate during the 3-day course in delivering its contents. Additionally, three products were developed to help course delivery: 1) a Training Manual in both English and Mongolian for use by participants, 2) an "Instructors Guidebook" to help prepare future instructors, and 3) a PowerPoint slide presentation to assist in classroom delivery.

4.1.1 Activity Timeline

September 2005 – January 2007.

4.1.2 Specific Deliverables

- Training manual titled "Energy Efficiency Considerations for Residential Building in Mongolia" in both English and Mongolian.
- "Instructor's Guidebook" used to train professional trainers for future delivery of the course.
- Workshop and train the trainer course delivered.



2. Photo - A UDRC representative addressing course participants

4.2 TASKS 2 AND 7: MARKET RESEARCH ASSESSMENT FOR LPG IN NORTHERN MOZAMBIQUE AND INCREASING LPG USE TO REPLACE CHARCOAL FOR COOKING

USAID was interested in promoting the use of liquefied petroleum gas (LPG) as an alternative fuel for household domestic use to replace the commonly used firewood and charcoal, which accounted for a significant portion of the energy supply in Mozambique. To address this issue, Nexant was requested to conduct a market assessment of the situation which included a survey and a proposed strategy for expanding the use of LPG as an alternative cooking fuel among households in Northern Mozambique. Based on the recommendations of the “LPG Market Assessment Study in Mozambique” which was completed in June 2005, USAID decided to proceed with a pilot initiative to expand the use of LPG in small and medium enterprises of the city of Pemba in the Cabo Delgado region in Northern Mozambique. The main objective was to mitigate the severe health, economic and environmental implications of deforestation and burning of biomass fuels such as charcoal and firewood.

4.2.1 Pilot Activities

The pilot concept was to promote LPG systems to a representative target group of the working residents of Pemba through their employment place as a focal point for raising awareness and facilitating repayments through payroll. The pilot was designed to test the effectiveness of packaging selected marketing approaches and credit schemes to stimulate demand for LPG amongst households and SMEs in Pemba, starting with a target group of workers at the Indian Ocean Aquaculture (IOA), a prawn farm operation in Pemba, as representatives of the target user groups that can afford LPG. The larger objective was mainly to reach an approach that can be replicated by other employers in the region in light of the lessons learned from this pilot.

In October 2005, USAID agreed with the management of IOA to implement a pilot to promote the use of LPG among a selected target group of IOA workers. A scope of work was developed for Nexant to work with Vidagas (VG), the main distributor of LPG in Pemba (Owned by 2 NGOs; the U.S.-based Village Reach (VR), and the local Foundation for Community Development (FDC) to prepare for the provision of a number of LPG stoves and cylinders to potential interested employees at IOA. Nexant was to work with IOA’s accounting department to implement a repayment plan for those employees interested in acquiring the LPG system through monthly deductions from the employees’ salaries. Nexant was to also work closely with Vidagas on developing their marketing and sales workforce by sharing the cost of hiring a local project manager to manage the pilot, and to ultimately address the key issues necessary to expanding distribution activities throughout Pemba and to Namupula (the largest city in Northern Mozambique) and beyond.

4.2.2 Output and Results

In October 2006, Village Reach informed USAID and Nexant of the possibility that IOA would file for bankruptcy, which validated the fear that their employees expressed during the focus group sessions. Simultaneously, FDC confirmed that the Government of Mozambique raised the price of LPG from \$375 to \$785/ton, and that there were rumors of shortage of gas supply, which reduced households’ incentive to switch to LPG. In light of these changes, discussions ensued between USAID, Village Reach, FDC and Nexant in late 2006 regarding a shift in focus for the pilot. There was agreement that USAID efforts would be better shifted to support the business and marketing strategy that Vidagas was developing with the assistance of a Brazilian consulting firm. Vidagas

shared with USAID and Nexant a preliminary outline of such strategy, but activities slowed down again with the change in Vidagas' management. In June 2007, IOA informed USAID of its imminent bankruptcy, which was a complete surprise that came at the same time that an MOU was being prepared to be signed by USAID and IOA. As a result, USAID made a decision to stop any further technical assistance to the project and instructed Nexant to finalize its involvement.

Despite the termination of this project, several valuable lessons were gained as well as some products that were developed and could be used in future similar activities including the following:

- Employed women generally make purchase decisions when it comes to energy sources. They can be prime targets for any marketing and promotional activities.
- Communication materials should be designed to match the low level of literacy among target audience, and there should be sufficient marketing materials to cover different consumer's information needs (i.e. those who are very aware of LPG and need advanced product knowledge and those who know nothing about it).
- The 5 kg LPG cylinder seem to be the best market entry unit because of its relative cost effectiveness compared to the use of charcoal and fire wood.
- Product safety concerns ranked very high among all participants and as such, every effort must be made to ensure that LPG distribution companies have well trained staff to instruct clients and responsibly handle their queries and concerns.
- Simplify the product pricing so that customers clearly understand the price distinction between purchasing a complete LPG stove and a lamp.

4.2.3 Activity Timeline

October 2005–June 2007.

4.2.4 Specific Deliverables

- 'LPG market Assessment Study for Mozambique – Phase I' Report – December 2004.
- 'LPG market Assessment Study for Mozambique – Phase II' Report – June 2005.
- 'LPG Pilot at IOA Final Report' – July 2007.

4.3 TASK 3: ENERGY EFFICIENCY PUBLIC PROCUREMENT FOR PUBLIC AND INSTITUTIONAL BUILDINGS IN EGYPT

In 2008, Nexant successfully completed a pilot project designed to develop, test, disseminate and scale-up a process for procuring energy efficiency transactions in public and institutional buildings. The concept was to reduce the burden on Government budget by shifting capital investments to Energy Service Companies (ESCOs), and to achieve increased performance reliability at competitive prices. The objective therefore was to pilot a model procurement process to be used by public agencies to improve lighting efficiency using the ESCO approach to accelerate the acquisition of EE products and services in a reliable and affordable manner.

This project started in 2005 with Nexant and USAID agreeing to implement 2 pilot activities. The first was the headquarters office complex of the ‘Ministry of Water Resources and Irrigation’ (MWRI) in Cairo, and the second was at the campus of the ‘Arab Academy for Maritime Science and Technology’ (ACMST) in Alexandria. While the MWRI project was completed successfully, the ACMST pilot encountered numerous challenges ranging from hesitation of the facility management staff to disagreement to using certain performance criteria. In late summer of 2006 and after almost a year of working to resolve many barriers, Nexant realized that there was no intention on behalf of the ACMST management to proceed with the pilot. Hence, USAID and Nexant agreed to stop working on the project and to focus activities on the MWRI pilot.

The MWRI project is a 22-story complex comprises 4 floors of multi-use spaces and an office tower that starts from the 5th floor with a 10,000 square feet floor plan of office spaces. After developing an initial energy efficiency audit with specific recommendations for lighting efficiency and the implementation of an energy management system, Nexant began working with the MWRI technical and procurement staff to develop a competitive bidding for the ESCO community. After long discussions and negotiations with various entities within the MWRI organization, an RFP was released in 2006 but only one bidder submitted a qualified bid, which forced MWRI to re-issue the RFP later (June 2007).

Out of three qualified proposals submitted, MWRI selected ‘Falcon’ a lighting contractor in October 2007. The implementation scope for this pilot covered the replacement and upgrade of 2,800 existing lighting fixtures with efficient fluorescent lamps, electronic ballasts, reflective mirrors and CFLs. A total of 6,500 electromagnetic ballasts and 300 incandescent lamps were replaced. A measurement and verification simplified protocol was developed by the Energy Services Business Association (EESBA) which is an energy services NGO that was formed in 1999. They were retained to provide an independent verification of the achieved savings and to coordinate a \$15,000 grant that was committed to this pilot through ‘World Learning’ to compensate the winning bidder for the extra work and cooperation in performing the measurement and verification task. The UNDP-sponsored program helped test and verify samples of the installed measures to ensure compliance with codes and regulations. Actual site measurements indicated that retrofit activities resulted in reducing lighting consumption by approximately 50%. Nexant completed the pilot in August 2008 with the submission of the MWRI case study.

4.3.1 Output and Results

- An assessment of the energy efficiency potential in the public sector.

- An assessment of the supply side of the EE market was conducted to identify the most proven and available EE measures in the market and the ability of the existing service providers in Egypt to deliver EE products and services.
- A preliminary energy audit was performed to assess the economic and technical feasibility of the pilot for use as a guide to the bidders.
- A draft RFP with all additional terms, conditions and clauses addressing the connection between payments to the ESCO and project performance.
- A pre-bidding conference held to discuss the procurement process with prospective bidders and to help explain the difference from traditional government procurement.
- Technical assistance during bid package finalization, selection and contract award.
- Support during project implementation, particularly at commissioning to ensure project performance is as noted in the final contract.
- Measurement and verification reports.
- MWRI case study document to help disseminate results and summarize lessons learned with recommendations for wide-scale replication.

4.3.2 Outcome and Success

The MWRI project demonstrated success in more than one area:

- The case study project showed savings results exceeding expectations, thus offering a good testimonial case to promote future adoption of the concept.
- The project demonstrated a good model of cooperation with other donor agencies. The project was implemented with cooperation from a GEF-sponsored project that was implemented by the UNDP/Cairo and the Ministry of Electricity and Energy in Egypt.
- It provided a model procurement that was compatible with existing Government regulations and could be adopted with simple adjustment to current practices.
- It later led to an Egyptian Cabinet decision in 2010 to expand the use of this pilot in twenty (20) Government facilities, thus promising a sustainable potential.

4.3.3 Activity Timeline

February 2005 - August 2008.

4.3.4 Specific Deliverables

- ‘Preliminary Energy Assessment for the Ministry of Water Resources and Irrigation Building in Cairo’ – August 2005.
- ‘Market Assessment of Public Sector Energy Efficiency in Egypt’ – August 2005.
- ‘Measurement and Verification Baseline and Post Retrofit Reports’ – December 2007 and February 2008.
- ‘Case Study for the Lighting Improvements in the Ministry of Water Resources and Irrigation’s Office Complex in Cairo’ – August 2008.

4.4 TASK 4: EVALUATION OF THE WATERGY PROGRAM IN BRAZIL AND INDIA

Nexant conducted an independent evaluation of the Alliance to Save Energy (ASE)'s Watergy Program in Brazil and India and provided a comprehensive set of recommendations to assist USAID and Alliance improve, scale-up and commercialize the program in these two countries. ASE had started the implementation of the program 6 years earlier in many parts of the world to build local energy management capacity and promote the efficient use of energy and water in municipal water and wastewater systems. The program was designed to focus on capacity building, resource mobilization, policy reform, information management, and donor/partner coordination. As ASE started to work on developing commercially viable models for financing and implementing Watergy projects, it was timely for USAID to use the SMES task order to offer an independent review and offer recommendations.

Through its team of consultants and local subcontractors, Nexant collected the necessary data from the ASE available reports and from interviews with ASE management team in D.C. and the relevant USAID staff. In 2005, and after identifying a list of target stakeholders, the Nexant experts visited Brazil and India and conducted a series of interviews and meetings with different organizations and stakeholders in various cities throughout these two countries. As a result, Nexant developed two evaluation reports that included assessments of program successes and challenges as well as a set of recommendations to increase effectiveness and allow for scalability.

The reports were later presented to the ASE team and the USAID staff in Washington DC in late September 2005.

4.4.1 Activity Timeline

February 2005 – September 2005.

4.4.2 Specific Deliverables

- 'Evaluation of the Watergy Program in India' Report – August 2005.
- 'Evaluation of the Watergy Program in Brazil' Report – September 2005.

4.5 TASK 5: SLUM ELECTRIFICATION – OUTREACH AND CAPACITY BUILDING ACTIVITIES

This task focused on raising awareness at the government, donor, NGO, and community levels regarding the need for legal access to electricity for impoverished urban communities and to share the results of the Brazil - Slum Electrification and Loss Reduction pilot (see Task 11). Two main activities were implemented serving this purpose: participation in the World Bank’s Energy Week workshop in March 2005, co-sponsorship of a workshop in Salvador, Brazil in September 2005 and co-sponsorship of a workshop in Sao Paulo, Brazil in December 2007.

4.5.1 World Bank Energy Week – March 2005

In order to increase awareness and share experiences on efforts to provide slum communities with improved access to legal electricity services, USAID requested Nexant to participate in a panel discussion held during the World Bank’s Energy week in Washington DC in March 2005. Nexant participated in the development of the agenda and identified speakers as well as invitees, and managed all other related logistics. A presentation was developed and delivered on the findings of the USAID “Innovative Approaches to Slum Electrification” report. Nexant also facilitated the participation of Mr. Carlos Rufin, an energy access expert, as a speaker in the event. The panel presentation was a success and allowed the Nexant team and USAID expand their networking with other stakeholders for future activities.

4.5.2 Slum Electrification Workshop in Brazil – September 2005

In September 2005, Nexant participated in a 2-day workshop in Salvador do Bahia, Brazil that was sponsored and funded by USAID, the Energy Sector Management Assistance Programme (ESMAP) of the World Bank, Electricité de France (EDF), Cities Alliances, COELBA (Salvador’s electricity distribution utility) and the Inter-American Development Bank (IDB). The workshop was titled “Meeting the Energy Needs of the Urban Poor” and attracted seventy five (75) professionals representing utilities, NGOs, governments, state agencies, donors, and other stakeholders from 15 cities in Latin America, Africa, Asia and Eastern Europe. The workshop succeeded in raising the profile of the urban slum electrification issue in general and in addressing the key challenges that exist for governments and electric utilities around the world as they begin to develop solutions for this urban problem.

4.5.3 Slum Electrification Training Course at the UN-CSD in New York – May 2006

In May 2006, Nexant delivered a Slum Electrification course, which was one of only two courses that were approved by the United Nations to be held in conjunction with the 14th meeting of the Commission on Sustainable Development (CSD) in New York City. The course was introduced by USAID and included an overview and opportunities given by Nexant consultants and a representative from the Brazilian utility COELBA who presented the experience of his distribution company in Brazil. Nexant also delivered a panel presentation on slum electrification at the event.

4.5.4 Improving Electricity Service for the Urban Poor Workshop in Brazil – December 2007

Nexant assisted in the facilitation and organization of the workshop, “Improving Electricity Service for the Urban Poor,” which was held in São Paulo, Brazil from December 4-7, 2007 and attended by over 100 experts, distribution company managers and development officials from 23 countries drawn from Asia, Africa, Latin America, Europe and North America. The objective of the workshop was two-fold, the first being to disseminate the results of the Slum Electrification

and Loss Reduction (SELR) pilot project of the U.S. Agency for International Development (USAID), International Copper Association (ICA) and AES Eletropaulo. The second objective was to share experiences and explore sustainable solutions to the many technical, economic and social issues associated with SELR-type programs, focusing on best practices, techniques, tools, and technologies. The primary targets of the dissemination were distribution companies serving large urban areas in developing countries and development and government officials and NGOs who could assist their efforts in substantive ways.

4.5.5 Activity Timeline

February 2005 – June 2008.

4.5.6 Specific Deliverables

- Presentation delivered at the World Bank Energy Week in 2005 focusing on energy access and the discussing the “Innovative Approaches to Slum Electrification” report.
- Slum Electrification Workshop in Salvador do Bahia, Brazil, September 2005.
- Workshop proceedings, “Improving Electricity Service for the Urban Poor,” June 2008.

4.6 TASK 6

See Task 1 – Energy Efficiency Capacity Building for Local Stakeholders in Mongolia.

4.7 TASK 7

See Task 2 - Market Research Assessment for LPG in Northern Mozambique and Increasing LPG Use to Replace Charcoal for Cooking.

4.8 TASK 8: PUBLIC PROCUREMENT OF ENERGY EFFICIENCY SERVICES IN MEXICO

The objective of this task is to implement in Mexico similar pilot activities to those that were conducted in Egypt for developing a business model to facilitate competitive acquisition of performance-based energy services for public and institutional buildings. Nexant Inc. retained the services of PA Consulting (Now Tetra Tech) as a subcontractor given their broad Mexican energy efficiency experience and qualifications, including the presence of Spanish-speaking staff and extensive local network of professional contacts. A pre-scoping mission to Mexico City was conducted in late November 2005 by USAID, Nexant and PA Consulting.

Following the trip to Mexico, the team agreed to proceed to the next step of developing 1-2 pilots with the assistance of CONAE. In order to provide background and context for this pilot activity, PA Consulting conducted a study that provided a brief overview of two important market aspects: 1) energy efficiency potential in the Mexican public sector; and 2) the capacity and experience of energy services providers in Mexico to provide ESCO-type services to the public sector. The study was completed in June 2006.

As part of the process of informing potential clients of the kinds of issues addressed by this pilot project, PA Consulting also prepared a report in July 2006 providing an overview of how the public sector procurement regulations address the needs of a performance-based multi-year contract. In order to identify possible client institutions and facilities for the pilot, walk-through audits were carried out in two installations and a final report was issued in November 2006.

Due to the election and transition in Government in 2006, Nexant and its subcontractor PA Consulting faced major challenges in securing agencies/projects for the application of an energy efficiency bidding procurement. In November 2006, USAID has agreed with the Nexant recommendation to stop project activities at least until the new Government is operational and the business climate is back to normal.

4.8.1 Activity Timeline

October 2005–November 2006.

4.8.2 Specific Deliverables

- ‘Market Study for Potential Energy Service Providers for the Public Sector in Mexico’ Report – June 2006.
- ‘The Integration of Public Policies in the Development of ESCOs’ – July 2006.
- ‘Report on Walk-Through Audits for Candidate Public Sector Facilities in Mexico’ – November 2006.

4.9 TASK 9: IDENTIFICATION OF SLUM ELECTRIFICATION POTENTIAL

This task was initiated to identify the most ready candidate cities for slum electrification activities given their local conditions/issues, strategic opportunities, available interested partners, etc. This activity was intended to increase the effectiveness of planned scoping trips. Along with the International Copper Association, Nexant and USAID pushed for two pilot projects that would lead to the development of customized approaches for providing sustainable electricity services to poor urban areas for wide-scale implementation eventually. In order to finalize the two final pilots, Nexant joined USAID in three scoping trips to Morocco, India and Brazil and ultimately settled on two pilot projects in India and Brazil.

The scope for this task included the preparation of country-specific data for Morocco, Brazil and India outlining country conditions, major programs related to slum electrification, potential opportunities and partners to work with.

Nexant participated in a scoping trip to Morocco with USAID in November 2005. Based on the findings of this trip, USAID has determined that Morocco did not offer the “scalability” and replication potential that was desired for the development of a pilot project and therefore, should not be considered further. A scoping trip to India in March 2006 led to confirmation of a pilot with Reliance-Mumbai (Task 10), and a series of meetings in Brazil secured a slum electrification pilot with AES Eletropaulo (Task 11).

4.9.1 Activity Timeline

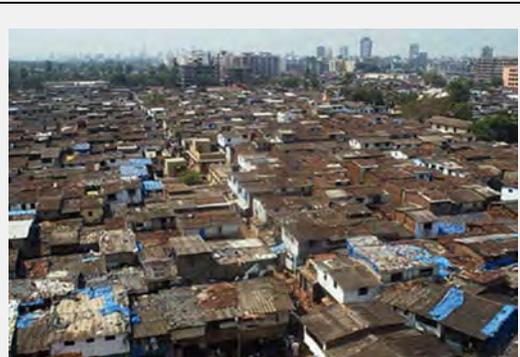
September 2005 –March 2006.

4.9.2 Specific Deliverables

- A trip report was delivered to USAID which provided sufficient data and information on relevant issues in Morocco and offered a summary of the reasons for the above-mentioned conclusion.
- ‘Slum Electrification & Loss Reduction – Brazil Background Report’ – December 2005.
- ‘Slum Electrification & Loss Reduction – India Background Report’ – January 2006.

4.10 TASK 10: SLUM ELECTRIFICATION AND LOSS REDUCTION (SELR) PILOT IN INDIA

USAID initiated the Slum Electrification and Loss Reduction (SELR) Program in 2005, in cooperation with the International Copper Association (ICA) through its local arm in India, the International Copper Promotion Council of India (ICPCI), and the Reliance Energy Limited (REL) in Mumbai for regularizing electricity services in slum areas. The primary objective was to develop, test and evaluate customized approaches to improve electricity access and normalize services in slum areas for wide-scale implementation. A key feature of the Program was an integrated approach of actively engaging the

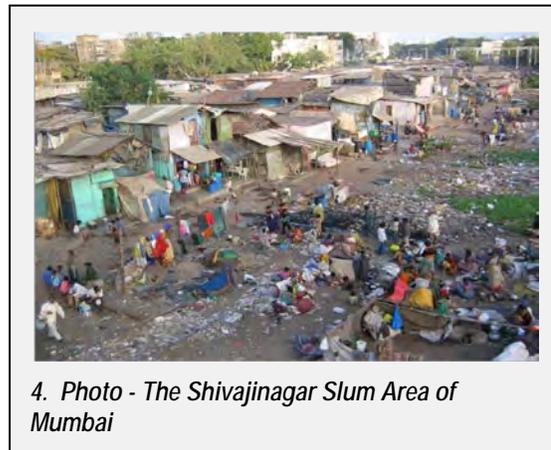


3. Photo - The Shivajinagar Slum Area of Mumbai

government, utilities and communities and addressing both supply- and demand-side issues.

In 2006, USAID, REL and ICPCI signed an MOU to initiate a pilot project in the Shivajinagar slum community in Mumbai focusing on providing legal electricity connections to slum dwellers that were either illegally connected or did not have any connections, and to assist the slum dwellers in upgrading the internal wiring to make it more safe and reliable. Shivajinagar occupies about 810 square meters with over 21,000 dwellings. In mid-2006, the World Bank's Global Partnership for Output-Based Aid (GPOBA) agreed to co-finance a portion of the program by contributing up to US\$1.5 million in support of subsidies for converting illegal connections to legal connections and to upgrade the internal wiring the slum dwellings.

REL agreed to undertake all investments required to take electricity to the slum areas which include upgrades to the network, drop line from substation, meter panel, and household meter. The GPOBA subsidy was to be used to cover the portion of the cost of a new legal connection and for improving safety and reliability of the wiring in existing dwelling units. ICPCI provided technical support while USAID role was to help mobilize the project activities through the preparation of project implementation plan, community outreach and awareness building, and a follow-up with all partners to ensure progress.



4.10.1 Pilot Activities

The detailed project design was completed in early 2007 and the GPOBA grant was approved in March 2007. A project Operations Manual (OM) defining the specific implementation responsibilities and steps was prepared by USAID and accepted by all participants with a target project completion by April 2008.

Unfortunately, substantial delays were encountered due to disagreement of REL management with a number of issues related to the GPOBA grant agreement as well as some of the provisions of the OM. Additional difficulties were experienced as changes in REL's decision-making structure relative to the SELR project did not help getting a timely resolution. The GPOBA Grant Agreement was then signed in April 2009, and a meeting of all participants was held in May 2009 to develop a new project implementation plan targeting initiation of project implementation by September 2009 and completion by March 2011. While the plan was approved by all parties, its execution again suffered from administrative and bureaucratic delays that led to starting the project in October 2010.

USAID had engaged a contractor, Slum Rehabilitation Society (SRS), to conduct the community awareness and outreach workshops to be delivered in cooperation with various community based organizations (CBOs) and NGOs. SRS had planned to conduct thirty workshops in Shivajinagar and twenty in another slum community selected by REL. Again, these workshops could not have been initiated until the project implementation issues listed above were resolved.

The workshops began in October 2010 and were spread over a period of 6 months. A total of 24 awareness and outreach workshops were successfully completed in Shivajinagar. As a result, REL received over 300 applications for new connections, but unfortunately, none of these applications led to any actual installations of new meters or improved wirings. According to REL, participants were concerned about the wiring cost estimated and their share of these costs after the GPOBA subsidy. Meetings were held with these applicants to reiterate the benefits of legal connections and safe wiring, but, as of September 2011, none of the new connections had actually been installed.

4.10.2 Workshops Delivered in Cooperation with CBOs and NGOs

As a result of the lack of any field activity, project credibility was questioned by the residents. Also USAID was facing a project deadline, and it was mutually agreed that (i) the 20 workshops in the new slum community would be cancelled and (ii) no further workshops (beyond the 24 already completed) would be conducted. USAID therefore, terminated its activities at the end of October 2011.

4.10.3 Output and Results

As of the end of February, 88 applicants had completed their REL forms of which, four new legal connections were installed, and 16 internal wiring upgrades were completed. The following are some suggestions from the experience gained for designing such programs in the future:

- Keep the program design simple and easy to explain to the slum residents.
- Develop information on the community and resident characteristics and design the program consistent with these characteristics.
- Design and implement a strong community outreach and awareness program administered by an organization that is knowledgeable and credible. Engage local NGOs and CBOs in such a program.
- Get a strong commitment from the top management of the local utility.
- To the extent possible, obtain the support of local political and community leaders.

4.10.4 Activity Timeline

April 2006–February 2012.

4.10.5 Specific Deliverables

- ‘Slum Electrification and Loss Reduction Project (SELR) – India’ – February 2012.
- Operations Manual and GOPBA Grant Agreement Documentation.



5. Photo - Workshop delivered in Cooperation with CBOs and NGOs

4.11 TASK 11: SLUM ELECTRIFICATION AND LOSS REDUCTION (SELR) PILOT IN BRAZIL

The Slum Electrification and Loss Reduction project in Brazil (SELR Brazil) was a partnership pilot implemented by USAID, the International Copper Association and AES Eletropaulo to test an integrated approach to slum electrification and loss reduction. This approach aimed to develop a sustainable service model for AES and other distribution companies that would meet the needs of consumers in low-income urban areas and could be widely replicated. Typically, the vast majority of slum dwellers are either illegally connected to the local distribution company's grid or connected but not paying for the service provided. Therefore, the pilot project was designed to reduce electricity losses from theft and non-payment while bringing more reliable and safer electricity service to the residents as well as helping them to reduce their electricity consumption to affordable levels.

After the first year of operation, the partners selected the Paraisópolis favela (slum in Portuguese), which is the second largest in São Paulo and the fourth largest in Latin America with a population of 55,000 (as of 2005) living in and operating 4,600 households and businesses. Paraisópolis is surrounded by middle- and upper-income residential areas as shown below.



6. Photo - The Paraisópolis Slum Area in Sao Paulo Surrounded by Middle and Upper Income Dwellings

4.11.1 Pilot Activities

The main objective was to convert formerly 'free' electricity consumers into satisfied and paying customers in a manner that was financially viable for the distribution company. The pilot had four distinct phases: pre-regularization, regularization, post regularization, and evaluation. Pre-regularization involved first contacting the community leadership and other stakeholders to gain support for the project, customer mapping and registration, and an extensive community campaign to prepare the population for the upcoming changes. Educational activities included printed materials, community events, door-to-door visits and presentations in schools.

Regularization comprised replacement of much of the distribution system, installation of new service drops and meters for the new (or returning) customers, and the start of billing and collections. The upgrades of the distribution system and service infrastructure made it more difficult to steal electricity and provided safer, better quality, more reliable and efficient electricity service within the area. Non-standard technologies used to accomplish the upgrade included anti-theft cables, remotely controlled meters, and efficient transformers.

Post-regularization activities included additional community campaigns as well as working on an individual basis with the new customers to improve the efficiency and affordability of their electricity use. All households received new efficient lights. The poorest of the households that had inefficient refrigerators received refrigerator replacements and those with the riskiest internal electrical wiring received upgrades of internal wiring including safer and somewhat more efficient electrical showers. To further reduce the impact of paying for electricity, bills were capped at 150 kWh for a period of at least 3 months. Commercial customers were visited to identify efficiency

measures that would be cost-effective for them to take. Additional public lighting improved the overall ambiance and personal security of the community.

The evaluation phase included a consumer poll to test changes in attitudes and satisfaction with the results of the project from customers' perspective. Financial analysis of the results from the perspectives of the company and the consumer provided a measure of overall pilot impact, advice for replication and lessons learnt that could be used to improve effectiveness in replication.

4.11.2 Output and Results

- These energy efficiency and safety measures combined with the 'regularization effect' reduced consumption in the targeted 4,365 households and commercial entities from an average of 250 kWh down to 151 kWh per customer. The average post-regularization consumption, prior to installation of EE measures, was 192 kWh per customer per month, suggesting a 58 kWh reduction per customer attributable to 'regularization', and the further reduction is attributed to the installation of EE measures.
- Non-payment dropped from 98% to 32%.
- Low-income customers' consumption became eligible for reimbursement by the Government for the difference between the low income tariff for which they were eligible and the cost-recovery tariff that normally applies to non-low income customers.
- Regularization was seen by the vast majority of those polled to be inevitable and essentially fairer than the prior system. Overall satisfaction with the project was very high, with the mean of 62% in the level of 'very great satisfaction'.
- A drop in electricity-related emergency incidences from 57 in the 6 months prior to the pilot to only 2 in the same period post-pilot.



4.11.3 Outcome and Success

- AES Eletropaulo has since scaled the tested solution and regularized an additional 450,000 households and businesses in low income areas in São Paulo.

4.11.4 Activity Timeline

March 2006–February 2009.

4.11.5 Specific Deliverables

- 'Transforming Electricity Consumers into Customers: Case Study of a Slum Electrification and Loss Reduction Project in São Paulo, Brazil' – February 2009.

4.12 TASK 12: ENERGY EFFICIENCY INITIATIVE FOR THE AGRICULTURAL SECTOR IN INDIA

USAID agreed to work with the International Copper Association (ICA) in India to increase efficiency of the agricultural pumping systems. The local arm of ICA, the International Copper Promotion Council of India (ICPCI) had a pilot project undergoing in cooperation with BESCOM, the utility serving Bangalore, to promote the installation of energy-efficiency agricultural pumping systems. BESCOM had selected (3) manufacturers and began branding Irrigation Pump (IP) sets that were jointly marketed to farmers hoping to increase demand thus lowering unit price.

Nexant was requested to provide technical assistance to the pilot. The objectives was to develop a scalable and replicable program that offers the potential for a large scale program implementation, and the approach was to mobilize the efforts of the utility, agricultural energy users, equipment manufacturers and suppliers in a cooperative model that can be replicated on a larger scale. Nexant assisted USAID in developing a Concept Paper that included an economic analysis of the branded IP sets relative to the established local brands and the assembled sets. The results led to a decision that the efficient pumps would not need financial subsidies but an integrated campaign combining marketing, promotion, communication and education, one-on-one consultations, and financing would be the more effective way to increase market demand.

An approach was selected to engage a local organization or a “Project Agents (PA)” to educate the farmers and to organize and coordinate the marketing, promotion, communication and financing of the branded IP sets. Nexant developed an RFP for the competitive selection of the PA in early 2007, and subcontracted a consortium led by Shri Shakti Alternative Energy Limited (SSAEL) under a performance-based contract. The contract allowed SSAEL to act as the PA and market and facilitate IP set sales while paid based on the number of actually sold sets. This activity was designed to directly complement the other marketing and promotion efforts being carried out by BESCOM, ICPCI and the three manufacturers.

Unfortunately, the marketing program was unsuccessful because there appeared to be insufficient interest and cooperation from the manufacturers to market the efficient pump sets to farmers, and most of the dealers representing the manufacturers had little or no interest in this program. Also the problems of poor power quality and power interruptions continued to make it difficult to sell efficient pump sets as these sets operate efficiently only under high quality power conditions. The pump manufacturers did not cooperate with BESCOM and therefore, the marketing efforts from SSAEL did not take off by 2009. As a result, SSAEL did not receive any of their performance-based payments

4.12.1 Activity Timeline

April 2006–July 2009.

4.12.2 Deliverables

- Branding Program with WENEXA, ICPCI and BESCOM
- Final report prepared by SSAEL

4.13 TASKS 13 AND 16: GREEN BUILDINGS IN JORDAN

This activity was launched by USAID/Jordan as part of its energy assistance activities. The Mission initiated the ‘Building Green in Jordan’ project in 2009 to help understand how the “Green” or energy efficient building concept can or should be applied in Jordan. USAID/Jordan funded this activity through the SMES task order under which Nexant was the technical assistance provider. The scope of the activity focused on assessing the viability of using the U.S. Green Buildings LEED (Leadership in Energy and Environmental Design) rating system to promote energy efficiency in the Jordanian building industry. To reflect market reality, a new construction building was selected as a case study to undergo the process of achieving LEED certification from the U.S. Green Buildings Council. The project also included a technical assistance component to address the issue of energy efficiency in public buildings through the development of model energy audits that can be used by public agencies or other stakeholders such as financial institutions. Four energy audits were performed for two Government institutional buildings and two secondary schools.

4.13.1 Output and Results:

Nexant completed the following activities under this task:

- Nexant provided technical support and acted as the LEED consultant for the ‘Crystalle Building’ (a new multi-purpose building in the upgraded Abdali area), which was selected -- with the help of USAID - as a case study. Through this exercise, Nexant was able to assess the level of applicability and appropriateness of using the LEED rating system for the Jordanian building industry. The assistance that Nexant extended to the developing company led to receiving approval from the U.S. Green Buildings Council for a Gold Level precertification. Actual certification would be obtained after the completion of construction.
- The Nexant team developed an assessment of the challenges of using the LEED rating system in Jordan. Nexant reviewed the legal framework for the building process, permitting steps, the Jordan National Building Code 2008 and their application during design and construction, the existing labor pool skill set and the quality of construction materials. In late 2010, Nexant prepared a final report entitled “*Green Buildings and LEED Initiatives Case Study in Jordan*” which assessed lessons learned from applying the USGBC requirements to a new construction building in Amman. The report included analyses on the building codes, labor skill set and applied construction techniques in Jordan
- Nexant also completed a market assessment of the existing energy service activities including products, services and providers’ capabilities to help understand the existing capabilities and abilities to support the growth of the energy efficiency practice. In



8. Crystalle Building in Amman Jordan

August 2010, Nexant completed a final report titled “*Supply-side Assessment of the Energy Efficiency Market in Jordan*”.

- To help develop a model energy audit for public buildings, Nexant completed four (4) energy audits at the Ministry of Planning and International Cooperation, the Ministry of Environment headquarters, ‘Khadija BintKhwailed’ secondary school in Sahab, and ‘Dahyet Al Rasheed’ secondary school in Amman



6. Photo - Ministry of Planning and International Cooperation Headquarters



5. Photo - Khadija Bint Khowaylid Secondary School

- A simplified excel-based energy audit tool was developed for use by schools and other interested entities to help assess the economic viability of energy efficiency measures. In cooperation with the Royal Scientific Society, Nexant developed the tool in both soft form and as a hard copy document in both the Arabic and English languages and delivered a one –day training in September 2011 to sixteen (16) school officials who were requested to attend by the Ministry of Education. Final recommendations were developed by the attendees and documented by Nexant in a final report titled: ‘*Electric Energy Audit Toolkit Training for Public Schools in Jordan*’.



7. Photo - Schools Officials and USAID Representative attending the Training Session at the RSS Facility

- Nexant produced marketing documents in the form of 2-sided fliers in both the Arabic and English language for use on the USAID website to increase awareness of the ‘Building Green in Jordan’ initiative. Hard copies were also distributed by USAID.
- End-of-Project Workshop. On March 1st, 2011, Nexant held a workshop in Amman, to disseminate the outcome and lessons learned from the work performed under the

'Building Green in Jordan' activities. Over forty professionals attended the one-day workshop including Jordanian Government officials, USAID officials, building and construction industry professionals, energy consultants, and representatives of other donor agencies. During the event, a total of seventeen presentations were delivered by thirteen speakers from different stakeholder organizations covering activities relevant to both the green buildings case study and the energy audits in public buildings components.

4.13.2 Activity Timeline

July 2009 – September 2011.

4.13.3 Specific Deliverables

- 'Green Buildings and LEED Initiatives Case Study in Jordan' – Phase II – September 2011.
- 'Electric Energy Audit Toolkit Training for Public Schools in Jordan' –September 2011.
- 'End-of-Phase I Workshop Report – March 2011.
- 'Supply-side Assessment of the Energy Efficiency Market in Jordan' – August 2010.
- 'Energy Efficiency Audit – Ministry of Planning & International Cooperation' Report - August 2010.
- 'Energy Efficiency Audit – Ministry of Environment' Report - October 2010.
- 'KhadijahBintKhowaylid School – Energy Audit' Report – August 2010.
- 'Dahyet El Rasheed School – Energy Audit' Report – June 2010.
- Marketing materials for Website and other awareness building venues.

4.14 TASK 14: ENERGY EFFICIENCY INCENTIVE MECHANISM FOR ELECTRIC UTILITIES IN JORDAN

This activity was initiated in 2009 by USAID/Washington to support the Ministry of Energy & Mineral Resources (MEMR) and the Electricity Regulatory Commission (ERC) in assessing the economic and institutional viability of adopting an EE incentives mechanism to encourage electric utilities to invest in demand-side efficiency. The first phase of this work led to the development of a conceptual approach for an incentive structure with an overview of its technical, economic and institutional viability. The second phase provided an assessment of technical assistance needs of the key stakeholders in order to adopt such a mechanism. Preliminary stakeholder approval was secured in August 2010.

The USAID mission in Amman expressed an interest in this concept and funded additional work to assess the market potential for EE in Jordan for the period 2012-2022 and to develop a ‘policy package’ to assist H.E. the Minister of Energy in seeking formal approval from the Cabinet to integrate the incentive mechanism into the regulations. In early December 2010, Nexant completed the basic part of this package which was a draft final report titled “Proposed Energy Efficiency Incentive Mechanism for Jordan’s Electricity Sector” and a power point presentation. The package was developed for use by the Minister to discuss the mechanism with other policy makers and Government senior officials. Due to the rapid changes in the Jordanian Cabinet and to the inability to get this issue on the priority list of either of these two responsible officials, no further activities were pursued.

For closure of this task, Nexant submitted a complete set of electronic files of all deliverables under this task on compact disks to both the USAID Mission in Amman and to USAID/Washington.

4.14.1 Output and Results

- Acceptance in concept by the key stakeholders (ERC, NEPCO JEPSCO, EDCO, IDECO and MEMR) to further develop the framework of the incentive mechanism.
- Development of system-wide long-run marginal costs through a participatory and consultative process.
- Development of a basic framework of the incentive mechanism.
- Assessment of cost-effectiveness of the mechanism including and projected rate impacts.
- Facilitation of stakeholders’ dialogue to discuss and solicit comments on the mechanism.
- Assessment of technical assistance and capacity building needs for implementation.
- Development of EE forecasted potential 2012-2022.
- Preparation of an executive ‘policy package’ to secure government approval.

4.14.2 Outcome and Success

This activity demonstrated success and achievements in two areas:

- It demonstrated the value of the SMES task order in initiating activities that can be later owned and funded by field missions. Phase I of this activity was financed by USAID/Washington but follow-on work was funded by USAID/Jordan.
- Despite the slowdown in turning this approach into a market practice as a result of a change of Government officials, the current Government is keen on continuing with the concept of encouraging private sector investment to reduce demand on electricity.
- This work led to a competitive EE procurement by USAID/Jordan in February 2013 for a total value of not-to-exceed \$21 million.

4.14.3 Activity Timeline

July 2009 – December 2010.

4.14.4 Specific Deliverables

- ‘Energy Efficiency Incentive Mechanism in Jordan’ Phase I Final Report – August 2010.
- ‘Technical Assistance Needs for the Energy Efficiency Mechanism for Jordan’ Phase II Final Report – August 2010.
- ‘Energy Efficiency Incentive Mechanism for Jordan’s Electricity Sector’ Phase III Final Report – November 2010.
- ‘Demand Side Electric Efficiency Potential in Jordan through 2022’ Report – February 2011.
- ‘A Proposed Framework for an Energy Efficiency Incentive Mechanism for Jordan’s Electricity Sector’ Policy Package -- February 2011.

4.15 TASK 15: LIBERIA - ELECTRICITY AFFORDABILITY, SAFETY AND LOSS REDUCTION

With the Liberia Electricity Company (LEC), Nexant managed this project which aimed to assess the extent to which introducing energy efficiency interventions and prepayment meters would impact customer consumption. It was anticipated that switching from conventional electronic meters to prepayment meters, educating customers on energy efficiency opportunities, and exchanging incandescent bulbs to Compact Fluorescent Lights (CFL) interventions would reduce consumption and increase the affordability of service for LEC customers. The project also aimed to assess the impact of these interventions on LEC's non-technical losses due to theft, graft, and poor customer payment performance. To conduct this evaluation, a third of LEC's existing customers were switched from conventional meters to split pre-payment meters (PPT) and energy efficiency measures were introduced to a sub-set of those switched.

4.15.1 Output and Results

- 771 pre-payment meters installed.
- 264 electricity efficiency and safety assessments conducted.
- 410 light bulbs exchanged for CFLs.
- Pre- and post- project surveys conducted.
- Development of Master Database to track consumption pre- and post- interventions for targeted households and businesses.
- Analysis and preparation of evaluation report.

4.15.2 Outcome and Success

- Evaluation results found that, on average, switching to pre-payment meters reduced customer consumption on the order of 25% with greater benefits for those having their inefficient incandescent lights exchanged for CFLs (savings ranging from 27% for residential customers and 36% for commercial customers).
- Pre-project and post-project surveys found that switching to pre-payment meters in a context of high electricity tariffs (\$.54c/ kWh) was a strong catalyst in itself to incentivize customers to reduce consumption, either through behavior changes (turning off lights, etc.) and/or investing in CFLs. In fact, many of the customer sub-set targeted for bulb exchanges under the project had already switched to CFLs on their own, as had many that only received a prepayment meter.
- The value to LEC of the interventions undertaken was three-fold: the consumption reductions make it possible to serve more customers with the same generation capacity, to avoid troublesome long-term arrears, and to reduce its costs of service through eliminating billing, collection and disconnections for non-payment. The project also helps LEC to better understand its customer base and the value to customers of actions that it could take in the future to improve customer relations and consumption affordability.
- The potential benefits to LEC of theft reduction (from split prepayment meters) did not ensue primarily due to continuing problems with theft and graft that may be more effectively addressed once the distribution grid re-configuration is complete. This will

extend the deadly medium voltage lines and situate them below the low voltage lines, which will deter climbing poles to tap into the low voltage lines or bypass the pole-mounted split prepayment meters.

4.15.3 Activity Timeline

August 2009 – April 2013.

4.15.4 Specific Deliverables

- Final report titled, “Impacts of Prepayment Meters and Energy Efficiency Measures on Electricity Consumption and Loss Reduction in Monrovia, Liberia.”

4.16 TASK 16

See Task 13, Green Buildings in Jordan.

4.17 TASK 17: LIBERIA VIDEO

Nexant prepared a video to be used in USAID outreach efforts as well as USAID infrastructure, post-conflict reconstruction, and economic growth training courses and workshops for USG officers working in energy, environment, economic growth and related sectors. Nexant hired a filmmaking company to shoot a four part film focused on the following topics in Liberia: (a) introduction to post-conflict Liberia and its energy sector; (b) post-conflict reconstruction of generation, transmission and distribution infrastructure to primarily serve urban customers; (c) the MHI LEC management contract; and (d) off-grid service provision in rural areas. The video company completed additional filming by February 2013 and submitted the final film to USAID and Nexant in April 2013. The film is available on the USAID YouTube site and prompted the IFC Quarterly Newsletter to publish the film excerpts.

4.17.1 Activity Timeline

April 2012 – April 2013.

4.17.2 Specific Deliverables

- Four-part film available as one disc DVD and uploaded to the USAID YouTube site.

5.1 MODIFICATIONS, FUNDING INCREASES

In total, the SMES program underwent 13 contract modifications resulting in the final obligated funding amount of \$3,999,812.00.

5.2 DOCUMENTATION AND RECORDS PLAN

Nexant, Inc. maintains all records electronically and hard-copy for USAID's request. All deliverables have been submitted to USAID throughout the course of the project.

The table below summarizes the task order budget as of the end of June 2013. The table lists provides a budget breakdown by each of the 17 tasks and the general management task. Tasks are listed in the order they were created with each given a 3-digit number (001 through 017) that was also to label each project in the periodically submitted invoices. The general management task was given the number 555. Additionally, a rate re-billing in the amount of \$245,057.01 was authorized for the project retroactively as shown in the table below.

The table also separates the funding provided by USAID/Washington from those allocated by the USAID/Jordan Mission. Of the total final budget of \$3,999,812, USAID/Washington provided \$3,281,436 while \$718,376 was allocated by USAID/Jordan. The project fees collected were under 5% of the total amount.

TASK	Subtotal	Fees	Total
Mongolia - Capacity Building Phase I (001)	\$ 35,302.46	\$ 1,765.11	\$ 37,067.57
Mozambique - LPG Market Assessment (002)	\$ 45,688.81	\$ 2,284.46	\$ 47,973.27
Egypt - EE Procurement Pilot (003)	\$ 212,546.46	\$ 10,627.56	\$ 223,174.02
Brazil / India - Watergy (004)	\$ 73,196.23	\$ 3,659.81	\$ 76,856.04
Slum Elec. - Workshops (005)	\$ 49,253.88	\$ 2,462.69	\$ 51,716.57
Mongolia - EE Capacity Building (006)	\$ 154,287.58	\$ 7,703.87	\$ 161,991.45
Mozambique - LPG Pilot (007)	\$ 52,032.96	\$ 2,601.61	\$ 54,634.57
Mexico - EE Procurement Pilot (008)	\$ 73,558.66	\$ 3,677.98	\$ 77,236.64
Slum Elec. - General Activities (009)	\$ 107,454.15	\$ 5,372.72	\$ 112,826.87
Slum Electrification - India Pilot (010)	\$ 489,751.92	\$ 24,487.61	\$ 514,239.53
Slum Electrification - Brazil Pilots (011)	\$ 483,057.22	\$ 24,152.89	\$ 507,210.11
EE Initiative in India (012)	\$ 101,260.44	\$ 4,993.66	\$ 106,254.10
EE Utility Incentives Phase III (Jordan) (014)	\$ 175,203.00	\$ 8,760.00	\$ 183,963.00
Liberia - Electricity Affordability, Safety and Loss Reduction(015)	\$ 542,193.18	\$ 27,587.34	\$ 569,780.52
Liberia Video (017)	\$ 169,819.50	\$ 8,521.52	\$ 178,341.02
General Management Task (555)	\$ 126,503.11	\$ 6,610.23	\$ 133,113.34
Authorized Rate Re-bill (2004-2012)	\$ 245,057.01	\$ -	\$ 245,057.01
Total Allocated Funds from USAID/W	\$ 3,136,166.57	\$ 145,269.06	\$ 3,281,435.63
			\$ -
Green Buildings in Jordan (013)	\$ 442,577.19	\$ 22,128.95	\$ 464,706.14
EE Utility Incentives Phase III (Jordan) (014)	\$ 147,067.09	\$ 7,353.56	\$ 154,420.65
Green Buildings in Jordan Phase II (016)	\$ 94,523.42	\$ 4,726.16	\$ 99,249.58
Total Allocated Funds from USAID/Jordan	\$ 684,167.70	\$ 34,208.67	\$ 718,376.37
			\$ -
SMES Program Total	\$ 3,820,334.27	\$ 179,477.73	\$ 3,999,812.00

U.S. Agency for International Development

1300 Pennsylvania Avenue, NW

Washington, DC 20523

Tel: (202) 712-0000

Fax: (202) 216-3524

www.usaid.gov