



Draft Design and Monitoring Framework

Project Number: 42001
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Philippines: Energy Efficiency Project

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Asian Development Bank

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impact Cost of energy production (and Philippine oil import) reduced</p>	<ul style="list-style-type: none"> • Reduced government expenditure on energy • Lower cost of power by electricity cooperatives (EC) 	<ul style="list-style-type: none"> • Annual Philippine Energy Plan • Annual report of National Electrification Administration (NEA) 	<p>Assumption</p> <ul style="list-style-type: none"> • Consumer willingness to accept and adopt energy efficiency measures during and beyond project period. <p>Risks</p> <ul style="list-style-type: none"> • Government not enforcing efficiency standards in future • Failure to transfer lamp waste recycling facility to private operator after initial period.
<p>Outcome</p> <ul style="list-style-type: none"> • Consumers investing in energy efficient appliances (and projects) to reduce their energy cost • Quantifiable energy savings in buildings and improved capacity of energy service companies (ESCO) to undertake energy efficiency projects • Appropriate equipment testing and safe disposal of fluorescent lights (compact fluorescent lamps [CFL] and fluorescent tube lamps) 	<ul style="list-style-type: none"> • Energy consumption in public buildings (by 5% reduced levels from 2007) • Peak demand reduction in ECs (about 300 megawatts [MW]) and consumer savings of about 50 kilowatt-hours each year for each CFL • Recovery of residual mercury from about 5,000,000 fluorescent lights within 24 months 	<ul style="list-style-type: none"> • Program progress reports • Program surveys and monitoring & evaluation reports • NEA annual reports 	<p>Assumptions</p> <ul style="list-style-type: none"> • Strong commitment by electric utilities and rural ECs to implement programs • Presidential Task Force on Climate Change will continue to lead energy efficiency projects • There are sufficient energy saving opportunities in the commercial and industrial sectors. <p>Risks</p> <ul style="list-style-type: none"> • Market acceptance of the super ESCO business models • Technical credibility of ESCOs • Consensus among four fragmented “Efficient Building” groups will continue
<p>Outputs</p> <ol style="list-style-type: none"> 1. Implementation of lighting retrofits in selected government buildings 2. Installation of 9 million CFLs to residential 	<ol style="list-style-type: none"> 1. Overall annual energy savings in government buildings of 7,000 megawatt-hours (MWh) by 2010 2. Overall peak load reduction of 180 	<p>Program monitoring and evaluation reports</p> <p>NEA annual reports Energy Regulatory</p>	<p>Assumptions</p> <ul style="list-style-type: none"> • An independent authority will be able to monitor and evaluate benefits. • ECs’ ability to distribute CFLs to end customers effectively <p>Risks</p> <ul style="list-style-type: none"> • Inappropriate collection

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<p>consumers</p> <p>3. Implementation of energy efficient public lighting programs</p> <p>4. Expansion of testing laboratory capacity and establishment of a fluorescent lighting recycling plant</p> <p>5. Establishment of the Super ESCO as a PNOC subsidiary</p> <p>6. Certification of energy efficient buildings operational</p>	<p>MW and annual energy savings 235,000 MWh</p> <p>3. Peak demand reduction of 0.5MW in the Cagayan Electric Power and Light Company, Inc. (CEPALCO) system and an annual cost saving of ₱13 million to the city of Cagayan de Oro (LGU)</p> <p>4. Recycling plant and testing lab operational by 2010</p> <p>5. At least three projects operational by 2010</p> <p>Super ESCO management board recruited within 6 months</p> <p>6. Complete system installed and ten certificates issued</p>	<p>Commission publications</p> <p>Local government unit (LGU) and CEPALCO annual report</p> <p>Procurement documentation, Progress reports from operator</p> <p>Pilot program progress report</p> <p>Pilot program progress report</p>	<p>of incandescents</p> <ul style="list-style-type: none"> • Programmatic Clean Development Mechanism not recognized fully by United Nations Framework Convention on Climate Change • Delay in developing the regulatory framework for lamp waste and energy labeling
<p>Activities with Milestones</p> <p>Component 1: Efficient Lighting Initiative</p> <p>Subcomponent 1.1: Retrofit Government Office Buildings</p> <p>1.1 Finalize government buildings by 1st quarter 2009</p> <p>1.2 Equipment procurement and installation by 4th quarter 2009</p> <p>1.3 Monitoring & verification of savings by 1st quarter, 2010</p> <p>1.4 Preparation of case studies and dissemination by 3rd quarter 2010</p> <p>Subcomponent 1.2: National Residential Lighting Program</p> <p>2.1 Confirmation of utilities and ECs and finalize scope by 3rd quarter 2008</p> <p>2.2 Completion of procurement and distribution by 2nd quarter 2009</p> <p>2.3 Consumer surveys, monitoring & evaluation of savings by 4th quarter 2009</p> <p>2.4 Preparation of case studies and dissemination by 2nd quarter 2010</p> <p>Subcomponent 1.3: Public Lighting Retrofit Program</p> <p>3.1 Confirmation of sites and signing of Memorandum of Agreement by 3rd quarter 2008</p> <p>3.2 Completion of detailed design, procurement and installation by 4th quarter 2009</p> <p>3.3 Completion Monitoring & Verification of savings by 2nd quarter 2010</p>			<p>Inputs</p> <ul style="list-style-type: none"> • ADB - \$30 million loan <p>Government Buildings - \$3.0 million</p> <p>CFLs and Light Emitting Diodes (LED) - \$13.0 million</p> <p>Public Lighting - \$1.5 million</p> <p>Energy Efficiency Testing & Lamp Waste Management - \$4.0 million</p> <p>Energy Efficiency Financing Facility - \$5.6 million</p> <p>Efficient Buildings - \$0.5 million</p> <p>Communication – \$2.5</p>

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<p>3.4 Preparation of case studies and Dissemination by Dec 2010.</p> <p>Subcomponent 1.4: Energy Efficiency Testing and Lamp Waste Management</p> <p>4.1 Procurement and installation of new testing equipment by 2nd quarter 2009</p> <p>4.2 Laboratory accreditation and Standards Development by 1st quarter 2010</p> <p>4.3 Procurement of pilot Lamp Waste Management facility by 3rd quarter 2009</p> <p>4.5 Facility transfer to private operator by 3rd quarter 2010</p> <p>Component 2: Efficiency Initiatives in Buildings and Industries</p> <p>Subcomponent 2.1 : Super ESCO</p> <p>5.1 Establish ESCO as a subsidiary of PNOC and apply for its Qausi Banking License</p> <p>5.2 Develop detailed Business Plan for ESCO—targets, logo, management, Board and Technical Panel</p> <p>5.3 Confirmation of up to 8 ESCO demonstration projects by 4th quarter 2008</p> <p>5.4 Set technical panel for project technical evaluation by 3rd quarter 2008</p> <p>5.5 Development of standard documentation by 3rd quarter 2008</p> <p>5.6 Technical Panel to finalize procurement for the pilots by 2nd quarter 2009</p> <p>5.7 Conduct ESCO workshops in Monitoring & Verification, drafting engineering procurement and construction contracts, and marketing of ESCO services by 3rd–4th quarter 2009</p> <p>5.8 Conduct Monitoring & Verification of savings and evaluate project performance by 1st and 3rd quarter 2009</p> <p>Subcomponent 2.2: Efficient Building Initiative</p> <p>6.1 Establish technical committee chair by the Department of Energy on the development of a single green building rating system and the most effective structure for implementation by 4th quarter 2008</p> <p>6.2 Identify and select two projects for demonstration by 4th quarter 2008</p> <p>6.3 Development of the local green building rating system, initial score assessment and submittal software by 4th quarter 2008</p> <p>6.4 Establish the accreditation requirement of assessors and the development of the training curriculum for accreditation by 1st quarter 2009</p> <p>6.5 Conduct demonstration projects by applying the newly developed rating system for certification by 1st quarter 2009 and 1st quarter 2010</p> <p>6.6 Preparation of case studies by 1st quarter 2010</p> <p>6.7 Launching of the Philippines Green Building Rating System by 2nd quarter 2010</p> <p>Component 3: Communication and Social Mobilization</p> <p>7.1 Finalize communication plan through consultation</p> <p>7.2 Recruit Communication firm and implement plan</p>			<p>million</p> <p>Implementation support - \$1.5 million</p> <p>Contingencies and Financing Charges -\$8.4 million</p> <ul style="list-style-type: none"> • Government - \$6.5 million <p>Partial funding of Lamp Waste Management facility and testing lab; Communication and social mobilization</p>