



## Global Environment Facility

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April 9, 2009

Dear Council Member,

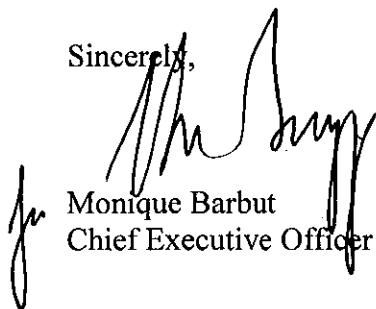
The World Bank/IFC as the Implementing Agency for the project entitled ***Philippines: Sustainable Energy Finance Program***, has submitted the attached proposed project document for CEO endorsement prior to final Agency approval of the project document in accordance with the World Bank/IFC procedures.

The Secretariat has reviewed the project document. It is consistent with the project concept approved by the Council in August 2006 and the proposed project remains consistent with the Instrument and GEF policies and procedures. The attached explanation prepared by the World Bank satisfactorily details how Council's comments and those of the STAP have been addressed.

We have today posted the proposed project document on the GEF website at [www.TheGEF.org](http://www.TheGEF.org) for your information. We would welcome any comments you may wish to provide by May 7, 2009 before I endorse the project. You may send your comments to [gcoordination@TheGEF.org](mailto:gcoordination@TheGEF.org).

If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to download the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,



Monique Barbut  
Chief Executive Officer and Chairperson

Attachment: Project Document

cc: Alternates, GEF Agencies, STAP, Trustee



# REQUEST FOR CEO ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project

THE GEF TRUST FUND

Submission Date: 04/06/2009

## PART I: PROJECT INFORMATION

GEFSEC PROJECT ID: 2108

GEF AGENCY PROJECT ID: 507694

COUNTRY(IES): Philippines

PROJECT TITLE: Philippines Sustainable Energy Finance Program (PHILSEF)

GEF AGENCY(IES): World Bank, (select), (select)

OTHER EXECUTING PARTNER(S): IFC

GEF FOCAL AREA(s): Climate Change

GEF-4 STRATEGIC PROGRAM(s): CC-SP1, CC-SP2, CC-SP3

(see preparation guidelines section on exactly what to write)

NAME OF PARENT PROGRAM/UMBRELLA PROJECT:

Expected Calendar (mm/dd/yy)	
Milestones	Dates
Work Program (for FSPs only)	August 2006
Agency Approval date	05/15/2009
Implementation Start	05/15/2009
Mid-term Evaluation (if planned)	05/15/2011
Project Closing Date	05/15/2012

### A. PROJECT FRAMEWORK (Expand table as necessary)

<b>Project Objective:</b> To contribute to market transformation through mobilization of private financial sector investment in sustainable energy projects in order to reduce GHG emissions, to improve energy security and economic development in the Philippines.								
Project Components	Indicate whether Investment, TA, or STA <sup>2</sup>	Expected Outcomes	Expected Outputs	GEF Financing <sup>1</sup>		Co-Financing <sup>1</sup>		Total (\$) c=a+ b
				(\$ ) a	%	(\$ ) b	%	
1. Tailored financial products for FIs	Investment	Increased volume of SE investment	Increased commercial lending for SE projects	3,000,000	10	27,000,000	90	30,000,000
2. Advisory Services for FIs	TA	Increased access to SE financing in the market	Increased due diligence capability of FIs to assess SE projects	601,164	42	818,902	58	1,420,066
3. Advisory Services for intermediaries	TA	Increased number of commercially bankable SE investments	Increased project development capacity SE project developers	894,538	71	361,840	29	1,256,378
4. Advisory services on market enabling environment	TA	Increased volume of SE investment	Improved awareness of SE project opportunities. Improved regulatory environment to support such investments	223,614	76	72,400	24	296,014
5. Monitoring and Evaluation	STA	Improvements in project implementation and lessons learned	Mid-term evaluation and final evaluation	300,000	100			300,000
6. Project management				280,684	50	281,398	50	562,082

<b>Total Project Costs</b>	<b>A5,300,000</b>	16	B28,534,540	84	<b>33,834,540</b>
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<sup>1</sup> List the \$ by project components. The percentage is the share of GEF and Co-financing respectively of the total amount for the component.

<sup>2</sup> TA = Technical Assistance; STA = Scientific & Technical Analysis.

**B. SOURCES OF CONFIRMED CO-FINANCING FOR THE PROJECT** (expand the table line items as necessary)

<i>Name of Co-financier (source)</i>	<i>Classification</i>	<i>Type</i>	<i>Project</i>	<i>%*</i>
IFC	Exec. Agency	Guarantee	27,000,000	95
IFC	Exec. Agency	Grant	1,134,700	4
FIs	Private Sector	Grant	399,840	1
<b>Total Co-financing</b>			B28,534,540	100%

\* Percentage of each co-financier's contribution at CEO endorsement to total co-financing.

**C. FINANCING PLAN SUMMARY FOR THE PROJECT (\$)**

	<i>Project Preparation a</i>	<i>Project B</i>	<i>Total c = a + b</i>	<i>Agency Fee</i>	<i>For comparison: GEF and Co-financing at PIF</i>
GEF financing	0	A5,300,000	5,300,000	530,000	6,300,000
Co-financing		B28,534,540	28,534,540		23,000,000
<b>Total</b>	0	33,834,540	33,834,540	530,000	29,300,000

**D. GEF RESOURCES REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES)<sup>1</sup>**

<i>GEF Agency</i>	<i>Focal Area</i>	<i>Country Name/ Global</i>	<i>(in \$)</i>		
			<i>Project (a)</i>	<i>Agency Fee (b)<sup>2</sup></i>	<i>Total c=a+b</i>
(select)	(select)				
<b>Total GEF Resources</b>			0	0	0

<sup>1</sup> No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

<sup>2</sup> Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

**E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:**

<i>Component</i>	<i>Estimated person weeks</i>	<i>GEF amount(\$)</i>	<i>Co-financing (\$)</i>	<i>Project total (\$)</i>
Local consultants*	1960	921,978	898,522	1,820,500
International consultants*	468	919,940	354,780	1,274,720
<b>Total</b>	2428	1,841,918	1,253,302	3,095,220

\* Details to be provided in Annex C.

**F. PROJECT MANAGEMENT BUDGET/COST**

<i>Cost Items</i>	<i>Total Estimated person weeks</i>	<i>GEF amount (\$)</i>	<i>Co-financing (\$)</i>	<i>Project total (\$)</i>
Local consultants*	192	36,000	100,500	136,500
International consultants*	72	130,500	88,820	219,320
Office facilities, equipment, vehicles and communications*		72,078	72,078	144,156
Travel*		33,101	20,000	53,101
Miscellaneous		9,005		9,005
<b>Total</b>	264	280,684	281,398	562,082

\* Details to be provided in Annex C.

**G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? yes ☒ no ☐**

(If non-grant instruments are used, provide in Annex E an indicative calendar of expected reflows to your agency and to the GEF Trust Fund).

**H. DESCRIBE THE BUDGETED M & E PLAN:** The M&E framework will assess the Program's (i) impact on SE projects supported by credit lines, guarantees and TA and implemented by the SE/ESCO businesses, (ii) impact on participating FIs, (iii) impact on the Philippines markets, and (iv) management and operations. Building on the LogFrame (see Annex 3), the M&E plan gives appropriate SMART indicators to assess the Program's financial/business, energy, and environmental outputs, as well as its outcomes. This should include measuring its market impact to assess whether or not it has achieved its primary objective of establishing a sustained market capability to develop SE projects and an expanded market for SE project finance. Additionally, the M&E process will also allow for an assessment of management and operations ("process evaluation") of both the investment and technical assistance programs.

IFC will collect data for the M&E through a combination of self-reporting by Program participants, implementation team record keeping, and third party investigations. IFC will employ a third party M&E contractor to provide independent verification, analysis and reporting of findings. The key M&E deliverables are:

- Pre-project M&E plan
- Data collection tools
- Baseline data – this will be collected to establish a baseline for each financial institution as it enters the program. IFC will also collect improved baseline data on equipment suppliers etc at the start of Program implementation
- Semi-annual feedback to management on Program implementation
- Midterm review during the third year of operation
- End of Project review
- Post-project evaluation

The total M&E costs are estimated at \$300,000. A budget of \$200 000 has been set aside for contracting external monitoring and evaluation contractors. Other costs associated with data collection will be included in the staff costs for team members. These costs are not expected to exceed \$100, 000.

We will use an independent evaluator only where an outside party brings specific value. The M&E approach will:

1. use an outside evaluator to develop the monitoring and data collection tools, and evaluate the data developed at both the mid-point and conclusion of the Project;
2. use Project staff to provide real-time monitoring throughout implementation. M&E will be integrated in the Project through four main phases:

**Phase I – Pre-Project:** An independent M&E firm, which will serve as the evaluator throughout the Project, will be engaged as the Project evaluator. Its first assignment will be to set the framework for the evaluation process, including (i) data collection forms that will be used by the PMO to monitor Project inputs, outputs, and results during implementation; (ii) define acceptable sources of data, (iii) required processes and systems to collect data, and (iv) processes and systems to ensure quality of data, among others.

A baseline study will be undertaken, under the guidance of the independent evaluator, and primarily conducted by the PMO. This early engagement will ensure that the PMO can embed in its project management and operational policies appropriate processes and systems to support the evaluation process. This early engagement will promote transparency, accuracy and efficiency in the evaluation process throughout the Project duration.

**Phase II - Mid-Term Evaluation:** This evaluation will be performed by the independent evaluator, and will take place 2-3 years after the Project is started. Its main objectives will be to (i) identify opportunities to improve Project execution effectiveness; (ii) refine the initial framework for evaluation being used by the PMO, and (iii) as necessary, recommend adjustments in the Project execution strategy and implementation processes to the PMO. Some of the key areas of review during the mid-term evaluation would include:

1. Project status measured with respect to its results based management logframe for outputs, outcomes and impacts. Across the indicators, where relevant, measurement will be provided with respect to baseline.
2. Results from the customer surveys and interviews capturing feedback on level of satisfaction with the Project activities and outcome of advice, training and other assistance provided by the Project. Surveys should include feedback on relevance, value-added, quality of prepared materials and provided services etc.

3. Perception of the Project by other external stakeholders such as relevant business associations, training partners etc.
4. Analyze Program management procedures and administration.
5. Cost efficiency analysis, benchmarking against initiatives of GEF, IFC PEP and/or other technical assistance projects.
6. Lessons learned and recommendations for improvement in Project organization, activities and targets.

• **Phase III - End-of-Project Evaluation:** This evaluation will be performed by the independent evaluator at the conclusion of the Project execution, and will review the similar areas to the mid-term evaluation and measure the Project's direct impacts .

The GEF Terminal evaluation is intended to be completed at this point, approximately six months after the close of Project operations, and upon completion of the End of Project Evaluation study, which will provide the basis of the Terminal Evaluation. Therefore the End of Project Evaluation will incorporate all GEF requirements for Terminal Evaluation.

**PART II: PROJECT JUSTIFICATION:** In addition to the following questions, please ensure that the project design incorporates key GEF operational principles, including sustainability of global environmental benefits, institutional continuity and replicability, keeping in mind that these principles will be monitored rigorously in the annual Project Implementation Review and other Review stages.

- A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:** **Limited awareness in the banking sector about the real potential of the Sustainable Energy segment** – A number of banks interviewed demonstrated an understanding at the conceptual level of the attractiveness of financing sustainable energy projects. However, they did not know how to penetrate the market and were looking for assistance to develop a lending strategy and expertise to evaluate projects. **Intervention:** Working with banks one-on-one to develop lending strategy.

**Banks' lack of experience in evaluating SE projects** – Banks are not yet comfortable that they have the skills, process and methods to evaluate the different types of sustainable energy project. They need capacity building, and above all, transaction experience to be assured that they can understand the technological, performance and operational risks, as well as the cash flow profile associated with sustainable energy projects. **Intervention:** Embedding technical advisers within the banks.

**Banks' high level of distressed assets leads to strong risk aversion and limits financing to SE** – many financial institutions are highly liquid and would like to expand their lending activities into untapped market segments. However, given its current high level of distressed assets, the banking sector is very cautious about expanding into sectors where it has little experience and does not understand the risk profile. **Intervention:** Guarantee instrument to encourage FIs into this market segment. Technical assistance to help assess project risk.

**Lending policies that require high collaterals raises opportunity costs and risks** – a further consequence of high levels of non-performing loans is that banks require high collaterals for companies/projects with a higher credit risk profile. With many SE projects, the assets have a poor secondary market value or cannot be easily removed from site, and so the assets are rated as having a low collateral value and need to be secured in other ways. The provision of additional security raises the opportunity cost and financial risk of borrowing for SE projects. **Intervention:** Guarantee instrument to encourage FIs into this market segment. Training of FIs to recognize and accept alternative security features such as: building a loss reserve from energy savings, accepting that energy savings can entirely service loan repayments, recognizing the "essential service" nature of the energy-related asset.

**Companies promoting and executing SE projects display underdeveloped marketing and business development skills** – During pre-appraisal meetings, ESCOs indicated that the overall level of sophistication in marketing and business development among most companies executing SE projects is low, thus reducing the volume of deal origination. Most firms are focused on certain technologies as opposed to offering broader solutions, and, with some exceptions, few seemed to have developed a clear strategy. The sales process is often not institutionalized, and is typically carried out by the CEO and/or their senior associates. Further, few displayed institutional presentations conveying the company's experience, solutions, etc. **Intervention:** Capacity building for project developers.

**Perceived lack of competence in certain companies delivering SE services may be increasing perceived risk of SE project** – During pre-appraisal it was noted that there are issues surrounding the perceived competence of the companies delivering SE services: many end-users are resistant to project proposals because they feel that either the technology or the project developer is unreliable. **Intervention:** Capacity building for project developers.

**Lack of equity limits range of product offerings by ESCOs, and reduced value of performance guarantee.** Almost all of the ESCOs are undercapitalized for supporting a performance contracting or vendor financing business model. **Intervention:** TA support to ESCOs to assist equity-raising. Also, credit enhancement tools provided through FIs.

**Slow learning curve for end-users** – While the recent increases in the power tariffs have brought attention to energy costs and energy efficiency, end-users have not developed, to date, a culture or experience in energy management. Before a company makes an investment it needs to travel along an awareness continuum: at first they are ignorant of the opportunity, at the end they are convinced that they must make the investment. In the Philippines most consumers are aware of the problem and are starting to research different investment options, but support is needed to help them make the right choice and to commit to invest. **Intervention:** Provide objective information on costs/benefits of investments. Build capacity to assist end users evaluate different investment options.

**Limited availability of financing beyond 5 years** – During pre-appraisal, some end-users that have access to unsecured financing noted that should longer-term financing be more available, they would consider retaining loans for more SE projects. A number of companies, particularly those in energy intensive industries, have captured many of the “low hanging fruit” project opportunities with shorter paybacks, and are now willing to invest in projects that may require longer repayment periods. **Intervention:** Provision of guarantees to the FIs.

**Environmental Impact:** The project is expected to result in avoided CO2 emissions of 3.1 million tons over a 10 year period.

- B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL AND/OR REGIONAL PRIORITIES/PLANS:** The Philippines Department of Energy (DOE) has actively engaged with IFC in structuring a Program which complements and directly leverages the extensive energy efficiency and renewable energy market development strategy of the DOE. DOE provided a letter to the Philippines GEF Focal Point explicitly supporting the Program. In 2001, the Philippines Congress enacted the Electricity Power Industry Reform Act (EPIRA), which was intended to open the industry for greater competition and increased private sector participation.

Over the last several years, the Philippine government has been promoting a policy to achieve energy independence by increasing the use of indigenous and renewable energy resources, increasing the use of alternative fuels, and enhancing energy efficiency and conservation programs. The passage of the EPIRA has created significant changes to date in the electric power industry in the Philippines. It mandated the privatization of the National Power Corporation (NPC) and created a number of new institutions and set a number of key objectives. In addition to these changes, the Philippine President issued Administrative Order No. 126 on August 13, 2005 directing enhanced implementation of the Government's energy conservation program by adopting additional measures to limit the use of petroleum products, and to reduce electricity consumption by at least 10%. Furthermore, it is the declared policy of the Philippine government to promote the judicious conservation and efficient utilization of energy resources through adoption of cost-effective options toward the efficient use of energy to minimize environmental impact.

The Biofuels Act of 2006 is expected to reduce the country's dependence on imported fuels over the long-term by mandating the graduated use of biodiesel and bioethanol nationwide. Subsequently, in May 2007, the law's Implementing Rules and Regulations (IRR) was approved. Currently, several projects in the form of infrastructure facilities and biofuels conversion plants are being planned and implemented.

The Renewable Energy Act was passed into law in December 2008. The Act aims to promote the development, utilization and commercialization of renewable energy resources such as geothermal,

hydropower, wind, solar, ocean and biomass. Private sector participation will also be encouraged through the granting of fiscal and non-fiscal incentives. A National Renewable Energy Board and a Renewable Energy Trust Fund will also be established.

The Department of Energy will re-file with the 14th Congress the Energy Conservation Bill to institutionalize energy conservation and enhance the efficient use of energy in the country. The bill will also revitalize and strengthen the energy conservation programs developed such as the nationwide energy monitoring program, product labeling and energy efficiency promotion.

In addition to these strategies, President Arroyo has resumed the “Energy Conservation Movement”, an informal group of representatives of the private sector that works under the Department of Energy and advises on SE issues. There is, therefore, a strong Government-led initiative to put in place a regulatory and promotional framework to encourage investment in both renewable energy and energy efficiency which is very complementary to the proposed IFC/GEF Project. Both the regulatory changes described above and the initiatives by the Philippine government in the area of sustainable energy show strong country “drivenness” for supporting the Philippines Sustainable Energy Finance Program. This is particularly relevant now that the Renewable Energy Bill has been approved by both the Senate and Congress. IFC has been approached by a broad coalition of private sector participants to play a non-partisan role in convening relevant stakeholders and supporting the development of sound, practical implementing rules and regulations to ensure the Bill is effectively implemented.

- C. **DESCRIBE THE CONSISTENCY OF THE PROJECT WITH [GEF STRATEGIES](#) AND STRATEGIC PROGRAMS:** The PHILSEF is submitted under GEF focal area Climate Change covering Operational Program 1: Promoting Energy Efficiency in Residential and Commercial Buildings, OP 2: Promoting Energy Efficiency in the Industrial Sector, OP3: Promoting Market Approaches for Renewable Energy, and OP 4: Promoting Sustainable Energy Production from Biomass. The use of GEF funding is in line with overall GEF strategy to facilitate, leverage, and complement other sources of financing, in this case mainly private financing. The proposed program is in accordance with the Climate Change focal area overarching goal to support market transformation outcomes that contribute to GHG emissions reduction and avoidance
- D. **JUSTIFY THE TYPE OF FINANCING SUPPORT PROVIDED WITH THE GEF RESOURCES.** The Philippines Government estimates that the investment requirement for sustainable energy projects is around \$7.8 billion. This is a large number representing the technical potential and should not be confused with the investment potential for real, economically viable projects. However, given the high energy prices in Philippines and the high level of awareness regarding impending threatened blackouts, the market opportunity for financial institutions, equipment suppliers etc is still very significant. If the threatened blackouts are to be avoided it is essential for financial institutions, in particular, to actively engage in this market segment to increase the overall level of investment in sustainable energy. In discussions with financial institutions during project preparation it was clear that the level of financing provided to date is marginal. The thesis of this program is, therefore, to give financial institutions the tools and confidence to build a sustainable energy finance business and the incremental cost analysis is based on the level of incremental investment generated by financial institutions.

In developing the project IFC commissioned a preliminary assessment of the market for investments in sustainable energy and carried out numerous interviews with financial institutions and equipment suppliers to understand the way that sustainable energy investments are currently financed. IFC then conducted internal discussions to determine the level of appetite within IFC’s financial markets department to provide financial instruments to stimulate investment in sustainable energy. In IFC’s estimation a well timed intervention that stimulates an incremental investment by financial institutions of approximately \$60 million, over and above the amount of lending they currently book for sustainable energy assets, over the next 5 years is feasible: there is adequate capacity in the market to supply this level of goods and services, and, there is sufficient interest by the financial institutions known to IFC who, as “early adopters”, can pioneer the market development and lead other institutions into this business area thus generating the additional private sector investment demanded by the Government target.

IFC plans to make an initial allocation of US\$30 million available for risk sharing – although the initial and eventual size of these facilities (which are expected to grow over the life of the Program) will be reviewed during

individual negotiations with financial institutions. The nature of the risk sharing (or possibly IFC fully funded credit lines) will vary between institutions, based on actual demand. Learning from our experience in Central and Eastern Europe it is essential that we retain as much flexibility as possible in how to structure the guarantee agreements as individual bank strategies and market opportunities change frequently, thus dictating new strategic foci and product needs by the partner banks. The initial program target is to generate \$75 million in investment (around \$60 million in loans). IFC will, through negotiation with banks, try to reduce the level of first loss provision as much as possible whilst still maintaining an adequate incentive for the FIs to enter this new business area. As an example, in CHUEE the GEF approved a maximum first loss provision of 10% but subsequent rounds of funding have reduced this to 5%.

The amount of GEF funding for risk sharing is US\$3m with IFC investing US\$27million. It is anticipated that the IFC funds in the Guarantee Facility will be mainly used in a second loss position to enable support for larger transactions, while the GEF funds will support a small sliver of first-loss exposure. The credit facility will be structured to rely almost exclusively on the local FI's credit approval processes (with direct IFC TA support for and review of their appraisal processes), and subject to underwriting guidelines derived for each sector. If IFC is not directly involved in the transaction level guarantee it can avoid time-consuming ex-ante project evaluations by IFC staff in Washington which significantly add to transaction costs for both IFC and the FI. The risk for the GEF investment is still mitigated through: IFC's stringent appraisal of FI credit procedures; risk sharing structures (eg, <10% first loss guarantees) which ensure that the FI's interests are aligned with IFC/GEF, and through the use of TA to help with project structuring. Fees will be charged to FIs for credit lines and guarantees. These will be set at "market rates" in accordance with IFC policy of not distorting markets. These fees are not set to substantially defray the costs of operating the Program, but rather based upon local capital market conditions. IFC will encourage sharing of market development costs with the FIs through in-kind effort from FI staff as well as co-financing of technical assistance and cost-sharing of co-located energy efficiency specialists. IFC and GEF's combined role in catalyzing this market for sustainable energy is developmental. We are building local knowledge and skills so that a sustainable financing market for sustainable energy projects will thrive into the future. Our work with banks is to raise awareness around the business case for such projects. Since such projects need to be commercially viable, they should not be eligible for CDM. In negotiations with FIs we will also clarify the need to avoid double-counting. Should we become aware of banks getting projects approved under CDM we will flag them in our reporting to ensure they are not double-counted.

- E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:** IFC has engaged in extensive consultations with local stakeholders. The Program has emerged as a direct response to the needs and interests of Philippine private sector actors. IFC's local investment, advisory, and technical assistance operations provide direct links into the Philippine private and public sectors – links which will directly support and inform Program Implementation. Local stakeholder participation in the Program will be formalized through a Program Advisory Committee which will include representatives from project developers, equipment vendors industry associations, government civil society, and complementary programs' management teams. The list below indicates a number of likely Program partners among FIs as well as other stakeholders. This list is by no means exhaustive and simply serves to illustrate the profile of select interested parties. Relevant partners will be added as and when they are identified.

**Project developers:** broadly defined as energy services companies (ESCOs) which market energy efficiency and renewable energy services and equipment through a wide array of business delivery models – represent the primary vehicle (along with financial institutions) through which the Program will be delivered. During appraisal, IFC met with more than a dozen ESCOs, engineering firms, and product vendors to understand their businesses, the market dynamics and the barriers they face in growing their businesses. Particular attention was paid to the firms financing methods, and those of their clients. The Program design directly reflects the needs of project developers, and the market opportunities they face. During pre-implementation activities, IFC conducted consultations with project developers, engineering firms, and vendors of EE/RE equipment and services. During implementation, Program staff will provide direct support to these firms, including technical assistance in deal preparations and brokering multi-project and working capital financing arrangements with commercial financial institutions.

**Department of Energy:** The Philippine Department of Energy (DoE), which is responsible for developing and



implementing Philippine Government energy efficiency and renewable energy policy and programs, is the primary government agency counterpart for the Program. IFC engaged DoE in extensive consultations in the preparations of the Program to ensure consistency with the Philippine country strategy for sustainable energy market development. During implementation, DoE will be a key member of the program's advisory committee. The World Bank and ADB are currently implementing energy efficiency and renewable energy programs that are catered to specific market segments. IFC engaged these organizations in extensive dialogues to ensure complementarity among each of the programs being implemented by the organizations during the implementation.

Discussions have been held to date with a number of financial institutions. A knowledge-sharing seminar on sustainable energy financing to the members of the Bankers Association of the Philippines and the Chambers of Thrift Banks was held last July 02, 2008. Further discussions will be held during project appraisal when IFC will enter into a competitive process to identify the best match between FI capacity and comparative advantage and the sustainable energy market segments where the market is poised to develop. The process is intended to focus the FIs on the market opportunity and mobilize bank management to commit resources to the Program. Most banks expressed interest in the Program, and have requested to remain in the pool of banks being considered for partnership with IFC in the development of this market. The banks represent a range of sectoral strengths, consistent with IFC's strategy (and experience in other markets) of working with multiple banks operating in a diverse range of sectors, offering very specific financial products to address niche markets.

A proven technique IFC has employed in multiple private sector-focused market development programs in the past to secure stakeholder dialogue is to organize an Advisory Committee consisting of representatives from relevant ministries, government agencies, NGOs, private companies, utilities, and end-user associations with interest in SE project development and finance. The main role of the Advisory Committee is to provide advice and feedback on the Program design and support implementation during program operations with policy support and by facilitating key partnerships across the market. The Advisory Committee also provides a forum for the advancement of SE finance. The Advisory Committee members typically play important roles in promoting and sustaining a favorable policy environment for SE investments. The Advisory Committee will be convened semiannually to advise the Program on operational issues and promote its coordination with other national initiatives and policies. The first Advisory Committee meeting will be organized after launching the Program. The purpose of the first meeting will be to announce that the Program has started its operation, present Program strategies for the first year and discuss the implementation plan. Potential interested FIs and other partners would be invited to the meeting as observers. The purpose and the agenda of the following meetings will be to present Program activities of previous year and strategy for the upcoming year. The Committee members may provide comments and advise the Program implementation team on specific questions, and might provide information on policy, legal and government strategies related to the SE sector. The Advisory Committee can also serve as a lobbying body to support Program implementation by addressing critical SE business related policy and strategy issues at the government level. Beyond the semi-annual Advisory Committee meetings, Program management and implementation team may contact the Committee members to seek advice on issues raised during day to day Program operation. The Advisory Committee is also a potential forum to handle possible objections and questions coming on environmental and social issues related to sub-projects under the Program. These possible questions may come from the government or NGOs. In specific cases, the Committee may issue official declarations on these issues to the public.

**F. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH**

**INCREMENTAL REASONING** : The reduction in CO2 emissions from the program has been calculated through four main steps Firstly, the amount of investment to be stimulated by the program has been estimated based on the preliminary market assessment carried out during project development and the discussions with financial institutions. Secondly, the total revenues needed to capital costs, operating and maintenance, and management costs have been calculated. This assumes that 100% of the costs can be covered by energy savings. Thirdly, the needed revenues are divided by the average energy prices to determine the level of energy savings required to cover project costs. This was then compared with expected savings from projects identified during the market assessment. Finally, the CO2 emissions associated with the energy savings has been calculated based on average emissions per unit of energy saved (using Philippine Government statistics). This methodology is consistent with those used and approved by the GEF SEC for WB/IFC programs CEEF, Russia Sustainable Energy Finance Program and CHUEE.

**G. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED AND OUTLINE RISK MANAGEMENT MEASURES:**

**Political risk** Although Philippines politics does appear at time to be volatile (note the recent attempted coup and associated state of emergency) sustainable energy is considered as one of the top priorities in Philippines. Mitigated through: Active public education activities; Development of working contacts with Philippines governmental agencies; Integration of Government officials in Advisory Committee.

**Economic risks:** The economic conditions in the Philippines are currently stable. The economy is growing at 4-4.5% per year, driven by the service sector. Annual lending rates have been falling gradually: 91-day Treasury bills fell from 10.2% to 6% between 1999 and 2003, and average peso lending rates fell from 11.8% to 9.5% over the same period, with lending to higher risk customers at 12-14%. Most of the lending is short and medium term, usually up to 5 years. Mitigated through: Diversification of portfolio of projects in different industries; development of projects with companies that have export potential; investment in process-related projects that have both energy efficiency and production- related benefits.

**Risk of decreasing – or slowly increasing - energy prices:** With an average price of \$0.16/kWh electricity prices in Philippines are exceptionally high. It is not anticipated that these will drop. Mitigation: analysis of continuous monitoring of the local energy supply market will be tied to advisory support of FIs and ESCOs; consultations with Department of Energy, federal and local energy commissions; project appraisals use conservative energy price assumptions.

**Devaluation of the Peso:** Peso devaluation may decrease the energy prices in relative terms as well as undermine capacity of borrowers to repay hard currency loans. Mitigation: deal structuring and project finance principals to be used to manage foreign exchange risk, including tying loan currency to borrower's source of capital; pessimistic Peso devaluation scenarios to be included into project appraisals.

**Risk of bad financial performance of the investee or borrower:** the financial performance of the investee or borrower may pose a risk of repayment. Mitigation: IFC screens FIs to participate based upon well-established credit procedures and strong balance sheet; Guarantees subject to approval by IFC on a project approval basis for large transactions and subject to pre-established underwriting criteria for smaller transactions and portfolio guarantees; Pari passu guarantee structure ensures that FI interests are aligned with GEF's from a credit review perspective; very small percentage first loss avoids moral hazard issues of unaligned FI/IFC interests.

**Risk of technology choice:** The chosen technology will not provide the expected savings, or will require additional financing. Mitigation: Basic project finance principals employed: apportion risk in deal structure to those able to manage that risk – not the FI; required guarantees of performance from the equipment suppliers; TA program provides technical appraisal support to FIs for projects with important technology performance issues. The risk of equipment usage. Incorrect SE equipment usage may pose a risk on the performance of the equipment and results of energy saving. Mitigation: Provision of training by the supplier of the equipment usage; Frequent monitoring of the usage of the complicated equipment.

**Lack of interest of local financial institutions to be involved in SE financing.** FIs do not disburse credit lines or utilize guarantees. Mitigation: FIs pay a commitment fee to access the credit lines and interest when they draw the money down; they will also pay commitment fees on the guarantees; Provision of credit lines/guarantee facility only after preparation of a pipeline for FI. Substantial pre-program training of FIs initiated by IFC early in IFC's pre-appraisal process.

**H. EXPLAIN HOW COST-EFFECTIVENESS IS REFLECTED IN THE PROJECT DESIGN:** As indicated in the incremental cost analysis, under the most likely case scenario, at US\$1.29/ton CO<sub>2</sub> equivalent GHG abated, the Program provides a cost effective intervention to reduce the GHG emissions. In line with the GEF strategy to leverage its funding from other resources, the GEF funds of US\$5.3 million will be leveraged to US\$35.3 million , or by ratio 1:7. In the terms of total investment supported, the GEF funds will be leveraged to US\$75 million , or by ratio of 1:14.

### **PART III: INSTITUTIONAL COORDINATION AND SUPPORT**

**A. INSTITUTIONAL ARRANGEMENT:** The project will be executed by the IFC through its Advisory Services Facility for the Philippines.

**B. PROJECT IMPLEMENTATION ARRANGEMENT:** To ensure the necessary responsiveness to the FIs, project developers, ESCOs, and other local participants, and the ability to “dance with the market” as conditions change in the Philippine market, the Project will be implemented via a Philippines-based Project Management Office (PMO) located in the IFC office in Manila. The PMO will benefit from cross-fertilization of expertise with IFC’s sustainable energy team staff with experience implementing programs in Central Europe, Russia, and China.

The PMO team functions and implementation plan will be carried out by four core staff members based in Manila. In addition, a stable of consultants (managed by the PMO team) will be drawn upon to support ESCOs and FIs in developing self-sustaining sustainable energy project development businesses, conducting technical appraisals of projects, and supporting Program monitoring. It is anticipated that the bulk of the FI technical assistance will be provided through sustainable energy finance specialists co-located at the FI partner facilities. FI co-funding for these positions is expected, as is the eventual absorption of these individuals (or their successors) into the FIs’ self-funded staff. Monitoring and Evaluation (M&E) will be supported by an externally-hired independent evaluator. Program monitoring, including the establishment of baselines for each financial institution, will be the primary responsibility of the PMO team, with M&E consultant providing validation of the baseline, as well as completing the mid-term and final program evaluations.

It is anticipated that the make-up of the team will vary over time depending on the number of FIs being served and the dynamic of market development. During project appraisal IFC will explore in detail the staffing requirements and refine the implementation plan. The plan will seek to exploit the full capacity of the IFC Philippines team as well as any synergies with the parallel implementation of the IFC/GEF China Utility-Based Energy Efficiency Program (CHUEE), where program documentation, guidelines, and “program technology” will also draw from the work of IFC program implementation staff in Central Europe and Russia.


The PMO implementation team will be responsible for overseeing all the activities of the Program, and be the key point of contact with the FIs, energy service companies and local stakeholders, ensuring execution of all aspects of the project. Product structuring and pricing, as well as oversight of the financial portfolio (guarantees, etc.) will be supported by IFC investment staff with appropriate credit and deal structuring expertise, while the IFC staff will oversee the technical assistance offerings.

### **PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF:**

### **PART V: AGENCY(IES) CERTIFICATION**

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for CEO Endorsement.
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Agency Coordinator, Agency name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
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Steve Gorman, WB/GEF Coordinator		01/28/2009	Ian Crosby	84903932257	Icrosby@ifc.org
Stacy Swann, IFC/GEF Coordinator		01/28/2009			

## ANNEX A: PROJECT RESULTS FRAMEWORK

Hierarchy of Objectives	Key Performance Indicators	M&E / Data Collection Methodology	Critical Assumptions
<b>GEF Strategic Priorities:</b> CC2 – Increased access to local sources of financing for renewable energy and energy efficiency	Increase in the number of FIs (incl. partner <sup>1</sup> and non-partner) providing dedicated financing for EE projects Number of FIs stating intention to continue financing beyond the program timeframe  <b>Direct environmental benefit</b> Total CO2 emissions reduction achieved by implemented transactions (3.1 million tons)	Participating FIs will report to Program mgmt;  External evaluator will interview non-participating FIs and collect complementary data for participating FIs  Reports on energy savings from EE project developers	FIs & EE service providers will find the line of business profitable  Implementation of program activities will foster energy efficiency and lower CO2 emissions
Project Development Objective / Global Objective:	Outcome/ Impact indicators :	Project Reports:	(from Objectives to GEF Strategic Priorities)
To build a sustainable capacity in the Philippines market to develop and finance commercial transactions that use energy more efficiently and/or use new energy sources at several level.  To create commercial lending platform for EE with emphasis on the following actors  a) Financial institutions b) Project developers (ESCOs, vendors) End-users	((a,b) Number (at least 20 per FI) and value (at least \$75 mln in total) of financed EE investment initiatives enabled by the Project, incl. by FIs and other sources (b) Increase in the number (by at least 3) and size (in annual revenues from private sector projects) of partner EE project developers (b) Number of vendors relationships facilitated with FIs (c) Number of assisted end-users reported to use training materials and advice in their daily practices (at least 80%) (a) At least two employees per FI who know how to assess, structure and monitor loans to EE transactions (a) Portfolio of EE transactions has a satisfactory repayment rate (97%)	Baseline assessments of FIs, ESCOs and of other EE market players  Participating FIs' regular self-reporting to the Program as part of credit line monitoring.  Mid-term and final evaluations by external evaluator	The Program overcomes existing EE market barriers and builds a sustainable EE market capacity, thus contributing significantly to the GEF's strategic priorities and to the IFC's development mission.  The barrier we identified are indeed the principal constraints to growth in this area.  There is no major deterioration in the macro economic climate  Oil prices do not drop sharply thereby reducing the incentive for end users to adopt EE equipment
Output from each Program component:	Output Indicators <sup>2</sup> :		(from Outputs to Objective:)
(a) Participating financial institutions offer specialized financial products to finance SE	<ul style="list-style-type: none"> <li>Number of specialized financial products developed during the life</li> </ul>	The Program operational reports	FIs will finance more EE projects if they are provided with long-term capital, a risk management tool, and

<sup>1</sup> 'Partner financial institution' is a bank or leasing company which utilized IFC credit lines or GEF/IFC guarantee facility and/or received tailored technical assistance. Non-partner FIs are financial institutions attending training and receiving ad-hoc consultations, or who enter the sustainable energy finance market because they see the benefits enjoyed by their competitors..

<sup>2</sup> For some activities, more specific performance indicators with timelines for their achievement will be developed during Program appraisal.

Hierarchy of Objectives	Key Performance Indicators	M&E / Data Collection Methodology	Critical Assumptions
projects in Philippines	of the program	Participating FIs' regular self-reporting to the Program as part of credit line monitoring.  Mid-term and final evaluations by external evaluator	training. Eventually, these FIs will no longer need the Program's support to continue financing EE transactions beyond the Program's term.
(b) Participating FIs develop and implement new strategies and are able to appraise SE projects in Philippines	<ul style="list-style-type: none"> <li>Relevant employees in FIs have taken classes on assessing, structuring and monitoring loans to EE transactions</li> <li>% of participants who give positive feedback on quality and relevance of Program's assistance, materials &amp; tools</li> </ul>	<p>The Program operational reports</p> <p>Event attendance lists and feedback questionnaires</p> <p>Interviews with ESCOs and vendors assisted by the Program</p>	Through a process of 'on the job' training, FIs can learn to finance and project developers can learn how to obtain financing for EE transactions. Thanks to this training, they will remain active EE market players beyond the Program's term.
(c) Local energy product/service providers strengthen their capacity through training events and Program's guidance in implementing select projects on a pilot basis	<ul style="list-style-type: none"> <li>Number of ESCOs and vendors advised or trained (at least 30 companies)</li> <li>Number of transactions supported by the Program's TA services (at least 100)</li> <li>Feedback on quality and relevance of Program's assistance, materials &amp; tools</li> <li># of people from # of companies trained (at least 100 companies)</li> <li>Feedback on quality and relevance of Program's assistance, materials &amp; tools</li> </ul>	<p>The Program operational reports</p> <p>Event attendance lists and feedback questionnaires</p>	<p>With effective M&amp;E and dissemination, the Program can 'make the business case' for investing in EE, thus increasing demand for EE products, and strengthening the EE market.</p> <p>Macro economic conditions are such that investment in EE continues to be attractive.</p>
<b><u>Input into each Program Component:</u></b> (a) Financial instruments to FIs (b) Technical assistance to financial institutions (c) TA to vendors and ESCOs, incl. to transactions	US\$ 3.3 million for TA and operations (US\$2.3 million GEF, US\$0.8 million donor funded) US\$ 0.2 million from clients US\$3.0million for risk sharing (GEF) US\$ 27 million for risk sharing (IFC)	Program Records Program Records Program Records Program Records	The program's inputs and timeframe are sufficient to achieve its objectives.

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF)  
**STAP Review and IFC Response**

**17 March 2006**

**Comments on “Philippines Sustainable Energy Finance Program,” GEF Project Brief, March 2006**  
**IFC/GEF Project**

**William Chandler, President, Transition Energy and Adjunct Professor of International Policy, Johns Hopkins University School of Advanced International Studies**

**Scientific and Technical Soundness of the Project**

This proposed IFC/GEF program compares favorably with a handful of projects which this reviewer ranks among the best of their kind. The IFC brings an unusually well-informed, analytical, and logical set of solutions to well-documented and difficult market barriers which are impeding investment in and development of sustainable energy technologies in many countries, including the Philippines. The proposed project is sound because it is based on advanced scientific and economic knowledge and understanding, as well as substantial real-world experience.

The proposal document describes a program which this reviewer finds appealing based on the Philippine’s economic and financial needs for sustainable energy development. The proposal addresses barriers which appear to be serious and substantial. The proposed intervention has a good chance of success. The proposal is economically and financially sound, and addresses well-known problems with an approach the IFC is well-placed to address.

**Global Environmental Benefits of the Project**

This IFC/GEF proposal addresses sustainable energy development and has a reasonable chance of successfully leveraging energy efficiency investments. The energy efficiency and renewable energy efforts it would promote would reduce the environmental burden of energy use while providing a better foundation for economic growth. Energy causes some of the most severe global and local environmental pollution, and clean, efficient energy production offers an alternative to underdevelopment and pollution. This project is especially attractive because it seeks to leverage market mechanisms which can provide benefits on a continuing basis even after the IFC/GEF project money itself has been consumed.

The proposal targets a country with very low levels of energy development, high costs, and potentially rapid growth. For this reason, it could provide a success story which could be usefully replicated throughout the Pacific Rim.

**How the Project Fits Within the Context of the Goals of GEF, Its Operational Strategies, and Program Priorities**

This project will provide reproducible and institutionally sustainable benefits to help mitigate global climate change, a key mission of the GEF. It meets the incremental cost or additionality test needed for GEF intervention by addressing barriers to market development which will likely not be overcome without intervention of the type proposed. The project promises to be sustainable by motivating the private sector to

adopt a potentially profitable business model to promote energy technologies which are essential to sustainable development.

### **Replicability of the Project**

The project proposes technical assistance that is needed to overcome barriers to energy-efficiency and clean energy investment throughout the world. The techniques to be applied in this project can be replicated throughout the developing world.

### **Sustainability of the project**

The IFC proposes a market-based problem-solving approach. Only market actors in the Philippines can provide, long-term, the labor, capital, and skill to implement sustainable energy technologies. A great strength of this and similar IFC programs in Eastern Europe, China, and Russia is this market orientation. It is a model for all multilateral institutions to follow.

### **Additional General Comments**

- Electric power is an appropriate focus for this proposal because the country experiences extraordinarily high power prices and relies heavily on power as an energy carrier. And because electricity sector reform has been initiated to some degree, electric power conservation may be more likely to succeed than in some other countries.
- While this proposal reminds this reviewer of other innovative IFC/GEF programs in other nations the document itself does not make as strong a case for the proposal as it could. That is because the writing distracts from the merits of the proposed project with poor organization and ungrammatical constructions. The organization of the document is not straightforward and does not adequately describe the experience which the IFC could bring to bear on the energy situation in the Philippines. The description of the IFC's ability to leverage and integrate on-going and complementary programs is confusing. This reviewer believes that the document does, in fact, present a much-needed and attractive program, one that deserves better articulation. That is—the piece needs line-editing and restructuring. With one or two additional drafts, this proposal could be one which this reviewer could strongly endorse.

### **IFC RESPONSE:**

*IFC appreciates and agrees with the reviewer's comment. The draft reviewed by the STAP reviewer was an early stage draft which was more an aggregation of material developed during project development by the project team rather than a unified document which effectively told the story of the project's development through a process of private sector engagement and market assessment. The subsequent drafts of the document seek to provide this story, while also describing the substantial body of IFC experience in the Philippines and elsewhere which has informed the development and design of the Program. The current Project Brief also elaborates on the process IFC has gone through to work with management of parallel programs active in the Philippines which also support sustainable energy market development, in order to identify specific collaborative roles and points of cooperation in order to leverage the IFC program's impact in the market.*

### **Detailed Comments**

Note: Section number references below refer to the proposal document draft provided to the reviewer.



## Section 1.1:

The section states that “...the required investment in energy efficiency over the 10 year period 2004-2013 to be...\$1.34 billion.” This number seems too small in a country that already uses \$10-15 billion per year worth of energy and is experiencing very rapid growth. Because the number seems—and probably is—too small, it undercuts the rationale that this proposal ranks as a high priority. Perhaps more context for the number could be provided, or perhaps a different, more compelling indicator of need could be offered. (Also, the number is “suspiciously precise.” Who can reliably make two-digits analyses of such uncertain sums?)

### **IFC RESPONSE:**

*The \$1.34 billion figure (more appropriately described as \$1.3 billion) referenced in the review draft of the Project Brief comes from the Philippines Department of Energy’s Philippines Ten Year Energy Plan. It references the energy efficiency sector component of the necessary investment across the energy sector that would be necessary to balance available energy supply and demand in the Philippines economy. The DOE numbers for aggregate investment in sustainable energy – including renewables and efficiency – which is the focal point of the IFC Program, is a rather more substantial figure of US\$4.8 billion. IFC believes that, while market conditions are favorable to enable substantial investment in the sector (including high, and rising, energy prices, manageably low interest rates, and inadequate energy supplies, the needed investment will not be forthcoming without market interventions to stimulate commercial capital flows. This is the situation which inspires IFC’s interest in delivering the proposed Program in the Philippines. For its part, the Government of the Philippines is seeking to put in place the proper policy framework to enable the necessary levels of private sector investment to occur. Strategies to mitigate a repeat of the power crisis conditions which crippled the Philippine economy in the 1990s-- are the primary focus of the Philippines energy policy environment at present. The DOE target of \$1.3 billion is directly linked to the level of shortfall currently predicted. The apparent precision of the number is an artifact of that analytical prism as well.*

## Section 1.2.(i)

The text cites “rising” prices but not “high” prices. Buried elsewhere in the proposal itself is the strikingly high price of electric power in the Philippines (US\$0.16/kWh). This number could be brought forward to emphasize the pain already experienced by the consumers of the host country, and an additional strong rationale for the proposal.

### **IFC RESPONSE:**

*The reference to extraordinarily high electricity tariffs – and their role in providing a strong incentive and excellent economics for energy efficiency and alternative energy investment – is now carried forward in Section 1.2.*

The substantial problems of energy insecurity and shortages could be emphasized in this section.

The following words excerpted from the proposal cite a key barrier which the proposal says the project would address:

“A limited number of projects [*sic*] developers who, though technically competent, lack the financial and commercial acumen as well as relationships with the banking sector to structure “bankable” projects.”

This barrier is, indeed, a key one. Providing technical assistance to overcome this barrier is an important reason—a main reason—to support this proposal. This strength of the proposal could be emphasized more

than it currently is, perhaps by highlighting it in the summary.

**IFC RESPONSE:**

*As the reviewer suggests, IFC has drafted a more cogent summary which, among other improvements, now emphasizes the key barriers and the Program strategy's response. These include TA support for project developers with limited financial acumen and the key market drivers associated with the energy security and impending power shortages which provide a common focus for policy makers and market players.*

**Section 2.2.**

It would be useful to explain briefly why interest rates are so high in the Philippines (country risk?), and whether these high rates might not overwhelm the chances of the proposal's success.

The following, bulleted item appears on page 8 and illustrates a typical example of poor editing throughout the text: "Implementation of time-of-use tariffs, which hourly pricing" This reviewer knows what the author meant to write, but less-knowledgeable reviewers will have no idea what this is all about.

A set of bulleted items on page following (that is, on page 9) is not parallel in structure, and distracts the reader.

**IFC RESPONSE:**

*Interest rates in the Philippines are not extraordinarily high, nor are they at levels which, in IFC's experience in other markets, would tend to significantly temper investment in energy efficiency. The current lending rates for SME-type borrowers (non "blue chip" corporates) is presently in the range of 10-12% per annum. At current energy prices, the type of energy efficiency investment projects identified during pre-appraisal, are quite attractive and viable. IFC has corrected the writing (now in in Section 2.3) to more clearly explain this situation. Similarly, the reference to time-of-use tariffs has been clarified. Additionally, the set of bullet items has been restructured to ensure clarity.*

**Section 2.5**

Given the low energy-efficiency investment needed, at least as cited by the government in the introduction of the proposal, this reviewer wonders whether lack of government understanding of the magnitude of the problem and the opportunities for renewable energy responses should now be listed as a "barrier"?

**IFC RESPONSE:**

*The approach taken in the Program is inherently market-based. No specific government action or policy initiatives are necessary to enable IFC's partner banks to develop sustainable lending businesses focused on energy efficiency and renewable energy investment. Current energy prices are high enough to enable substantial private sector investment under current conditions. Furthermore, while the government-sponsored estimate of energy efficiency investment necessary to avoid the predicted power shortages is relatively "low" in the reviewer's assessment, it is not a trivial figure, and represents a challenging level of investment. It does not, however, represent the full level of economically viable investment which might be supported by the private sector.*

**Table on Page 12 ("Barrier/Suggested Intervention")**

This table is thoughtful—exceptional in the field, really—and reflects one of the strengths of the IFC—deep insight into and understanding of the problems being addressed.

## Section 2.8

More could be said here about the strengths of the IFC's programs in Eastern Europe and China and how IFC experience, gained from programs similar to the one proposed here, enhances the chance of success in this effort in the Philippines. While there is an appendix on this IFC Eastern European experience, the proposal is written in such a way that misses an opportunity to present a more-compelling case that this proposal should be funded.

### **IFC RESPONSE:**

*IFC has modified the text to reference the previous experience in the context of the proposed Philippines Program throughout the document.*

## Section 2.9 Complementary Energy Efficiency Initiatives in Philippines

It is very good to have this section here—it is an important aspect of the logic of the proposal. However, the “alphabet soup” character of the paragraphs in this section does not well convey the nature and logic of the programs and why and how they are or would be complementary. The paragraphs could do a better job of giving the reader a sense of how the IFC could leverage its existing assets.

### **IFC RESPONSE:**

*IFC has modified the text to better explain the process of collaboration which IFC undertook with various Philippine program managers and the specific areas of cooperation and leverage which have been jointly identified and agreed with counterpart Programs.*

## Section 3.2 Component 1 - Providing FI with tailored financial products targeted at encouraging banks to underwrite loans to SE projects

This section describes a key aspect of the proposal. It is very well-conceived, but, again, this section could benefit from an editor.

Table 3.1., in particular, is not clearly presented. The title of the table suggests that the table describes the range of specific types of technical assistance to be provided, but the items in the left-hand column, especially, are not types of assistance and their true meaning is obscure. For example, how is “Opportunities to Market Direct to End-Users” an example of an item in ‘range of technical assistance’?

### **IFC RESPONSE:**

*IFC has edited and redrafted the section, as well as Table 3.1, as suggested.*

### ***Table 4-1 – IFC Operating Relationship with FIs (an interactive process)***

This table, in contrast to Table 3.1., is clear, well-presented, and describes a specific and useful set of tasks and activities.

### **Table 5-1: Summary of Project Budget**

The proposed budget strikes this reviewer as modest and reasonable. The proposed use of GEF funds in Table 5-4 seems logical and well-targeted.

The *incremental cost analysis* summarized on page 39 (as well as the “Matrix” presented in Table 5-5) seems logical and appropriate.

## **Section 6: Sustainability and Replicability**

This section is particularly well-done. For example, the draft states:

The first intervention will come in the form of a financing facility. This facility will provide FIs with tailored financing products, such as credit lines and partial guarantees, targeted at encouraging banks to originate and underwrite loans to SE projects.

The intervention described is, in this reviewer’s opinion, exactly what is needed, based both on theory (the literature) and experience (including IFC experience). The IFC is particularly well-placed to carry out the interventions described in this section.

## **Annex 4: Lessons from HEECP, CEEF and RSEFP**

The draft contains a note which reads “to be edited and enhanced,” suggesting that the draft was sent out prematurely. This “annex” describes IFC experience that is vitally important to the success of this proposed project. *This experience really ought to be brought into the main body of the text and described and amplified for the reader.* It would be hard for any non-specialist reviewer to have sufficient understanding and appreciation of the IFC’s particular value-added in this type of project without having the experience contained in this—buried and hidden—annex.

### **IFC RESPONSE:**

*IFC has integrated the lessons learned from prior programs in the main text. The annex itself has since been edited, refined, and finalized with updated experience from the most recent IFC experiences in Russia, Central Europe, and China.*

## **Annex 6-2: Examples of Industry Specific Opportunities**

This reviewer believes that this list accurately reflects the many opportunities, but also wonders what this long laundry list needs to be included. It seems that this sort of thing is something that could be cited, illustrated with a few examples, but need not be listed in 6 or 7 pages of detail.

The same comment applies to **Annex 7, Examples from Market Research**. \Both annexes 6 and 7 are so long the reviewer is reminded of the Lewis Carroll quote, “Nothing is quite so useless as a map on a one-to-one scale.”

To repeat, this proposal is technically solid, addresses important barriers, embodies delivery mechanisms which have been successful elsewhere, and deserves to be supported. This reviewer’s criticisms have mainly been about cosmetic matters.

[original signed by]

William U. Chandler  
17 March 2006

## **Response to GEF Secretariat Comments**

### **GEF Review Sheet on Project Concept Note**

**June 12, 2003**

### **IFC Memo Response on March 24, 2006 (as part of Project Brief submission)**

#### **SECRETARIAT:**

The Secretariat asked for analysis of the need for removing access to finance barrier for renewable energy/ OP-6 type investments.

#### ***IFC RESPONSE:***

In the time since the Secretariat's comments, the GEF has adopted a new set of strategic priorities. The Program addresses explicitly CC-2: "Increased access to local sources of financing for renewable energy and energy efficiency," which establishes access to local finance as a priority which jointly focuses on energy efficiency and renewable energy. In addition, in the time since the Concept was developed, IFC has gained extensive experience working with commercial banks in 7 countries in Central Europe and Russia. (See Annex 4 of Project Brief: Lessons from HEECP, CEEF, and RSEFP.) IFC's experience working with commercial lending institutions in these countries demonstrates clearly that, from the perspective of the financial institutions, the distinction between energy efficiency and renewable energy is not relevant. Their focus is on lending money to transactions which have acceptable credit profiles. Further, the technical assistance approaches taken in developing the lending market and creating dealflow is similarly adaptable to market conditions and able to equally support either efficiency or renewables transactions.

In the Czech Republic, for example, IFC's FI partners were initially attracted to the energy efficiency project finance market by the market opportunity, their ability to move into more lucrative sectors, and the credit profile they learned to understand and manage. With experience lending for energy efficiency developed through collaboration with IFC under their belts, their subsequent attraction to renewable energy emerged as regulatory reform created a substantial pipeline of renewables transactions for which the same marketing, credit analysis, deal processing, and structuring principles and approaches were relevant. Thus, a diversified portfolio of energy efficiency and renewable energy projects has now developed in the IFC/GEF CEEF Program portfolio. This has informed IFC's approach to project development in Russia, China, and now the Philippines, where the program focus is more broadly on "sustainable energy", with the technology focus defined by market forces, rather than IFC pre-judging where the Carbon mitigation investments will emerge.

#### **SECRETARIAT:**

CEEF implementation lessons should be evaluated and incorporated into the project design.

#### ***IFC RESPONSE:***

IFC has fully integrated the lessons learned in CEEF in the Program design. These lessons are elaborated both in Annex 4 and throughout the document. The key lessons incorporated affect Program design, including operational structures, and the financial product provided to FIs. These include:

1. the Program implementation arrangements – where IFC makes use of existing field-based technical assistance facilities to implement the program (rather than establishing new stand-alone project offices as were used in CEEF);

2. the streamlining of the guarantee product to use portfolio approaches and very limited first loss exposures; This provides a very valuable product to the FIs, enables maximum leverage of the GEF resource (reducing the amount of guarantee resources needed to leverage IFC and FI finance), and allows IFC to defer credit decisions to the FI, thus reducing operation costs and transaction time for the FI;
3. the delivery of technical assistance to FIs through dedicated market specialists who are co-located in the partner bank's facilities; This more effectively integrates sustainable energy lending orientation in the bank, helps build a sustainable impact in the bank, and promotes cost-sharing with the bank.

#### **SECRETARIAT:**

Given the large number of energy efficiency projects for the region, presented by World Bank Group, the Secretariat asks WB and IFC to develop a strategic framework for the portfolio.

#### **IFC RESPONSE:**

The World Bank Group has undertaken several exercises since the time of the Concept Note acceptance which are directly responsive to this request from the Secretariat. The most prominent was a comprehensive World Bank study of the portfolio of World Bank Group energy efficiency program efforts which identified what has worked and what has not worked. Based on the results and impacts of the portfolio, the report laid out a pathway for formulating market interventions going forward which has served as a strategic planning document for the World Bank Group..

In addition, the World Bank undertook comprehensive post-program market impact evaluations of four landmark GEF programs implemented over the past 12 years: the WB/GEF Ilumex Project; the WB/GEF Jamaica DSM Project; the WB/GEF Thailand DSM Project, and the IFC/GEF Poland Efficient Lighting Project. This report also defined trends in what has worked and what has not worked. By looking at long-term sustained market impact several years after project conclusion, the study asserted a package of guidelines which inform the World Bank and IFC strategy for leveraging GEF resources to achieve sustained market impact.

IFC's comparative advantage and role is different to that of the World Bank, thus indicating a distinctly different strategic approach and focus to the sector. Information sharing between the two sister organizations will continue to inform the approaches taken by both, and we will continue to build on the cooperation that has emerged in our shared assessments of our experience to date.

#### **GEF Review Sheet on Project Brief**

**April 13, 2006**

#### **IFC Memo Response on April 18, 2006**

This memo provides IFC responses to the comments from the GEF Secretariat on the Project Brief for the Project "Philippines Sustainable Energy Finance Program". A summary table is provided below and the remainder of this document provides more detailed responses to GEF questions/comments.

#### **SUMMARY OF RESPONSES**

<b>GEF Question/Comment</b>	<b>IFC Response</b>
1. Remove statement on country eligibility and climate change	Text Corrected.
2. Need to make the case that project	Based on its experience in previous programs, IFC believes the program should be

meets OP6 requirements	positioned to support sustainable energy, and let the market determine the allocation of resources between renewable energy and energy efficiency, which is often an artificial separation. See response # 2 in this document for more details.
3. Need to provide more details on financial offerings	Based on experience with previous program, IFC is aiming to retain flexibility in the offerings to FIs as needs not only vary by FIs but also overtime. See response # 3 for more details. During appraisal IFC will refine the details of the different options.
4. Need to explain how investments are translated into energy efficiency and avoided CO2	IFC provided additional details but notes it is using same methodology already used and approved by GEF to sustainable energy financing programs in Russia and China.
5. Need to explain how delivery of program will be more efficient	Based on experience with previous programs, IFC has refined and improved its delivery mechanisms, including (i) co-locating consultants in banks to expedite on-the-job training and deal origination and closing, (ii) partially charging for TA delivered, (iii) capturing synergies with other existing efforts (e.g. existing DOE programs), and (iv) leveraging IFC existing infrastructure in the country. See more details on question # 5.
6. On how to access IFC expertise and knowledge on sustainable energy financing programs	IFC (i) is setting up a “Centre of Excellence”, which will be a web-based hub of knowledge dissemination, and (ii) has undertaken an extensive outreach effort to share its experiences with other IA and stakeholders at large through conferences, workshops and BBLs. See more details on question # 6.
7. Need for separate M&E budget and plan in compliance with GEF requirements	IFC will develop a separate budget, and similarly to its other sustainable energy financing program will ensure it is compliant with GEF M&E requirements
8. Implementation cost are reckoned to be high	IFC believes that beyond fixed costs of project implementation, which vary little by country, GEF costs are falling proportionally. For instance in CEEF, GEF-funded guarantees of \$15MM leverage \$180MM in investments. In the Philippines, \$3MM of GEF-funded guarantees are targeting \$60MM in leveraged investments.
9. On developing with the WB a strategic framework for the region/country	IFC has consulted with the WB on its program in the Philippines and found the projects to be complementary. For additional details see question # 9
10. Relationship with DOE Philippines concerning implementation arrangements	DOE and the GEF Focal Point have offered IFC the option of having DOE as a co-implementing agency. While IFC intends to work closely with DOE, it cannot delegate its fiduciary responsibility arising from its commercial relations with the local banks. Hence, in order to ensure an effective operational implementation of the project, IFC has chosen to be the sole implementing agency. Documentation on the extensive IFC consultations with DOE on this matter can be provided upon request.

## DETAILED RESPONSES

### 1. On the statement about country eligibility noted by GEF on the “Country Eligibility” session

IFC will correct the incorrect statement noted by the GEF Secretariat.

### 2. On GEF’s request that only if a reasonable case can be made that improving “access to finance” for RE opens a large market, OP6 type investments should be eligible under this project.

IFC’s proposed project design reflects lessons learned from its credit facilities in other countries. That experience clearly indicates that – from the perspective of commercial banks and project developers -- the distinction between “efficiency” and “renewables” projects is an artificial one which does not relate to how projects get financed and developed. *The project objective is to internalize a broad understanding of lending opportunities associated with clean energy, rather than to focus on specific technologies or applications.* This is consistent with the commercial realities of banking as well as the dynamic nature of energy technologies and market opportunities, which will inevitably change over time. Consequently, the

project does not try to define up front the risks and market opportunities artificially separating renewables and efficiency.

A further difficulty in attempting to make this distinction is that some renewables transactions bear closer approximation to the profile of “efficiency” deals than they do to other renewables projects. A clear example of this is a cogeneration project which utilizes biomass fuel – such as the biomass cogen projects supported by CEEF in both the agriculture and the wood products sectors. In those projects, a readily-available biomass fuel source (renewables) enabled a cogeneration plant (efficiency) to achieve superior economics. From the perspective of the project developer and the bank, the source of the fuel was little more than another variable in the project economic analysis. Their approach to the project, and the fundamental conditions in the market coupled with IFC’s TA support and risk sharing instrument, enabled the deal. The investment was not enabled by a focus on either renewables or efficiency, but rather by IFC’s collaboration with project developers and banks to develop economically-viable projects which reduce greenhouse gases.

In the case of the Philippines, IFC has met with banks who have seen both efficiency and renewables deals. In these cases, the banks don’t categorize or react to the emergent opportunities in distinct renewables/efficiency categories. Rather, the Philippines banks have sought IFC support to: a) understand the technical and market risk profiles of these deals; b) provide a risk-sharing product which enables them to build a portfolio despite a lack of experience upon which to base their credit assessments and pricing. In determining an opportunity and defining their needs they make no distinction between energy efficiency and renewable energy. Further, the policy environment in the Philippines for both renewable and energy efficiency is quite vibrant, as the government tries a combination of policies to reduce dependency on fossil-fuels and manage energy costs. While energy efficiency provides a more immediate opportunity, it is expected that the regulatory and market conditions for renewable energy in the Philippines evolve rapidly in the coming years. Hence, it would be efficient to ensure the project is positioned to support renewable projects, should the market so demand.

Finally, the market opportunities for a variety of different types of transactions emerge through a highly dynamic market. In the case of IFC’s facility in Central Europe, regulatory changes during the second year of CEEF Program operations in Hungary and the Czech Republic have driven a steady pipeline of grid-connected renewables projects which were not part of the marketing plans of the participating banks during the first year of the program life. IFC’s ability to be responsive to this newly emergent market opportunity has enabled the program to support the rapid development of an entirely new lending business line for the participating banks. A restrictive covenant which tightly defines project eligibility around a definition of “efficiency” would limit the program’s effectiveness in stimulating a sustainable business in financing renewable energy projects which generate substantial greenhouse gas benefits.

### **3. On the fact that a range of options is given concerning the project’s financial offerings, but it is not clear what activities will be undertaken by this project.**

IFC considers the inclusion of this flexibility to be an important design feature. However, more could be said about the process by which eligible options will be identified and selected.

A clear lesson learned from IFC’s prior credit facilities is that changing market conditions creates changing market needs. The financial products (eg, guarantee, credit line, performance bonus-based credit instrument) required by the market tomorrow will predictably be different than the one which the market requires today. A project which pre-determines and limits its product offering into a market over a four or



five year period is guaranteed to miss opportunities, and face either holding an irrelevant product offering or distorting the market by offering a more substantial intervention than the market requires – thus also reducing the leverage available from a more finely-tuned and market responsive product.

Another clear lesson learned from IFC's experience administering GEF credit facilities is that a tightly-defined product requires multiple program adjustments in order to embrace adaptive management and maximize program effectiveness. If the program changes require GEF approval at each interval, then the process is time-consuming, expensive, and doesn't allow the program management to be timely and responsive to commercial interests in the market, thus impairing the program's credibility and relevance to the private sector. GEF's direction to the IFC in the case of CEEF is that these program amendments should be greatly limited in the future. The only way to do so is to build greater flexibility into the program design to allow IFC to adapt the financial product offerings to the market, within the constraints of certain GEF-approved criteria related to cost-effectiveness, sustainability, and leverage.

During appraisal, IFC will provide details about the initial product offerings, based upon negotiations with banks. These negotiations cannot be initiated prior to work program inclusion. Without an acceptable level of certainty that the additionality associated with the GEF funding will be met, IFC does not have grounds to enter into good-faith negotiations with banks regarding the IFC co-financed offerings. During appraisal, IFC will also establish the parameters and criteria under which any future product offerings would be provided in response to market developments.

#### **4. On GEF's request for a more clear explanation of how investments are translated into energy savings and CO2 avoided.**

The reduction in CO2 emissions from the program has been calculated through four main steps.

Firstly, the amount of investment to be stimulated by the program has been estimated based on the preliminary market assessment carried out during project development and the discussions with financial institutions. Secondly, the total revenues needed to capital costs, operating and maintenance, and management costs have been calculated. This assumes that 100% of the costs can be covered by energy savings. Thirdly, the needed revenues are divided by the average energy prices to determine the level of energy savings required to cover project costs. This was then compared with expected savings from projects identified during the market assessment. Finally, the CO2 emissions associated with the energy savings has been calculated based on average emissions per unit of energy saved (using Philippine Government statistics).

This methodology has been used and approved by the GEF SEC for WB/IFC programs CEEF, Russia Sustainable Energy Finance Program and CHUEE.

#### **5. On the request for an explanation on the more efficient delivery model that the Philippines project will employ.**

IFC implementation efficiencies, based on past experience and program modifications, derive from several innovations:

1. Delivery of TA – energy efficiency banking specialists co-located with the participating FIs provide a locus of concentrated product development and delivery within the banks; this creates a focused effort by the banks and cost-effectively builds sustained capacity within the bank to deliver sustainable energy finance.

2. Bank co-financing of the TA delivery, including co-financing of an EE specialist co-located with participating banks, ensures that only TA which is of direct and immediate value to the banks will be undertaken; banks won't pay for TA services which aren't of value to them.
3. Performance bonuses will be piloted in the Project as a way to more highly leverage the GEF funds by making cost-sharing payments to the banks contingent upon bank delivery of project financing according to volume and quality criteria.
4. The Philippines DOE's substantial ESCO development effort presents an important synergistic effort which does not show up in the budget directly as co-financing, but which provides the program excellent leverage.
5. Based on experience with prior programs, IFC has moved away from creating specialized single-purpose offices to administer the program implementation and TA. Building on the model piloted in Russia, and further evolved in China, IFC will administer the program through its regional TA management offices (the Private Enterprise Partnership) in Manila and Davao. The administrative infrastructure, diverse expertise and TA / project management capacity in this existing facility provides a more efficient delivery channel for the program.

**6. On how one can access the information and expertise developed through IFC's multiple credit facilities to support replication**

IFC has established a multi-faceted effort to disseminate information and lessons learned from its substantial experience in the field.

1. The Centre of Excellence, administered by the CEEF team in Hungary, is the hub of information dissemination in Central Europe. In addition to providing consultations and program advice to program managers both within IFC and at other GEF implementing agencies in the region, the Centre will host a workshop in Central Europe in the fall of 2006 to focus on lessons learned with immediate relevance to earlier stage programs in the region.
2. IFC has established a substantial communications capacity which has begun to produce multiple case studies in both written and video form focusing on sustainable energy finance. These products are available on-line and target both other program managers as well as the popular press, with uptake by the press globally.
3. IFC sustainable energy finance specialists have become regular participants in global energy finance for a during the past two years, including presentations in the Netherlands, Germany, France, Austria, China, Russia, and the US, featuring the IFC credit facility experience.
4. IFC has shared its expertise and experience in sustainable energy finance facilities with other IAs and multi-lateral agencies both directly (conducting workshops at the Dev't Bank of South Africa and at the Asian Development Bank), and through the G-8 process, where IFC's leadership on sustainable energy finance has been an important part of the strategy and approach being developed in the G-8 process.
5. IFC will amend the Philippines Project to include a specific "lessons learned in sustainable energy finance" guide document product. The guideline will detail the lessons learned in other programs both to inform the Philippines team and the project partners, but to be used by other institutions seeking to replicate the IFC experience in other countries.

**7. On the need to have a separate M&E budget for the project (currently is part of the budget for consultants) and to ensure the M&E plan complies with the GEF requirements**

IFC will provide a separate M&E budget. We are also reviewing the Project Brief to ensure that the M&E plan conforms to M&E policy of minimum requirements at WP inclusion. The M&E plan represents a

highly-developed practical model for M&E of credit facilities, based on approaches developed and refined in prior IFC programs. We will review the proposed plan to ensure that all GEF requirements are met

**8. On the fact that the costs of project implementation are judged by the GEF Secretariat to be high.**

IFC would like to understand the basis for the Secretariat's assessment of the project costs. What is the basis for determining cost-effectiveness? Based on IFC's assessment of other projects implemented by other IAs, the costs to deliver this program are low and reflect continued efficiency gains.

1. GEF funds are only used for additional costs – those not fundable from other sources. IFC has structured a program which relies on substantial co-financing to support the direct costs (implementation, TA, guarantees) of the program and which leverages substantial investment.
2. The GEF funds used for guarantee/credit enhancement are leveraged in two ways: a) with direct IFC investment; b) with highly leveraged guarantee structures, including portfolio-based first-loss guarantees expected to be less than 5% of the debt leveraged.
3. The GEF funds required relative to the proportion of investment financing leveraged is quite low.
4. The GEF funds relative to the program's leverage has substantially fallen over time. For the CEEF, GEF provided \$15MM for guarantees to leverage up to \$180MM in investments, whereas in the Philippines program \$3MM in guarantees are expected to leverage \$60MM in investments.

The Secretariat's comments reference the \$.5 million allocated for performance bonuses in speaking about operating costs. In fact, the performance bonus is a form of credit enhancement whereby the bank receives the payment as an offset to marketing costs and an enhancement to risk-return based upon the bank's success in originating new loans. The bonus is used by the bank as part of the credit enhancement structure and is not an operating cost of the program.

**9. On GEF's request at pipeline entry that IFC assess lessons learned and develop a strategic framework across the WB Group for the portfolio in the region.**

IFC has described the process which it undertook in collaboration with the Bank in response to the GEF request. Please see Annex 10, where the effort undertaken to date has been described.

**10. On the issue of co-implementing the project with DOE Philippines**

IFC has held extensive consultations with DOE Philippines concerning the project. These consultations evidenced a number of opportunities for collaboration in promoting markets for sustainable energy and IFC and the DOE have agreed on cooperating on a number of specific areas, e.g. capacity building and ESCO industry development (IFC can provide at GEF's request all the communication on this matter). Due to these potential for collaboration, DOE's Secretary has not only supported the project, but also offered DOE as a potential co-implementer of the project, noting however that such co-implementation arrangements should take place only if warranted. In that same context, the GEF Focal Point for the Philippines suggested that IFC consider DOE as a potential implementation partner.

IFC reviewed the opportunity to co-implement the project with DOE, and while it intends to engage in extensive collaboration with the DOE, it found that a co-implementing arrangement would not be warranted. The main reason for such assessment is that IFC will have to, as a core component of the program, establish commercial relationships with commercial banks, including credit lines, and/or guarantees and as such IFC will have fiduciary responsibility towards the funds it approves and disburses.

This fiduciary responsibility cannot be shared with a 3<sup>rd</sup> party. Hence, for an appropriate operational implementation of the project, IFC has to be sole implementing agency.

While the GEF focal point did not request the co-implementation arrangement as a pre-condition for endorsement, IFC sees in DOE a key partner in the project and will at appraisal seek to establish specific plans for collaboration and maximize the many synergies between IFC's project and DOE's effort on sustainable energy.

## GEF Requests on Bilaterals on May 19,2006

This table indicates where changes were undertaken in the Project Brief to reflect the bilateral discussions with GEF SEC on April 19, 2006

GEF Question/Comment	Changes in Document	Doc Section
Remove statement on country eligibility and climate change	Text corrected	n/a
Need to make the case that project meets OP6 requirements	IFC explanation provided and accepted in bilaterals documented in "Annex 10 Response to GEF Secretariat Comments"	Annex 10 of Project Brief
	Provided detailed on financial products under consideration	Section 3.2 of Project Brief. Also
Need to provide more details on financial offerings	Included language on core criteria for final product selection and structuring	in Executive Summary included details on products and criteria for selection
	Included language clarifying IFC's fiduciary responsibility	
Need to explain how investments are translated into energy efficiency and avoided CO2	Included language explaining how investments are translated into energy efficiency and avoided CO2. Noted it is methodology follow that applied in previous programs and approved by the GEF	See Annex 3 ICA in Project Brief. Also included in Annex in Executive Summary
Need to explain how delivery of program will be more efficient	Included explanation of sources of increased efficiency in delivering program in the Philippines	Section 4.3 of Project Brief
On how to access IFC expertise and knowledge on sustainable energy financing programs	IFC explanation provided and accepted in bilaterals documented in "Annex 10 Response to GEF Secretariat Comments"	Annex 10 of Project Brief. Also included in Annex in Executive Summary Table 5.1 and 5.4 of Project Brief.
Need for separate M&E budget and plan in compliance with GEF requirements	Created distinct line for M&E costs in budget, allocating total costs of \$300,000 between external evaluator (\$200,000) and IFC staff costs (\$100,000)	Changes also reflected on Executive Summary
	Revised M&E Plan to follow SMART criteria and ensure compliance with GEF.	Section 8
Implementation cost are reckoned to be high	Implementation costs and GEF funding request reduced by \$700,000, representing a 23% reduction in GEF funds used for operations and TA. See Annex providing review of costs for Program	See below
On developing with the WB a strategic framework for the region/country	IFC explanation provided and accepted in bilaterals documented in "Annex 10 Response to GEF Secretariat Comments"	Annex 10 of Project Brief. Also included in Annex in Executive Summary
Relationship with DOE Philippines concerning implementation arrangements	IFC explanation provided and accepted in bilaterals documented in "Annex 10 Response to GEF Secretariat Comments"	Annex 10 of Project Brief. Also included in Annex in Executive Summary

## Assessment of Project Implementation Costs Per GEF SEC Request

**Background:** GEF SEC commented on if and how costs of implementation were falling overtime, given expected gains of efficiency in the implementation of sustainable energy financing programs.

IFC believes costs have been falling, measured in both absolute and relative terms, for the following reasons:

- Despite having similar goals and approaches to IFC/GEF programs in Russia and China, IFC/GEF implementation costs of the program in Philippines is 44% lower than the Russian program and 65% lower than the Chinese. This significant reduction in GEF-funded implementation costs reflects not only the smaller Philippines economy, but also greater leverage of IFC's existing infrastructure and efficiency in delivering the program,
- In addition, the program's ability to leverage resources has increased significantly over time. While during HEECP and CEEF, IFC/GEF provided as much as 50% guarantees to Financial Institutions, recent program in Russia, China and now the Philippines are targeting as little as 10%, and
- This ability to increasingly leverage GEF resources is, in our view, a major improvement in the program's efficiency overtime and an effective model, particularly if contrasted to other GEF-sponsored program that, for instance, required as much as 90% guarantees in China.

### Project Key Costs in Perspective (1)

			HEECP	CEEF	Russia SEF	CHUEE	Philippines SEF
GEF	Implementation	\$ MM	0.75	3	5	6.5	2.3
	Guarantees	\$ MM	4.25	15	2	10.5	3
3 <sup>rd</sup> Party Financing (Co-Financing and Leverage)		\$ MM	8.5	144-302	28-62	130	67-88
Guarantees/Loans		%	50%	50%	10%	6-10%	~ 10% (2)
3 <sup>rd</sup> Party Financing / Guarantees			2	9-20	14-31	12	22-29

(1) Source of Data: Work Program Submissions, adjusted as appropriate based on any later Program adjustments.

(2) Target

			HEECP	CEEF	Russia SEF	CHUEE	Philippines SEF
GEF	Implementation	\$ MM	0.75	3	5	6.5	2.3
	Guarantees	\$ MM	4.25	15	2	10.5	3
3 <sup>rd</sup> Party Financing (Co-Financing and Leverage)		\$ MM	8.5	144-302	28-62	130	67-88
Guarantees/Loans		%	50%	50%	10%	6-10%	~ 10% (2)
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(1) Source of Data: Work Program Submissions, adjusted as appropriate based on any later Program adjustments.

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GEF	Implementation	\$ MM	0.75	3	5	6.5	2.3
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Guarantees/Loans		%	50%	50%	10%	6-10%	~ 10% (2)
3 <sup>rd</sup> Party Financing /			2	9-20	14-31	12	22-29

Guarantees						
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- (1) Source of Data: Work Program Submissions, adjusted as appropriate based on any later Program adjustments.  
(2) Target

### **Note on Changes to Document Following Further Interaction with GEF After Bilaterals on May 19**

- Reduction in request for GEF Funding from \$6.3 MM to \$5.3MM, with related reduction in GEF allocated to credit enhancement from \$4MM to \$3MM
- Revised language to clarify that (i) performance bonus is one of the tools for credit enhancement, (ii) that IFC will allocate the \$3MM from GEF to credit enhancement between guarantees and performance bonus as necessary. For planning purposes, IFC estimates about \$0.5MM for performance bonus.

## ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT USING GEF RESOURCES

<i>Position Titles</i>	<i>\$/ person week*</i>	<i>Estimated person week**</i>	<i>Tasks to be performed</i>
<b>For Project Management</b>			
Local			
Team Assistant	500	72	Project administration
International			
Project Director	4590	8	Technical oversight and quality control
Project Manager	2605	36	Day to day project management and reporting
Justification for Travel, if any: Travel will be required to different project locations in Philippines for bank supervision as well as international travel for dissemination and coordination with IFC Management.			
<b>For Technical Assistance</b>			
Local			
Technical Expert	1175	516	Technical advice to banks, project developers and companies
Project officer	600	96	Analytical support to technical experts
Research analyst	600	142	Client relationships management
Communications Expert	1175	36	Preparation of materials for dissemination. Expert advice to banks on marketing sustainable energy finance
Team Assistants – M&E	500	120	Both staff and consultants
Project Officers – M&E	1175	60	Both staff and consultants
International			
Senior Specialist	2,605	144	Strategic advice to bank management and project developers
Technical Experts	2,605	188	Strategic advice to bank management and project developers. Monitoring and Evaluation
Project Directors – M&E	4590	12	For Monitoring and Evaluation
Justification for Travel, if any: Travel will be required for consultation with clients across Philippines and for international dissemination of results.			

\* Provide dollar rate per person weeks or months as applicable; \*\* Total person weeks/months needed to carry out the tasks.

## ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

- A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN. NO PPG USED.**
- B. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:**
- C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:**

<i>Project Preparation Activities Approved</i>	<i>Implementation Status</i>	<i>GEF Amount (\$)</i>				<i>Co- financing (\$)</i>
		<i>Amount Approved</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>	<i>Uncommitted Amount*</i>	
	(Select)					

	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
<b>Total</b>						

\* Any uncommitted amounts should be returned to the GEF Trust Fund. This is not a physical transfer of money, but achieved through reporting and netting out from disbursement request to Trustee. Please indicate expected date of refund transaction to Trustee.

#### **ANNEX E: CALENDAR OF EXPECTED REFLOWS**

Provide a calendar of expected reflows to the GEF Trust Fund or to your Agency (and/or revolving fund that will be set up)

Funds to be allocated in May/June 2009. Given a program life and project origination period of 3 years the operational life of the project will terminate at the end of May 2012. However, supervision of risk sharing facilities will continue until the expiry of the last project guarantee issued, which could in theory be May 31 2017 (this would assume last project guarantee issued on 31 May 2012 with a guarantee term of 7 years). This would mean that reflows would occur by end of December 2017.

Any residual GEF funds related to this project which are remaining with IFC will be returned to the GEF Trust Fund upon operational and financial completion of the project. Residual funds may include, but will not be limited to, reflows resulting from non-grant instruments used during the course of the project, interest on bank accounts associated with the project and any and all undisbursed funding.



**DOCUMENT OF  
THE INTERNATIONAL FINANCE CORPORATION**

**PHILIPPINES SUSTAINABLE ENERGY FINANCE  
PROGRAM**

**GEF Project Appraisal Document**

**January 2009**

# Philippines Sustainable Energy Finance Program

## GEF Project Appraisal Document

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Annex 1: Overview of Philippines Banking Sector

Annex 2: Overview of Existing Sustainable Energy Initiatives in Philippines

Annex 3: Project Design Summary (Logical Framework)

Annex 4: Project Budget for TA and Operational Costs

Annex 5: Incremental Cost Analysis

Annex 6: Lessons from the Central Europe, Russia, and China

Annex 7: Summary of market assessment for Sustainable Energy projects

Annex 8: STAP Review and IFC Response

Annex 9: Endorsement Letters

Annex 10: Response to GEF Secretariat Comments on Project Concept Document

## EXECUTIVE SUMMARY

This project was approved for GEF Work Program inclusion in August 2006. Following GEF Council Approval IFC took the decision to wait for CEO endorsement for implementation until there was demonstrated demand for the advisory services and financial products to be offered. Initial interest from local banks took some time to mature into real commitment, hence IFC has waited until now to apply for CEO endorsement. The approach taken has been for IFC itself to fund, with cost-sharing from clients, the initial intervention to provide partner FIs with the information they need to decide whether to pursue Sustainable Energy Finance as a business opportunity. IFC has been working since February 2008 with 2 banks (Metrobank and Bank of the Philippine Islands) to help assess the market and develop a pipeline of projects. Both banks are convinced of the business opportunity and wish to expand their operations in this area. To enable this it is necessary to provide broader support to market players and also to provide financial support via risk sharing facilities.

The Philippines Sustainable Energy Finance Program (PSEF or “Program”) builds on the lessons learned by IFC and other GEF agencies in mobilizing commercial investment in energy efficiency and renewable energy (“sustainable energy”) in Central Europe and Russia. The Program seeks to establish a self-sustaining project development and commercial financing market in the Philippines, able to implement energy efficiency and renewable energy projects which enable sustainable economic development and reduce greenhouse gas emissions by 3.1 million tons CO<sub>2</sub> equivalent. While the Program credit facilities would be expected to directly support US\$60 million in loans and \$75 million in total project investments, the greatest impact of the Program is expected to be the establishment of a self-sustaining market, not dependent upon subsidy and government support, which will continue to mobilize investment with economic and environmental benefits into the future. The total cost of the program will be US\$33.8 million with a GEF contribution of US\$2.3million for advisory services and US\$3million for risk sharing.

The Program adopts a range of tools developed for supporting development of commercial bank lending markets in those countries in prior GEF-funded programs, adapting them to the market conditions of the Philippines, and further evolving the model. Through extensive private sector consultations market assessment, and its extensive work in the Philippine market (both as an investor and a technical assistance provider) IFC has come to understand the key barriers which impede the rapid development of commercial sustainable energy investment market in the country. While these barriers are multiple, in general they relate to the limited awareness and understanding of the market opportunity and credit risk profiles of sustainable energy among financial institutions (FIs), and the relative lack of understanding among project developers of the FIs’ perspective on project finance. In response, IFC will couple credit enhancement tools with a comprehensive technical assistance program in order to support development of a self-sustaining commercial market for sustainable energy project investment.

The Program will also utilize an extensive menu of technical assistance and IFC's market-leading institutional experience in the sector to support the development of an enhanced capacity among project developers, engineering firms, ESCOs, and product vendors to market, develop, implement, and service projects. These efforts will be directly coordinated with and complementary to those of a variety of on-going capacity building programs on-going in the Philippines. Toward this end, IFC has collaborated with the Philippines DOE and other key actors in the market to ensure the Program's complementarity. The specific IFC focus will be on project pipeline development and deal preparation to ensure deal flow for the partner banks. A core focus of the TA program will be building sustainable energy credit capacity in the financial sector, and supporting the development of specialized financial products which would be marketed by participating FIs.

IFC will adopt lessons-learned in the delivery of the TA and credit enhancement tools to ensure responsiveness to the market, efficiency, and cost-effectiveness. As such, IFC will utilize co-located specialists to support FIs in developing new sustainable energy lending businesses and a fee-based technical assistance program which can support the increased sustainability of these GEF interventions going forward, as well as providing a template for non-GEF program replicability.

While the Program has a very practical focus, its success ultimately depends upon the interest of FIs and project developers and end-users in investing in energy efficiency and renewable energy. The foundation of capacity building efforts which preceded the Program, the highly competitive and sophisticated financial market, the very high energy prices which continue to rise and the impending Philippine power shortages create an operating environment which greatly supports Program success.

## 1. Project Development Objective

### 1.1.1. GEF Strategic Priorities

In its Energy Plan for 2007-2014<sup>1</sup>, the Philippines' Department of Energy estimates the required investment in sustainable energy over the 8 year period 2007-2014 to be US\$7.8 billion, of which as much as 90% should be financed by the private sector.<sup>2</sup> For this ambitious amount to be realized it will be necessary for: a) financial institutions to be comfortable lending funds to support this type of investment; b) suppliers of equipment must be able to market and sell energy efficient equipment; and, private companies must recognize the benefits of investing in these types of projects. The proposed Philippines Sustainable Energy Financing Program (PHILSEF or "Program") is designed to address the barriers to private sector investment and increase the flow of capital to sustainable energy (SE)<sup>3</sup> projects from Philippines financial institutions. The Program is thus aligned with the GEF strategic priority on climate change mitigation with elements that fit into Strategic Programs 1-4.

### 1.1.2. Project development objective

The Program will support the development of a sustainable commercial financing market for sustainable energy projects in the Philippines. The Program will be geared to energy efficiency, where the market drivers are particularly strong, but will be designed also to support commercial renewable energy investments, where such market opportunities emerge.

IFC's experience in previous programs is that Financial Institutions do not necessarily differentiate between renewable energy and energy efficiency projects. Rather, they respond to emerging market opportunities driven by issues such as tariff changes, regulatory change, power shortages etc. The Program, therefore, needs to be able to flag the opportunities as they arise and be flexible to market and FI demand. With the passing of the Renewable Energy Bill into law on 16 December 2008 it is anticipated that the demand for financing of renewable energy projects will grow significantly and the Program will be positioned to benefit from their influence and support that market. The Program's core strategy is to build on the existing market drivers in the Philippines market, and focus its resources on removing a few key barriers that deter the full realization of that market's potential. The core market drivers for investment in sustainable energy are:

- (i) High (\$.16/kWh and continually rising) electricity prices and the risk of power shortages within the next 3 years;

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<sup>1</sup> Philippine Energy Plan 2007-2014 p66-70, Department of Energy, Republic of Philippines

<sup>2</sup> Philippine Energy Plan 2007-2014 p66-70, Department of Energy, Republic of Philippines. The sectors included in this estimate include geothermal, hydropower, other renewable energy and energy efficiency.

<sup>3</sup> IFC uses the term Sustainable Energy as a generic term to define both energy efficiency and renewable energy projects

- (ii) Increasing interest in the public and private sector for renewable power generation as an alternative to increasingly costly oil-based power generation;
- (iii) Cost-effective opportunities given current electricity prices, and abundant renewable resource availability;
- (iv) Sophisticated and competitive banking sector seeking new areas of growth while seeking to retain good portfolio quality;
- (v) Emerging local energy service industry trying to offer end-users solutions on sustainable energy.

These drivers are creating significant interest in the market around opportunities in sustainable energy. However, despite this a relatively small number of projects are being implemented due, mainly, to the following barriers:

- (i) Availability of financing: most Financial Institutions (FIs) have no products targeting sustainable energy projects, and lack expertise in originating, assessing and financing SE projects. Hence, sustainable energy projects have to be financed primarily with sponsor's equity or end-user's cash flow. For those reasons, SE projects carry a high opportunity cost, and can become less attractive financially than other corporate projects that can be leveraged with some debt.
- (ii) Commercial strength of projects developers: while the project developers are for the most part technically competent, many do not display advanced financial and commercial acumen to scale up their business. They also lack the relationships with the banking sector to structure more sophisticated and bankable projects. Therefore, the volume of deals originated, in relation to the market potential, is small – typically 2-3 projects per year for each of the most sophisticated ESCOs.

The limited number of projects originated, and the fact that those originated have limited access to 3<sup>rd</sup> party funds, hinders the development of a market that has in fact very strong fundamentals. In this Program, the principal objective is to (i) remove these market barriers and (ii) create a sustainable commercial lending market for sustainable energy, which continues in the absence of IFC financial instruments.

## **2. Strategic Context and Project Rationale**

### **2.1.1. Country Eligibility**

The Philippines is eligible for GEF funding for this project. The Philippines ratified the United Nations Framework Convention on Climate Change (UNFCCC) in August 1994, and is designated as a non-Annex country under that Convention. It is also a party to the Kyoto Protocol, which it signed in 1998, and ratified in 2003. Funding for this project was approved by the GEF Council in 2006 and is outside the Resource Allocation Framework.

### **2.1.2. Country Drivenness (National and Sector Strategies):**

As of August 2007, the population of the Philippines was roughly 88.57 million people. The country has a GDP of US\$ 133 billion, of which 54.2% is derived from services, 31.7% is derived from industry, and the remaining 14.1% is from agriculture, fisheries and forestry. Currently, the Philippines' primary source of electricity generation is from thermal (63.9%), with geothermal and hydro contributing 18.4% and 17.5%, respectively. Renewable energy sources such as solar and wind contributed 0.1% share to the generation mix. The country is expected to experience regular rotating power shortages in the areas of Visayas and Mindanao, which is responsible for roughly 25% of the power consumption in the country. However, nationwide power shortages are expected by 2011. It is estimated that the country will require an additional US\$ 8 billion in investment in order to avoid nationwide power shortages within the next five years.

The Philippines Department of Energy (DOE) has actively engaged with IFC in the early stages of project design to structure a Program which complements and directly leverages the extensive energy efficiency and renewable energy market development strategy of the DOE. Prior and current ESCO training initiatives, energy conservation, efficient lighting and renewable energy sector development programs administered by DOE are explicit leverage points in the Program strategy with collaboration to be coordinated through DOE going forward.

In 2001, the Philippines Congress enacted the Electricity Power Industry Reform Act (EPIRA), which was intended to open the industry for greater competition and increased private sector participation. Over the last several years, the Philippine government has been promoting a policy to achieve energy independence by increasing the use of indigenous and renewable energy resources, increasing the use of alternative fuels, and enhancing energy efficiency and conservation programs.

The passage of the EPIRA has created significant changes to date in the electric power industry in the Philippines. It mandated the privatization of the National Power Corporation (NPC) and created the following institutions:

- National Transmission Company (TRANSCO);
- Power Sector Assets and Liabilities Management Corporation (PSALM);



- Energy Regulatory Commission (ERC); and
- Wholesale Electricity Spot Market (WESM).

In addition to the creation of these new entities, the Department of Energy - the agency responsible for implementing the EPIRA objectives - has also outlined the following key objectives:

- Unbundling of generation, transmission and distribution;
- Unbundling of electric power rates;
- Removal of cross subsidies;
- Mandatory reduction of emission levels across various industries;
- Implementation of time-of-use tariffs, which provide differentiated hourly pricing, thus enabling better load management;
- Change in methods for setting utility tariffs from rate-of-return to performance-based;
- Implementation of retail competition and open access;
- Privatization of NPC generating assets;
- Sale of sub-transmission assets; and
- Administration of universal charge.

In August 2005, the Philippine President issued Administrative Order No. 126 directing enhanced implementation of the Government's energy conservation program by adopting additional measures to limit the use of petroleum products, and to reduce electricity consumption by at least 10%. This Administrative Order also outlined new guidelines for the following:

- Reduction of oil consumption through the use of alternative fuels;
- Employment of efficient lighting systems;<sup>4</sup>
- Regulation of demand and consumption patterns;
- Employment of efficient and natural cooling systems;
- Maximizing power factor improvements; and
- Employment of energy audits and efficiency measures at all government agencies and public institutions.

Furthermore, it is the declared policy of the Philippine government to promote the judicious conservation and efficient utilization of energy resources through adoption of cost-effective options toward the efficient use of energy to minimize environmental impact. The Philippine government has outlined the following strategies to achieve these goals:

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<sup>4</sup> Specifically, the Order requires replacing 40-watt, 28-watt or lower fluorescent tubes with efficient fluorescent tubes, and replacing all incandescent bulbs with compact fluorescent lamps (e.g. 50-watt incandescent with 18 watt CFL)

- Aggressive promotion of energy conservation and energy efficient technology to effect higher energy savings both for the consumer and producer through information, education and communication campaigns;
- Intensify collaboration efforts with the private sector in implementing energy efficiency programs through voluntary agreements;
- Continuous implementation and expansion of the appliance and equipment energy standards and labeling;
- implementation of building energy usage standards;
- Integration of energy efficiency concepts in the procurement practices of the government;
- The provision of technical assistance in identifying, implementing and evaluating effective measures to improve energy use efficiency;
- The use of alternative fuel to reduce dependence on imported oil; and
- Periodic program monitoring and evaluation to assess the effectiveness of the energy efficiency and conservation plan.

The Biofuels Act of 2006 is expected to reduce the country's dependence on imported fuels over the long-term by mandating the graduated use of biodiesel and bioethanol nationwide. Subsequently, in May 2007, the law's Implementing Rules and Regulations (IRR) was approved. Currently, several projects in the form of infrastructure facilities and biofuels conversion plants are being planned and implemented.

The Renewable Energy Act was passed into law in December 2008. The Act aims to promote the development, utilization and commercialization of renewable energy resources such as geothermal, hydropower, wind, solar, ocean and biomass. Private sector participation will also be encouraged through the granting of fiscal and non-fiscal incentives. A National Renewable Energy Board and a Renewable Energy Trust Fund will also be established.

The Department of Energy will re-file with the 14<sup>th</sup> Congress the Energy Conservation Bill to institutionalize energy conservation and enhance the efficient use of energy in the country. The bill will also revitalize and strengthen the energy conservation programs developed such as the nationwide energy monitoring program, product labeling and energy efficiency promotion.

In addition to these strategies, President Arroyo has resumed the "Energy Conservation Movement", an informal group of representatives of the private sector that works under the Department of Energy and advises on SE issues.

There is, therefore, a strong Government-led initiative to put in place a regulatory and promotional framework to encourage investment in both renewable energy and energy efficiency which is very complementary to the proposed IFC/GEF Project. Both the regulatory changes described above and the initiatives by the Philippine government in the area of sustainable energy show strong country "drivenness" for supporting the Philippines Sustainable Energy Finance Program.

Finally, the Project has received Operational Focal Point Endorsement from the Government of the Philippines which shows consistency with national and sector strategies of the Government, a copy of which can be found in Annex 9. The Operational Focal Point in December 2008 re-confirmed their support for this project at a meeting with IFC in December 2008.

### **2.1.3. IFC/WB Country Assistance Strategies**

The Program contributes to the Philippines Country Assistance Strategy (CAS) of the World Bank and IFC by creating greater opportunities for FIs in financing investments with high growth potential and by implementing programs with high replicability in the areas of SE financing. IFC is very well suited to implement this Program as it has: (i) significant experience due to well-established financial markets and energy investment portfolios in the Philippines; (ii) a well-established Advisory services delivery infrastructure with which to administer the Program; and (iii) extensive experience in implementing SE financing programs. As mentioned IFC is already engaged in delivering support in this sector with two of the country's largest banks and in a number of other relevant areas including Rural Electrification, SPUG and PADGO – please see 'Pre-implementation activities' below for further information on this.

In order to ensure the additionality of IFC's role, we have initiated and maintained dialogue with numerous development partners, including IBRD, ADB, and a number of the bilateral donors. These discussions were used initially to identify the role we could play to augment the work already on-going. They have since been used to ensure that all are aware of our project and its goals, for example through these discussions we have supported IBRD develop its Chiller EE project such that it allows the private sector to support rather than compete with its objectives.

The World Bank Group in general and IFC in particular have made mitigating climate change a key strategic pillar. IFC's CEA region is playing a leading role in defining IFC's approach to Climate Change Mitigation (CCM). As IFC develops the role we want to play in this emerging space, it is clear that the Sustainable Energy Finance product is one of IFC's products that have gained traction around the world, showing success both in the region and within the Philippines and clearly addresses two of the priority CCM areas: Energy Efficiency and Renewable Energy. Additionally, CAS objectives for the Philippines' private sector include the establishment of initiatives to: (i) increase access to financing in renewable energy, (ii) catalyze private investment in infrastructure and (iii) improve the investment climate for private institutions which generally increase investments in the private sector.

This project enables IFC to further build on its experience and expertise as a leading catalyst in encouraging greater energy efficiency in developing economies and the use of renewable energy to displace fossil fuels, where there is a clear, robust business case for it.

#### **2.1.4. Developing the market for sustainable energy finance**

Based from the experience of IFC in working with the two biggest banks, the sectors identified to have high potential in implementing sustainable energy projects are the following:

- Commercial sector: buildings, malls, hotels, hospitals and schools.
- Industrial: cement, semi-conductors, electronics, food and processed meat/seafoods, beverage, ceramics, pharmaceuticals, personal care products, agro-industries, and pulp and paper, distribution utilities.
- Renewable energy: captive and grid-connected biomass, solar, mini-hydro and wind.

The energy efficiency opportunities include: efficient lighting, high efficiency motors, variable speed drives, compressors, chillers, building management systems, high efficiency substations and transformers, thermal energy storage, cogeneration and tri-generation. The motivation at the policy-level to promote sustainable energy is mirrored in the private sector. During its pre-appraisal process, IFC has identified a number of real and sustainable business drivers across different segments of the private sector to develop more sustainable energy projects. These drivers are discussed below.

#### **2.1.5. Business Drivers for FIs**

IFC has been working with 2 Philippines banks since February 2008 specifically to identify (i) their strategic interest in sustainable energy financing, (ii) barriers to lending for sustainable energy projects, and (iii) what kind of financial products and technical assistance would help reduce or remove those barriers to lending. IFC identified that going forward banks are focusing on identifying new areas for growth, and are seeking primarily two strategies: merger/acquisition of competitors and/or moving into higher risk segments. The Program seeks to harness the desire of FIs to move into new market segments by presenting sustainable energy projects as a large untapped market with high growth potential and a good risk profile.

During appraisal IFC identified that while some banks perceived a high commercial risk in lending to SMEs (e.g., such as ESCOs), that perception is unwarranted. One of the common threads across banks already operating in the middle and consumer market is that, despite the perception of those being riskier markets, the default levels for SME sector clients do not seem different than those at large companies within the portfolio of individual banks, although there is a big variance of NPLs across banks. The FIs interviewed point to default rates in the middle market ranging from 5% to 12% (the national NPL average is 14%).

In concrete discussions with local banks, the main drivers for their interest in the Program were:

- The strategic fit of an SE business line, given the need to find new avenues for lending,

- The risk sharing component of the program, given the concerns around asset quality. This seemed to serve well banks operating in the middle market and banks willing to enter the middle market,
- The capacity building component, as banks felt that they would need to develop new skills and have access to a “neutral-broker” to guide them in selecting projects or partners such as ESCOs, and
- Despite the high level of liquidity in the market, 2 banks did express an interest in IFC credit lines, the main attraction being the desire to match capital sources to the tenor of loans (5 to 8 years) typically required for the portfolio of sustainable energy project loans anticipated.

#### **2.1.6. Business Drivers for End-Users**

The very high price of electricity (average \$0.16/kWh), power shortages and high fuel oil prices in the Philippines provides a clear incentive to invest in sustainable energy. The market potential for certain types of application is shown in Annex 6. A number of companies interviewed during appraisal identified clear business drivers for them to consider investing in SE projects:

- *Company A* from the service sector indicated that the drivers for their interest in SE are the power shortage, the rising price of the energy (particularly the time-of-use charges, as the peak hours coincide with operating hours of the commercial buildings), and environmental regulations. Cooling accounts for 80% of their energy costs, which overall accounts for 50% of the total operating costs. Company representatives indicated that often commercial building have energy costs accounting for as much as 70% of the total operating cost.
- *Company B*, an export-oriented textile company, has a very sophisticated energy management program, trained energy managers, and an annual target of 3% in energy savings that has been consistently met or exceeded over the years. This enabled them to peg energy costs at 10% of total production costs. To avoid exposure to the Philippines’ power sector, Company B has built a power plant to meet 100% of its power needs and has displayed a strong performance record. The main driver for its energy awareness has been the need to retain the competitiveness of its products in the US and European markets, which consume 40% of its production. It considers SE projects across different areas, uses internal cash flow to finance projects that overall have 2.5 years pay-back, and suggested it could develop more projects should it have access to longer-term financing. It has also indicated that it feels the technical competency provided by the local ESCOs is good and sufficiently available for end-users.
- *Company C* is a medium size steel plant with annual turnover at US\$ 200 million. Energy consumption (60% power, 40% oil) accounts for no less than 70% of total production costs and reaches about US\$12 million/month. It is currently implementing an SE project that entails recovering heating from the furnace to feed a 3-4MW power generator.

Overall, end-users seem to be responding to the rising energy costs and the concerns surrounding power shortages. However, the level of awareness and sophistication still seems to vary substantially among even the large, energy-intensive companies.

#### **2.1.7. Business Drivers for Service/Technology Providers**

The IFC appraisal identified a substantial number of project developers across a range of segments including (i) small scale energy service companies (ESCOs), (ii) a broad range of equipment vendors and (iii) engineering companies at-large involved in the energy sector.

A key element of the Program will be to build capacity around project developers as necessary. An obvious segment will be small and medium scale energy service companies, which have high growth potential but lack certain business skills to originate, structure and finance projects. There seem to be at least 15 such firms operating in market. The largest and more structured ones indicated they undertake about 2-3 projects per year with a 10-12 permanent staff, and have annual turnovers around US\$ 1-2 million. Most of them seem “technology-driven”, promoting certain kinds of technologies (typically between 1-4), but none seem to have a structured “solutions” approach. Further, the business acumen varies significantly across these firms, with some still struggling at sales strategies targeting facility managers while others are more focused on senior management. In addition, most of these small energy services companies seem to be targeting the same type of end-user: large, cash rich companies that can finance the projects with internal cash flow and all seem to be operating only with performance-based contracts. Most of the projects ranges from US\$ 100-500 thousand, have sales cycles from 6-9 months, and paybacks threshold sought by end-user is less than 2-3 years usually with 30-40% IRRs.

To support these firms, an ESCO Association (ESCOPhil) was formed in May 2005 with 16 members. The Department of Energy had an important role in promoting the creation of ESCOPhil, which is still in its formative stage of development. While ESCOPhil is a very promising initiative, it is important to note that not all relevant ESCOs have chosen to participate and support ESCOPhil. The major problems encountered by ESCOs in the Philippines include the following: (1) no documented “ESCO success stories”; (2) “lack of confidence” on the concept of performance contracting by private sector; (3) no clear government guidelines on energy efficiency ; (4) government support needed for ESCO activities; (5) tax incentives on energy efficiency; (6) banks/financial institutions often lack experience to evaluate loans for energy efficiency projects backed by performance guarantees; and (7) lack of credit facility and inability to obtain financing. During IFC’s pre-appraisal, it identified that parts of the ESCO industry seems to have a credibility problem, with both ESCOs and banks referring to that as barrier for greater market development. This image arises from a number of poorly designed and executed projects. While apparently small in numbers, these projects seem to have gained some high visibility. Currently, several models of ESCO performance contracting could be seen in

the market. For example, a performance contract with shared savings option is being implemented between a mall and an ESCO. Even though there are a number of opportunities for ESCO service, currently there are only 2 ESCO who can provide this performance contracting. To address the credibility issue, the DOE is now implementing an ESCO accreditation system.

Based on its appraisal process, IFC found that overall the range and quality of project developers available in the Philippines provide a good infrastructure for the Program. Certain segments within project developers, such as small scale ESCOs and renewable energy developers may require some capacity building support, and the Program is designed to provide that as appropriate.

#### **2.1.8. Barriers preventing investment in Sustainable Energy in Philippines**

Despite the strong drivers in the public and private sector to foster sustainable energy projects, IFC has observed that the development of this market to date has been slow. IFC has undertaken a thorough review of the market conditions to understand the impediments to the development of this market and the role IFC could play to help unleash the potential in the Philippines market for sustainable energy. This review included extensive desk research on the market and regulatory conditions in the Philippines for SE, meetings with local banks, energy service companies, government agencies, end-users and other local stakeholders in order to gain a comprehensive understanding of the core business issues driving the market, and how debt instruments and technical assistance might best catalyze a substantial increase in the business. These barriers were further validated by IFC during its current engagement with 2 commercial banks during the pre-implementation stage. Following this extensive pre-appraisal and pre-implementation work, IFC has identified the following barriers to investment in sustainable energy projects:

##### *Barriers for Financial Institutions*

**Limited awareness in the banking sector about the real potential of the Sustainable Energy segment** – A number of banks interviewed demonstrated an understanding at the conceptual level of the attractiveness of financing sustainable energy projects. However, they did not know how to penetrate the market and were looking for assistance to develop a lending strategy and expertise to evaluate projects.

**Banks' lack of experience in evaluating SE projects** – Banks are not yet comfortable that they have the *skills, process and methods* to evaluate the different types of sustainable energy project. They need capacity building, and above all, transaction experience to be assured that they can understand the technological, performance and operational risks, as well as the cash flow profile associated with sustainable energy projects.

**Banks' high level of distressed assets leads to strong risk aversion and limits financing to SE** – many financial institutions are highly liquid and would like to expand

their lending activities into untapped market segments. However, given its current high level of distressed assets, the banking sector is very cautious about expanding into sectors where it has little experience and does not understand the risk profile.

**Lending policies that require high collaterals raises opportunity costs and risks** – a further consequence of high levels of non-performing loans is that banks require high collaterals for companies/projects with a higher credit risk profile. With many SE projects, the assets have a poor secondary market value or cannot be easily removed from site, and so the assets are rated as having a low collateral value and need to be secured in other ways. The provision of additional security raises the opportunity cost and financial risk of borrowing for SE projects.

#### *Barriers for service/technology providers*

**Companies promoting and executing SE projects display underdeveloped marketing and business development skills** – ESCOs indicated that the overall level of sophistication in marketing and business development among most companies executing SE projects is low, thus reducing the volume of deal origination. Most firms are focused on certain technologies as opposed to offering broader solutions, and, with some exceptions, few seemed to have developed a clear strategy. The sales process is often not institutionalized, and is typically carried out by the CEO and/or their senior associates. Further, few displayed institutional presentations conveying the company's experience, solutions, etc.

**Perceived lack of competence in certain companies delivering SE services may be increasing perceived risk of SE project** – There are issues surrounding the perceived competence of the companies delivering SE services: many end-users are resistant to project proposals because they feel that either the technology or the project developer is unreliable.

**Lack of equity limits range of product offerings by ESCOs, and reduced value of performance guarantee.** Almost all of the ESCOs are undercapitalized for supporting a performance contracting or vendor financing business model.

#### *Barrier for End-Users*

**Slow learning curve for end-users** – While the recent increases in the power tariffs have brought attention to energy costs and energy efficiency, end-users have not developed, to date, a culture or experience in energy management. Before a company makes an investment it needs to travel along an awareness continuum: at first they are ignorant of the opportunity, at the end they are convinced that they must make the investment. In the Philippines most consumers are aware of the problem and are starting to research different investment options, but support is needed to help them make the right choice and to commit to invest.



**Limited availability of financing beyond 5 years** –Some end-users that have access to unsecured financing noted that should longer-term financing be more available, they would consider retaining loans for more SE projects. A number of companies, particularly those in energy intensive industries, have captured many of the “low hanging fruit” project opportunities with shorter paybacks, and are now willing to invest in projects that may require longer repayment periods.

Table 2-1 summarizes these barriers and the proposed intervention to be delivered by the IFC/GEF Program.

*Table 2-1: Barrier and recommended interventions*

<b>Barrier</b>	<b>Suggested Intervention</b>
<i>Financial Institutions</i>	
Limited awareness in the banking sector about the real potential of Sustainable Energy segment	Working with banks one-on-one to develop lending strategy.
Banks’ lack of experience in evaluating SE projects	Embedding technical advisers within the banks
Banks’ high level of distressed assets leads to strong risk aversion and limits financing to SE	Guarantee instrument to encourage FIs into this market segment. Technical assistance to help assess project risk
Lending policies that require high collaterals raises opportunity costs and risks	Guarantee instrument to encourage FIs into this market segment. Training of FIs to recognize and accept alternative security features such as: building a loss reserve from energy savings, accepting that energy savings can entirely service loan repayments, recognizing the “essential service” nature of the energy-related asset.
<i>Delivery of SE Services</i>	
Companies promoting and executing SE projects display underdeveloped marketing and business development skills	Capacity building for project developers
Perceived lack of competence of companies delivering SE services may be increasing perceived risk of SE project	Capacity building for project developers
Lack of equity by ESCOs.	TA support to ESCOs to assist equity-raising. Also, credit enhancement tools provided through FIs.
<i>End-User</i>	
Slow learning curve for end-users	Provide objective information on costs/benefits of investments. Build capacity to assist end users evaluate different investment options

Limited availability of financing beyond 5 years	Provision of guarantees to the FIs. Provision of credit lines with extended tenors
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### **2.1.9. Building on Lessons from other IFC/GEF Sustainable Energy Financing Programs**

The lessons from IFC's experience in the Hungary Energy Efficiency Co-financing program (HEECP) and its successors, the Commercialising Energy Efficiency Finance program (CEEFP - operating in Czech Republic, Slovakia, Estonia, Lithuania and Latvia), the Russia Sustainable Energy Finance Program (RSEFP) and the China Utility Based Energy Efficiency finance program (CHUEE) are documented in Annex 4. The two key lessons that are important to stress here are:

*Integration of Technical Assistance and an IFC financial product leads to sustained market impact.*

The level and type of technical assistance that IFC delivers alongside its financial products varies from market to market. For instance, in Czech Republic where there has been strong government support for sustainable energy and extensive EU donor funding for market development activities, IFC's TA component has focussed very much on "on-the-job" coaching for bank investment officers. This is delivered in two ways: firstly, active discussions with investment staff during the project origination supported by training events for branch managers; secondly, through IFC's process of reviewing guarantee applications IFC has been able to influence the design of security packages for specific types of asset e.g. small scale hydro projects with these recommendations clearly following through into the next guarantee requests presented.

*Financial markets are very dynamic and the financial product needs to be very flexible*  
Another key lesson is that financial markets develop very quickly, and different financial institutions may have different product needs. IFC's experience in all its sustainable energy financing programs is that different FIs tend to focus on different market segments, with different financing barriers. For instance, in Hungary, IFC's intervention in the housing market grew very rapidly on the introduction of a portfolio based product with a small first loss guarantee backed up by a pari-passu guarantee. The portfolio for medium sized co-generation projects grew on the back of an FI using a transaction based guarantee to substitute for project equity. In China, an approach to risk sharing where IFC shares both the first and second losses with the partner FI has proven particularly effective. In the Philippines, we have taken these lessons on board and we propose a much more flexible approach where we are able to match different financial instruments to the needs of specific financial institutions/market segments. The range of instruments we currently envisage is described in more detail in Section 3.

#### **2.1.10. Consultation, Coordination and Collaboration**

Further to reviewing its own experience in other countries, IFC also undertook a diligent review of a number of sustainable energy initiatives currently underway in the Philippines. The goal of this review was to understand the focus of other initiatives and the remaining gaps in the market that could be addressed by an IFC/GEF initiative. IFC entered into discussions with program managers at DOE (and their implementation partners), the UNDP/GEF CBRED and UNDP/GEF PELMATP programs, as well as the World Bank/GEF renewable energy program targeting electric coops, to identify areas of cooperation and collaboration. IFC's complementary role in each of these initiatives, relates to the commercial finance dimension which is so critical to achieving a sustained impact. A selected list of the other initiatives currently underway is presented in Annex 2.

#### **2.1.11. Pre-implementation Activities**

This project was approved for GEF Work Program inclusion in August 2006. Funding approved was a total of US\$ 5.3 million of which \$2m was ear-marked for advisory related work and program operations, \$300,000 for monitoring and evaluation, and \$3m for financial product support. Following GEF Council Approval IFC took the decision to wait for CEO endorsement for implementation until there was demonstrated demand for the advisory services and financial products to be offered. Initial interest from local banks took some time to mature into real commitment, hence IFC has waited until now to apply for CEO endorsement. The approach taken has been for IFC itself to fund, with cost-sharing from clients, the initial intervention to provide partner FIs with the information they need to decide whether to pursue Sustainable Energy Finance as a business opportunity. IFC has been working since February 2008 with 2 banks (Metrobank and Bank of the Philippine Islands) to help assess the market and develop a pipeline of projects. Both banks are convinced of the business opportunity and wish to expand their operations in this area. To enable this it is necessary to provide broader support to market players and also to provide financial support via risk sharing facilities.

### 3. Project Description

The Philippines Sustainable Energy Financing Program ('Phils SEF' or the 'Program') supports the creation of a commercial financing market for Sustainable Energy ('SE') projects in the Philippines. This assists the Philippines in improving energy security, economic productivity, and promoting private enterprise in the energy sector. GEF Phils SEF covers the promotion of both Energy Efficiency ('EE') and Renewable Energy ('RE') projects. It will focus on providing three to four local FIs with the support necessary to develop their own portfolio of SE projects and on ensuring greater market awareness for the business case for sustainable energy projects.

IFC's approach comprises:

- a) a combination of advisory services with investment products,
- b) providing strategic advice to financial institutions on product development and marketing to build profitable portfolios of sustainable energy projects with FIs contributing significantly to the costs of the advice provided,
- c) market development to grow the numbers of projects and project proponents that will require access to local financial markets,
- d) advocacy, market awareness raising and, where appropriate, advice to Government to develop or improve the regulatory regime to create the conditions for greater private sector participation

The investment products are described in Section 5. The three year program of advisory activities is detailed below:

#### 3.1.1. Working with Financial Institutions

While a number of commercial sustainable energy technologies in the Philippines are now cost-effective, many are not widely available nor understood. The Philippines is in an interesting position for a developing country, where the cost of energy has been consistently among the highest three in the region. This allows the Philippines to establish business models for sustainable energy that are not economically feasible in other countries, providing the country with the potential to play a cutting-edge role in Sustainable Energy and its financing. In addition to its current partners, IFC has been approached by other FIs to support them in developing their approach to sustainable energy finance. IFC expects to engage with 3-4 FIs to work in the various different areas of the Renewable Energy and Energy Efficiency areas. By accessing GEF funds, the program will have the capacity to provide the necessary advisory and financial products to appropriate FI partners. Further to this, current partner FIs have expressed interest in developing their SEF programs into new areas, for example: Renewable Energy, Water Distribution, Energy Efficiency and co-generation in the agro-industrial sector.

Based on current engagements and client needs, IFC will undertake the following activities:

- a) Support in market identification, such as: detailed research and providing technical support to profile target segments, identify potential borrowers, profile projects, and define risks. IFC has already collated some significant information on various segments pertinent to FIs' areas of interest.
- b) Support in deal origination, such as: assisting in the identification of sources of deals in the market (such as energy service companies (ESCOs), equipment vendors, end-users, utilities, etc.) and assisting in product development and promotion. In addition to ensuring a sustainable deal flow in the market, where required the program will also engage end-users, equipment vendors, and energy service companies to develop the necessary awareness and capacity to expand the number and quality of sustainable energy deals originated. A key lesson from prior programs, particularly CHUEE and RSEF, is the important role building project pipelines plays in encouraging full commitment from FI partners to invest in the program and mobilize internal resources.
- c) Support in capacity building, such as: training deal origination teams. In the Philippines, this will include cost-sharing a full time specialized staff to provide on-the-job training to the FI teams.
- d) Leveraging best practice contract templates (such as energy performance contracting) from similar markets to facilitate development of mainstream energy efficiency projects
- e) Development and dissemination of software tools to evaluate energy efficiency projects
- f) Capacity building in the areas of project development, evaluation and financial packaging for project developers and end-users
- g) Market recognition: in a number of market niches, market awareness of the various business cases is insufficient. As in earlier SEF programs, dissemination of relevant information, providing venues for discussion and learning will play an important role in building awareness and demand. IFC will encourage partner FIs to invest in this activity as a way to raising profile and building healthy pipelines.

IFC will demand that FIs pay at least 50% of the direct costs associated with delivering the advisory service. This approach has already been successfully tested in Philippines with Metrobank and BPI, as well as in Russia.

### **3.1.2. Working with Service and Technology providers**

Brokering partnerships between financial institutions and project developers is an integral and essential component of IFC's approach to sustainable energy finance. Based on the assessment of the Philippines market the following areas will be addressed:

#### **a) Renewable energy**

There is great potential for renewable energy in the Philippines, both in terms of resources and national priorities. Both energy independence and energy efficiency are

covered under President Gloria Macapagal-Arroyo's Five-Point Reform Package. In terms of current usage, renewable energy sources account for no less than 40% of the total primary energy mix (due to the nation's abundant hydro and geo-thermal resources) and government is committed to aggressively explore and develop renewable energy potential such as biomass, solar, wind and ocean resources. Consequently, activities in renewable energy, along with natural gas, are classified as national investment priorities. Specifically, the DOE has set forth a goal of 60% self-sufficiency level in 2010, and has tasked itself to aggressively develop Renewable Energy Sources (RES) as one of the means to achieve this.

According to the DOE's Renewable Energy Policy Framework, the Philippines have an estimated untapped hydro potential of 13,097 MW and a total wind potential of about 7,404 MW. In 2004, it was estimated that the country's agriculture sector could reach 327.7 Million Barrels of Fuel Oil Equivalent ('MBFOE') by 2013. Despite this exciting RE potential, several significant obstacles to its realisation exist. The risks related to fuel/feedstock supply are still considerable, especially with regard to biomass and wind. There are no standard terms for RES supply contracts. In addition, there are serious obstacles related to financing, in particular for smaller projects, but also related to the often tedious and opaque procedures for obtaining the relevant permits and consents.

IFC is currently working with rural electricity co-operatives to improve management practices. In SEF, IFC will build upon these existing relationships, and also the work done to assess potential for replicating the PADGO (Portfolio Approaches to Distributed Generation, GEF project ID 550586 being piloted by OFC in Sri Lanka) model can leverage its experience in developing and financing RE projects, the ongoing work in SPUG (Small Power Utility Group), PADGO and the Rural Electrification Program to avoid duplication and create demonstration cases for successful RE projects for off-grid areas. Specifically, we intend to leverage the work we are undertaking with PADGO to identify the major opportunities and barriers to realising the country's renewable energy potential. PADGO work is on-going and is expected to be finished Q2 2009. We would also look to build on the work that we have undertaken under the current SEF program and the work we have been doing with Electric Cooperatives to improve their efficiency in distributing power. Specific activities will be:

- (i) Leveraging best practice contract templates from similar markets to facilitate development of RE projects.
- (ii) Supporting the relevant government agencies properly map out and streamline the regulatory requirements needed to obtain the necessary RE permits and consents.
- (iii) Working with local private FIs to build capacity and increased recognition of the financing opportunities for RE and ability to finance them.
- (iv) Capacity building in the areas of project development, evaluation and financial packaging for project developers and end-users.
- (v) Develop a database and facilitate linkage between potential service and equipment suppliers, project developers and end-users, and local private FIs.
- (vi) Ensure replication of IFC's aggregation work with ECs in Mindanao to both the Visayas and Luzon.

- (vii) Develop successful cases of renewable energy generation capacity with privatised SPUG power providers.

b) Engagement in the development of CDM market

The country's development of the Carbon Development Market (CDM) has lagged in comparison to its neighbors. Currently, some development partners (ADB in particular) are involved in activities such as capacity building, development of CDM funds and fund management. However, given IFC's strong commitment to Climate Change Mitigation and its leading role in financial markets development, this is an area in which we can play a meaningful catalytic role. With their proportionally higher development costs, small scale projects need to be aggregated. The lack of aggregating agents is a key constraint to the continued healthy development of CDM in this country and others. Large local FIs have the potential to fill this gap. As such, IFC's main role will be to help the local FIs develop their expertise in developing a niche CDM product. This will focus on the provision of services necessary for the registration and issuance of CERs to its clients; bundling of CDM projects for its clients with small projects that would benefit in shared transaction cost; and brokering for the sale of CERs for its clients. We are in the process of brokering a relationship between one of IFC's current FI partners, BPI, with a local company that is developing the local CER market. BPI, with its extensive network of branches and clients throughout the country is in an excellent position to play the role of an aggregator of potential projects in this space.

Further areas of potential engagement are the following: capacity building for project developers and facility owners; bundling of eligible projects; development of databases such as those providing services, resources and technologies; market-based mechanisms applicable in the market; market awareness; streamlining and simplification of registration and validation procedures.

c) Energy Efficiency and FI engagement in Water Management

An area of similar complexity and inefficiencies to rural electricity distribution, with similar implications for the local environment is that of water distribution and treatment. The Philippines currently has a discouraging array of service providers in this sector – WBG's PPIAF estimates about 5,000. Of these, approximately 580 are water districts, and of these only 80 are responsible for the treatment and distribution of water to more than 5,000 household connections. Over 85% of the country's water supply is used by the agricultural sector, with as many as 20% of Filipinos unable to access water from formal sources, 10% off the 2010 goal the Government has set itself. This is despite the fact that water supply is in fact abundant as distribution is inadequate. Lack of infrastructure is a key impediment to the sustainable allocation of water. Regulations need to be tightened and more strictly implemented; inefficient economic incentives mean tremendous amounts of water are wasted with an associated waste of electricity for unnecessary pumping; another key constraint is the lack of an appropriate institutional framework to address issues of development and management. At last count, there were over 30 government agencies and departments separately dealing with various aspects of water supply and management.

Two FIs have approached the IFC with an interest in lending to this sector. The following issues will be addressed:

- (i) Developing working models for private sector financing of water management/distribution projects in collaboration with CIA and IBRD.
- (ii) Leveraging best practice contract templates from similar markets to facilitate project development.
- (iii) Working with local private FIs to build capacity and increase recognition of the financing opportunities and their ability to finance them.
- (iv) Capacity building in the areas of project development, evaluation and financial packaging for project developers and end-users.
- (v) Develop successful cases for replication and dissemination.

### **3.1.3. Market enabling environment**

To create a sustainable market for SE finance it is essential to work on market enabling activities in parallel with working directly with FIs, end-users and service providers. The following activities will be carried out:

#### *Convening role for regulatory improvement*

This program will support the National Government as it implements national energy efficiency, renewable energy and climate change mitigation campaigns. To date, IFC's current program was focused intentionally on the first two partner FIs, with interventions that were designed to develop pipelines and internal capacity. GEF support is required to work at a macro-level to ensure that regulations that would support the market for sustainable energy finance are developed and implemented. This is particularly relevant now that the Renewable Energy Bill has been approved by both the Senate and Congress. IFC has been approached by a broad coalition of private sector participants to play a non-partisan role in convening relevant stakeholders and supporting the development of sound, practical implementing rules and regulations to ensure the Bill is effectively implemented.

There is wide scope for IFC to play both a convening and catalytic role in the sustainable energy sector. With climate change as one of the WBG's strategic pillars, IFC's significant exposure in the infrastructure sector, existing transaction advisory mandate to attract private capital in off-grid areas (where the potential for renewable energy use is large), and ongoing advisory programs on rural electrification and sustainable energy finance, IFC is in a strong position to shape the regulatory framework for sustainable energy in the Philippines.

IFC can anchor its engagement in the regulatory area on fostering Public-Private Dialogue, through the Infrastructure sub-working group under the Growth and Investment Climate Working Group of the Philippines Development Forum. This leverages and strengthens the current PPD program of IFC's Advisory Services in the



Philippines Energy Efficiency. IFC will also continue to collaborate with both IBRD and ADB and other relevant development partners to ensure resources are properly leveraged to reach common goals.

#### *Market Recognition*

The need to remove barriers to sustainable energy financing in the Philippines remains. Reducing perceived risks in the implementation of sustainable energy programs, monitoring project successes and disseminating information in a targeted and focused manner will encourage more widespread adoption of sustainable energy practices in the country. By leveraging GEF resources, IFC will play a more proactive role in engaging the wider community in raising awareness of the business case behind sustainable energy finance. IFC will develop a communications strategy that will provide accurate information, technical information and assistance, financing advisory and policy facilitation/advice and developing public awareness through dissemination of pertinent information. It will support the promotion of the Department of Energy's sustainable energy policies and complement the existing activities of government, development agencies and the private sector in the sustainable energy field. It will also work closely with development partners (e.g. IBRD, ADB, USAID and others, with whom discussions have been on-going) to coordinate our efforts in this area. The major activities will be designed to:

- (i) Lead the awareness-raising campaign on the business case for SE projects through documentation of success stories, workshops, seminars, study tours to learn the experience and lessons within and outside the Philippines. (IFC has already initiated a trip from one of our successful SEF FI partners from central Europe and the seminars that were held were well attended and received).
- (ii) Provide information and create a network-based database on sustainable energy technologies, resource potential and distribution, project sponsors, equipment suppliers, government requirements and permit requirements to potential investors. This would be done in collaboration with a body such as the DOE, with a clear plan and schedule for local ownership.
- (iii) Forge partnerships among the relevant government agencies, development partners and private sector players to implement advocacy programs and facilitate knowledge sharing. Active participation in conferences, fora, symposia, seminars and other events relevant to the Program. Other media for promotion/advertising, which will be explored, are publications in business magazines, newspapers, and other media. Production of a regular newsletter for the Program could be considered.

## 4. Stakeholder Participation and Implementation Arrangements

### 4.1.1. Stakeholder Participation

IFC has engaged in extensive consultations with local stakeholders. The Program has emerged as a direct response to the needs and interests of Philippine private sector actors. IFC's local investment, advisory, and technical assistance operations provide direct links into the Philippine private and public sectors – links which will directly support and inform Program Implementation. Local stakeholder participation in the Program will be formalized through a Program Advisory Committee which will include representatives from project developers, equipment vendors' industry associations, government civil society, and complementary programs' management teams. The list below indicates a number of likely Program partners among FIs as well as other stakeholders. This list is by no means exhaustive and simply serves to illustrate the profile of select interested parties. Relevant partners will be added as and when they are identified.

### 4.1.2. Project Developers

*Project developers:* broadly defined as energy services companies (ESCOs) which market energy efficiency and renewable energy services and equipment through a wide array of business delivery models – represent the primary vehicle (along with financial institutions) through which the Program will be delivered. During appraisal, IFC met with more than a dozen ESCOs, engineering firms, and product vendors to understand their businesses, the market dynamics and the barriers they face in growing their businesses. Particular attention was paid to the firms financing methods, and those of their clients. The Program design directly reflects the needs of project developers, and the market opportunities they face.

During pre-implementation activities, IFC conducted consultations with project developers, engineering firms, and vendors of EE/RE equipment and services. During implementation, Program staff will provide direct support to these firms, including technical assistance in deal preparations and brokering multi-project and working capital financing arrangements with commercial financial institutions.

### 4.1.3. Government Ministries

*Department of Energy:* The Philippine Department of Energy (DoE), which is responsible for developing and implementing Philippine Government energy efficiency and renewable energy policy and programs, is the primary government agency counterpart for the Program. IFC engaged DoE in extensive consultations in the preparations of the Program to ensure consistency with the Philippine country strategy for sustainable energy market development. During implementation, DoE will be a key member of the program's advisory committee.

#### **4.1.3 Multilateral agencies (e.g., World Bank, ADB, etc.)**

The World Bank and ADB are currently implementing energy efficiency and renewable energy programs that are catered to specific market segments. IFC engaged these organizations in extensive dialogues to ensure complementarity among each of the programs being implemented by the organizations during the implementation.

#### **4.1.4. Financial Institutions**

Discussions have been held to date with a number of financial institutions. A knowledge-sharing seminar on sustainable energy financing to the members of the Bankers Association of the Philippines and the Chambers of Thrift Banks was held last July 02, 2008. Further discussions will be held during project appraisal when IFC will enter into a competitive process to identify the best match between FI capacity and comparative advantage and the sustainable energy market segments where the market is poised to develop. The process is intended to focus the FIs on the market opportunity and mobilize bank management to commit resources to the Program. Most banks expressed interest in the Program, and have requested to remain in the pool of banks being considered for partnership with IFC in the development of this market. The banks represent a range of sectoral strengths, consistent with IFC's strategy (and experience in other markets) of working with multiple banks operating in a diverse range of sectors, offering very specific financial products to address niche markets.

#### **4.1.5. Advisory Committee**

A proven technique IFC has employed in multiple private sector-focused market development programs in the past to secure stakeholder dialogue is to organize an Advisory Committee consisting of representatives from relevant ministries, government agencies, NGOs, private companies, utilities, and end-user associations with interest in SE project development and finance. The main role of the Advisory Committee is to provide advice and feedback on the Program design and support implementation during program operations with policy support and by facilitating key partnerships across the market. The Advisory Committee also provides a forum for the advancement of SE finance. The Advisory Committee members typically play important roles in promoting and sustaining a favorable policy environment for SE investments.

The Advisory Committee will be convened semiannually to advise the Program on operational issues and promote its coordination with other national initiatives and policies. The first Advisory Committee meeting will be organized after launching the Program. The purpose of the first meeting will be to announce that the Program has started its operation, present Program strategies for the first year and discuss the implementation plan. Potential interested FIs and other partners would be invited to the meeting as observers.

The purpose and the agenda of the following meetings will be to present Program activities of previous year and strategy for the upcoming year. The Committee members may provide comments and advise the Program implementation team on specific questions, and might provide information on policy, legal and government strategies

related to the SE sector. The Advisory Committee can also serve as a lobbying body to support Program implementation by addressing critical SE business related policy and strategy issues at the government level. Beyond the semi-annual Advisory Committee meetings, Program management and implementation team may contact the Committee members to seek advice on issues raised during day to day Program operation.

The Advisory Committee is also a potential forum to handle possible objections and questions coming on environmental and social issues related to sub-projects under the Program. These possible questions may come from the government or NGOs. In specific cases, the Committee may issue official declarations on these issues to the public.

#### **4.1.6. Implementation Arrangements**

To ensure the necessary responsiveness to the FIs, project developers, ESCOs, and other local participants, and the ability to “dance with the market” as conditions change in the Philippine market, the Project will be implemented via a Philippines-based Project Management Office (PMO) located in the IFC office in Manila. The PMO will benefit from cross-fertilization of expertise with IFC’s sustainable energy team staff with experience implementing programs in Central Europe, Russia, and China.

The PMO team functions and implementation plan will be carried out by four core staff members based in Manila. In addition, a stable of consultants (managed by the PMO team) will be drawn upon to support ESCOs and FIs in developing self-sustaining sustainable energy project development businesses, conducting technical appraisals of projects, and supporting Program monitoring. It is anticipated that the bulk of the FI technical assistance will be provided through sustainable energy finance specialists co-located at the FI partner facilities. FI co-funding for these positions is expected, as is the eventual absorption of these individuals (or their successors) into the FIs’ self-funded staff. Monitoring and Evaluation (M&E) will be supported by an externally-hired independent evaluator. Program monitoring, including the establishment of baselines for each financial institution, will be the primary responsibility of the PMO team, with M&E consultant providing validation of the baseline, as well as completing the mid-term and final program evaluations.

It is anticipated that the make-up of the team will vary over time depending on the number of FIs being served and the dynamic of market development. During project appraisal IFC will explore in detail the staffing requirements and refine the implementation plan. The plan will seek to exploit the full capacity of the IFC Philippines team as well as any synergies with the parallel implementation of the IFC/GEF China Utility-Based Energy Efficiency Program (CHUEE), where program documentation, guidelines, and “program technology” will also draw from the work of IFC program implementation staff in Central Europe and Russia.

The PMO implementation team will be responsible for overseeing all the activities of the Program, and be the key point of contact with the FIs, energy service companies and

local stakeholders, ensuring execution of all aspects of the project. Product structuring and pricing, as well as oversight of the financial portfolio (guarantees, etc.) will be supported by IFC investment staff with appropriate credit and deal structuring expertise, while the IFC staff will oversee the technical assistance offerings.

*Table 4-1 – IFC Operating Relationship with FIs (an interactive process)*

Tasks	Activities
Step 1: Develop/refine FI strategy for using the Investment Facility	Implementation team (including IFC investment staff) works with FI to understand their current business strategy, staff/skill set, targets for business growth, objectives for participation in Program
Step 2: Identify pipeline	Implementation team reviews FI portfolio to identify potential clients in energy intensive sectors, project pipeline to investigate investments that could be SE enhanced, vendors with interest in special product development, etc
Step 3: Negotiate credit lines, guarantees and performance bonus	IFC Financial Markets team negotiates scope and terms of credit lines, portfolio guarantees and performance bonus based on pipeline of SE projects identified, and FI needs, given target sector
Step 4: Disburse credit line/Initiate guarantee and/or performance bonus program	Implementation team (including IFC investment staff) and TA providers engage with project developers and FIs to structure deals. FI draws down credit line in tranches for disbursement to deals, and begins building loan portfolio
Step 5: Monitor portfolio	FI monitors loan performance and reports to IFC. It notifies IFC as and when a guarantee and/or bonus payout is triggered. The payments are supervised by the IFC/GEF Implementation Team during the lifetime of the program. At the close of the GEF funded program (during which time new transaction obligations can be originated), the responsibility for supervising the guarantees passes to IFC's Financial Markets portfolio team (based in the Philippines), who simultaneously monitor the credit line performance.
Return to step 1	Based on loan performance and growth opportunities FI refines business targets

#### **4.1.7. IFC's comparative advantage**

IFC is particularly well suited to implement this Program, as it has (i) significant experience and a well-established financial markets and sustainable energy investment portfolio in the Philippines, (ii) well-established technical assistance delivery infrastructure with which to administer the Program in the Philippines; and (iii) extensive experience in implementing sustainable energy financing programs – a field in which it is the global leader.

The deepening of the financial sector – enabling the provision of commercial financing for a broader sweep of the Philippines economy, -- and promotion of investments with sound environmental benefits are integral parts of IFC's Philippines strategy. In addition,

promoting a strong banking sector and enabling broader access to sustainable energy sector are key priorities of IFC's East Asia regional strategy. Hence, there is a strong institutional support for the Program, with a broad base of resources available to co-finance and support the delivery of the Program.

IFC has an extensive base of relevant experience in the Philippines. The Manila office manages relationships with key private sector entities from the banking, industrial, commercial, and energy sectors, where IFC investee companies are prominent players in the national and local economies. In addition to the IFC investment portfolio, IFC's portfolio of GEF-funded collaborations in the Philippines provide an important foundation for the Program. The 1 MW IFC/GEF Cepalco Photovoltaic Project remains the largest grid-connected solar project in Asia – a landmark of great significance to the Philippines and the region. The highly successful IFC/GEF Efficient Lighting Initiative laid the groundwork for the follow-on UNDP/GEF PELMATP project, administered by DOE, and a potential source of lighting sector transactions to be financed on commercial terms by IFC partner banks.

In a market with extensive public sector programs and policy initiatives intended to establish an enabling environment to support commercial investment, the proposed IFC Philippines Sustainable Energy Financing Program represents an important final step in establishing a self-sustaining commercial lending market for sustainable energy investment. IFC's market-based approach, based on commercial financing of commercial transactions undertaken through the private sector is unique among the various programmatic efforts to support sustainable energy market development. Rather than dictating technology or sectoral foci, IFC will follow the market, and support our partner banks in the niches where they find commercial deals. No institution is better suited to execute this approach, and none has the experience of IFC in successfully executing the combination of business-focused practical TA with a variety of credit enhancement financial products.

IFC has a long and proven track record in promoting sustainable energy financing programs. Through its experience with HEECP (Hungary), CEEF (Central Europe), RSEFP (Russia), and CHUEE (China), IFC has refined its practical approach to assisting commercial banks to build sustainable energy lending businesses which directly support their strategic objectives. By leveraging the tools developed in those markets, and refining them for the distinctly different market conditions in the Philippines IFC seeks to build a new model with broader replication opportunities in Asia. IFC's implementation model has evolved substantially over the evolution of these programs. The Philippines IFC/PEP implementation partnership embodies the full thrust of lessons learned to ensure efficient and effective program implementation practices which incorporate the principles of adaptive management necessary to adjust to market dynamics and the reflect the needs of the private sector. This proposed Program will build on the technology, procedures, and know-how from the current portfolio of IFC programs (including the participation of CEEF and RSEFP staff in its development). Some of the practices to be included in the Program in the Philippines that will ensure an efficient implementation are derived from lessons learned from previous programs. Some of these practices, for instance, include:

- Co-locating consultants in banks to expedite on-the-job training and deal origination and closing,
- Partial cost-share/ charging beneficiary FIs and ESCOs for TA delivered,
- Capturing synergies with other existing efforts, and
- Leveraging existing IFC infrastructure in the country to avoid creating new program offices from whole cloth.

In summary, IFC is particularly well-positioned to deliver the proposed Project in the Philippines as it has:

- A dedicated TA facility with substantial regional experience and local capacity in the Philippines, which is co-funded by IFC and donor partners to (i) promote private sector investment, (ii) support the growth of small and medium-sized enterprises (SMEs), and (iii) improve the business-enabling environment;
- More than a decade of hands-on TA experience in the region;
- Global leadership in the development and execution of sustainable energy investment support facilities and approaches to credit enhancement for FIs;
- Is the largest investor in private sector sustainable energy in the developing world;
- Extensive local relationships with key stakeholders including local FIs, end-users, ESCOs, and utilities.

This combination of (i) institutional focus, (ii) country and sector experience, (iii) track record on implementing similar programs, and (iv) local delivery infrastructure, positions IFC to successfully implement the Program in the Philippines.

## 5. Financial Analysis

### 5.1.1. Financing Mechanism

As mentioned previously, the Philippines Government estimates that the investment requirement for sustainable energy projects is around \$1.3 billion. This is a large number representing the technical potential and should not be confused with the investment potential for real, economically viable projects. However, given the high energy prices in Philippines and the high level of awareness regarding impending threatened blackouts, the market opportunity for financial institutions, equipment suppliers etc is still very significant. If the threatened blackouts are to be avoided it is essential for financial institutions, in particular, to actively engage in this market segment to increase the overall level of investment in sustainable energy.

In discussions with financial institutions during project preparation it was clear that the level of financing provided to date is marginal. The thesis of this program is, therefore, to give financial institutions the tools and confidence to build a sustainable energy finance business and the incremental cost analysis modeled in Annex 5 is based on the level of incremental investment generated by financial institutions.

In developing the project IFC commissioned a preliminary assessment of the market for investments in sustainable energy and carried out numerous interviews with financial institutions and equipment suppliers to understand the way that sustainable energy investments are currently financed. IFC then conducted internal discussions to determine the level of appetite within IFC's financial markets department to provide financial instruments to stimulate investment in sustainable energy. In IFC's estimation a well timed intervention that stimulates an incremental investment by financial institutions of between \$29 million to \$44 million, over and above the amount of lending they currently book for sustainable energy assets, over the next 5 years is feasible: there is adequate capacity in the market to supply this level of goods and services, and, there is sufficient interest by the financial institutions known to IFC who, as "early adopters", can pioneer the market development and lead other institutions into this business area thus generating the additional private sector investment demanded by the Government target..

The financial arrangement described in this section derives from this analysis of: market potential, IFC's ability to deliver a meaningful financial product, the bilateral donor funds that IFC can mobilize through its various Trust Funds; the funds that GEF can provide for incremental costs that cannot be borne by IFC or other market players.

IFC will invest its own capital in the Program through loan guarantees and credit lines (depending upon demand from partner FIs) to local Philippine FIs to stimulate the market for energy efficiency investments. IFC plans to make an initial allocation of US\$30 million available for risk sharing – although the initial and eventual size of these facilities (which are expected to grow over the life of the Program) will be reviewed during individual negotiations with financial institutions. The nature of the risk sharing (or possibly IFC fully funded credit lines) will vary between institutions, based on actual demand. Learning from our experience in Central and Eastern Europe it is essential that



we retain as much flexibility as possible in how to structure the guarantee agreements as individual bank strategies and market opportunities change frequently, thus dictating new strategic foci and product needs by the partner banks.

The initial program target is to generate \$75 million in investment (around \$60 million in loans). IFC will, through negotiation with banks, try to reduce the level of first loss provision as much as possible whilst still maintaining an adequate incentive for the FIs to enter this new business area. As an example, in CHUEE the GEF approved a maximum first loss provision of 10% but subsequent rounds of funding have reduced this to 5%. The amount of GEF funding for risk sharing is US\$3m with IFC investing US\$27million. It is anticipated that the IFC funds in the Guarantee Facility will be mainly used in a second loss position to enable support for larger transactions, while the GEF funds will support a small sliver of first-loss exposure.

The credit facility will be structured to rely almost exclusively on the local FI's credit approval processes (with direct IFC TA support for and review of their appraisal processes), and subject to underwriting guidelines derived for each sector. If IFC is not directly involved in the transaction level guarantee it can avoid time-consuming ex-ante project evaluations by IFC staff in Washington which significantly add to transaction costs for both IFC and the FI. The risk for the GEF investment is still mitigated through: IFC's stringent appraisal of FI credit procedures; risk sharing structures (eg, <10% first loss guarantees) which ensure that the FI's interests are aligned with IFC/GEF, and through the use of TA to help with project structuring.

Fees will be charged to FIs for credit lines and guarantees. These will be set at "market rates" in accordance with IFC policy of not distorting markets. These fees are not set to substantially defray the costs of operating the Program, but rather based upon local capital market conditions. IFC will encourage sharing of market development costs with the FIs through in-kind effort from FI staff as well as co-financing of technical assistance and cost-sharing of co-located energy efficiency specialists. The co-financing principles are described in Section 6.

### **5.1.2. Technical Assistance and Implementation Costs**

The IFC Global Financial Markets Department will be responsible for managing the credit lines and establishing the guarantee facility. IFC's Legal Department will support the facilities on contractual matters. The Sustainability Business Innovator Group will provide strategic supervision of the Program team and technical support related to SE finance, technology, monitoring and evaluation, and SE market development. The IFC Philippines Advisory Services Facility will implement the project.

The technical assistance program and implementation costs will be co-funded through a combination of GEF and donor funds. The IFC Philippines Advisory Services Facility will contribute funds and human resources to support and implement the technical assistance component of the Program.

*Table 5-1: Summary of Project Budget*

<b>Technical Assistance and Local Implementation Budget (all figures in US\$)</b>	
STAFF COSTS (1)	1,052,921
OPERATIONAL COSTS	374,494
• Travel (2)	86,203
• Contractual services/ media (3)	89,792
• Equipment and Building (4)	15,132
• Communications (5)	89,792
• Other Indirect Costs (6)	93,575
CONSULTANTS (7)	2,398,120
Miscellaneous	9,005
<b>Total</b>	<b>3,834,540</b>
<b>Investment Facility Budget</b>	
IFC Risk Sharing Facility	27,000,000
GEF Risk Sharing Facility	3,000,000
<b>Investment Facility Total</b>	<b>30,000,000</b>
<b>TOTAL PROGRAM COST</b>	<b>33,834,540</b>

**Notes to Table 5-1:**

(1) includes salaries and benefits. Team comprises: Project Director, Project Manager, Project Officer, Team Assistant, Research Analyst, part-time Communications Specialist. Staff and consultants' costs now include M&E costs as well as financial product operational and management costs.

(2) Travel is mainly within the Philippines but also some international flights to Washington for training and to participate in international events to disseminate the results of the project more widely.

(3) Contractual services and media covers all training and awareness activities including: the salary of the communications specialists, press conferences, publications, seminars, market surveys.

(4) Equipment and Building: Office rent/lease for offices in Manila; furniture purchases for offices; Office equipment purchase (computers, printers photocopiers, software etc

(5) Communications (Postage, Telephone, Cables, Freight, FAX, Data communications

(6) Other Indirect Costs (Local Transport Cost, Bank charges, Passport charges, Utilities, Office refurbishment, Office Security, Office Moves, General supplies, Contract printing, Other publishing costs, Books and periodicals, Recruitment/ Misc, Shipping and storage

(7) Includes consultants fees and travel expenses for the international consultants providing technical assistance

**5.1.3. Co-Financing for technical assistance and operational costs**

Co-financing will be provided through IFC's Philippines Advisory Services Facility, which will provide \$0.8m from its donor funds to co-finance operational costs and technical assistance programs. This includes funds already expensed to date on pre-implementation activities.

IFC also intends to recover costs from clients (FIs, equipment suppliers, end-users) for a portion of the TA services delivered. IFC anticipates raising \$0.4m from clients. Should these funds not be recovered from clients then IFC will seek additional funding from its donors or from internal IFC resources.

In addition to the US\$1 million in direct support for Philippines country Program operations and technical assistance, IFC will provide co-financing in three additional ways:

- Co-funding of the guarantee facility
- Financing of all operational costs associated with negotiating, disbursing and supervising the credit lines and guarantee agreements together with sharing in the costs of marketing the financial products to the financial institutions.
- Financial institutions co-payment for TA services. IFC will charge FIs for certain TA services. A detailed discussion of this approach is provided in Section 6 of this report.

The current status of co-financing is shown in Table 5-2

*Table 5-2: Co-financing Sources*

<b>Co-financing Sources</b>				
Name of Co-financier (source)	Classification	Type	Amount (US\$)	Status*
IFC	Program management and operations	In-kind, personnel, and direct cost-share	\$620,000	Committed
Bi-lateral donors through IFC/PEP facility/ Philipp.	TA and operations	Cost-share	\$534 thousnd	Committed
FIs and ESCOs	TA	Fee-based cost-share	\$400 thousnd	\$142k already committed
IFC	Investment	Risk sharing	\$27 million	Conditional on GEF and FI demand
<b>Sub-Total Co-financing</b>			\$28.5 million	

The loan capital provided by banks and the equity provided by project sponsors is counted as leveraged finance. This is shown in Table 5-3.

*Table 5-3: Leveraged financing Sources*

<b>Financing Leveraged</b>				
FIs	Investment [Leveraged]	Loans provided	\$60 million	To be developed thru Program
Project developers/end-users	Investment [Leveraged]	Project equity	\$15 million	To be developed thru Program
<b>Sub-Total Financing Leveraged</b>			\$75 million	

#### 5.1.4. Use of GEF Funds

The GEF funds would be used exclusively to address areas of needed “additionality” in order to leverage available co-financing (and private sector commercial investment) which is conditional on the GEF contribution. This primarily includes financing the operations of the project implementation team and co-financing the technical assistance to FIs and project developers, as well as providing a portion of the funds for the guarantee facility.

IFC, itself, will provide co-financing to: set up, fund and manage the credit lines; and co-fund and administer the guarantees. It will also provide extensive training, coaching and mentoring for the implementation team, and help FIs with strategy development. This model has been proven in HEECP, CEEF and RSEFP.

The allocation of GEF funds in the program is shown in Table 5-4:

*Table 5-4: Use of GEF Funds*

Technical assistance and implementation	2,000,000
Monitoring & Evaluation	300,000
Guarantee Facility <sup>1</sup>	3,000,000
<b>TOTAL GEF COST</b>	<b>5,300,000</b>

1. Approximately \$1.8 million of the GEF funds allocated for guarantees are expected to be returned to the GEF once the loans supported are fully paid. This figure is based on past guarantee facility performance and is subject to modification during appraisal, as well as subject to uncertainty during project implementation.

#### 5.1.5. Incremental Cost Analysis

This Program involves three distinct types of incremental costs to be met by GEF funds. They include:

- (i) the costs associated with the TA programs that cannot be met from other funding sources;
- (ii) the amount of guarantee funds required to persuade FIs to invest in SE projects and which is subsequently not returned to GEF at the end of the Program;
- (iii) that portion of the Program’s administrative and operating expenses that cannot be met by IFC nor can be offset by fees paid by FIs.

The first and last are typical incremental costs while the second is related to the incremental risk facing FIs. Addressing this cost is necessary in order to persuade them to move into a new business area. The major justification for GEF’s involvement is that under the baseline situation Philippines lacks a robust commercial financing capacity for private sector SE projects. The specific use of GEF funds in the Program is limited to those areas where the Program co-funders and private sector investors are unable to pay the costs. The GEF contribution is thus truly incremental and additional, and is very highly leveraged in terms of both the resulting SE project investment generated, and the direct Program costs leveraged.

The TA and investment program operation is proposed for a period of 5 years. The estimated budget breakdown for technical assistance and operational costs over the five years is shown in Table 5-1 and totals US\$3.3 million.

Over and above the US\$1 million donor contribution from IFC donors and client contributions, IFC will provide a significant amount (approximately US\$620,000) of the Program implementation cost as an in-kind contribution through complementary activities and infrastructure provided through the IFC Philippines Advisory Services Facility in Davao and Manila as well as support and supervision from IFCs Environment and Social Development Department, the East Asia Department, the Legal Department, and the Global Financial Markets Dept. In particular, this contribution will include functions such as project oversight, finance and accounting, human resources support, IT support, legal support, credit review, personnel management, and impact assessment management.

This Program with GEF support is expected to significantly expand and deepen the market for commercial FIs' engagement in SE finance while also strengthening local SE firms. Implementation of this project will, in turn, yield a significant quantity of global environmental benefits in the form of reduced greenhouse gas emissions from the additional SE investments that will be financed.

*Table 5-5: Incremental Cost Matrix*

	<b>Baseline</b>	<b>Alternative</b>	<b>Increment</b>
<b>Domestic Benefits</b>	Heavy hydrocarbon based fuel usage in the industry electricity generation	Increased penetration of SE technology improves energy intensity of economy and yields lower environmental and health costs from an active economy.	Less local and regional air pollution
		Reduced national fuel consumption	Additional fuel available for export leads to economic growth
	Barriers to SE projects cause high fuel usage and inefficient industrial processes, hindering economic development and investment in productive uses.	Increased investment in SE enables capital preservation for investment in the productive economy and a more productive energy using sector, including, eventually, more comfortable housing.	Higher competitiveness of the private sector through lower production costs.
	Lack of readily available SE financing restricts SE investment to low level.	Local capacity building through technical assistance results in the	Increased SE investments and increased capacity for sustained SE investment in the future.

	<p>High unemployment and low SE project development capacity by ESCOs and FIs.</p> <p>Anticipated local power blackouts</p>	<p>development of domestic ESCO businesses and FI expertise with SE project financing. FIs more willing to finance SE.</p> <p>More productive jobs in the domestic service and manufacturing sectors, market development &amp; competitive markets for FIs and ESCOs</p> <p>Power supplies adequate to maintain domestic use and industrial production</p>	<p>Less unemployment and increased capacity to develop SE projects.</p> <p>Maintained industrial productivity. Avoided costs for building additional generating capacity</p>
<b>Global Benefits</b>	Current level of SE investments in Philippines inadequate	Additional SE investments financed yield at least 2 million tons CO <sub>2</sub> emissions reduction	SE investments financed yield at least 3.1 million tons CO <sub>2</sub> emissions reduction
<b>Costs</b>	Current level of SE investments in Philippines needs to increase by \$1.3 billion during the period 2004-2013. 90% of this to be financed by the private sector.	Investment by supported by commercial FIs in SE projects increases to at least US\$60 million as a result of IFC guarantees. This could increase this based on the participation of other IFIs attracted by Program success.	<p>Investment costs of US\$75 million</p> <p>Incremental costs of US\$0.6 million expected guarantee losses plus \$2.3 million GEF TA/Operational costs</p>

## 6. Sustainability and Replicability

### 6.1.1. Sustainability

- The overall objective of the Program is to support the development of a sustainable commercial financing market for SE projects in the Philippines. In other words, the anticipated outcome of the Program is that banks will finance SE after IFC/GEF exit driven by profit-seeking motivations as a normal business practice. IFC's experience from implementing SE finance market development projects in Central and Eastern Europe, Russia and China is that this can be achieved by seeking the right banking partners and using the Program to encourage banks to learn about this business segment and gradually integrate SE financing into their long-term business strategies.

IFC's work with FIs in other markets has demonstrated that banks are attracted to SE financing for a combination of reasons, including but not limited to:

- the realization that SE investments can improve the cash-flows of a borrower, thus improving the borrower's creditworthiness overtime, hence offering the bank a growth opportunity while improving its portfolio quality
- the ability to be one of the first movers and establish a strong market share in a high potential segment,
- the opportunity to differentiate the bank and its offerings in a highly competitive banking sector where, in general, margins might be very tight in more established sectors.

The proposed Program will adapt the experiences in Europe and China to the Philippines, by using specific tools to encourage banks to enter this market and integrate SE financings in their broader strategies. Once banks begin to experience the unique opportunities available in financing SE, they will pursue the market opportunity alone and without IFC/GEF support. This is the behavior IFC has experienced in other markets where the basic market conditions are analogous to those IFC has identified in the Philippines.

An additional aspect of sustainability is the willingness of end users, project developers, ESCOs and financial institutions to pay for some of the upfront costs that are inevitable to prepare bankable projects or to properly assess a credit risks, such as energy audits, technical evaluations, feasibility and market studies, etc. Section 3 described a range of services that the TA program team and external advisors would provide to all stakeholders. Based on the experience of IFC's Russia Sustainable Energy Financing Program a detailed pricing strategy for the TA tailored to local market conditions was developed. The approach is presented in Table 6-1, which gives examples of how some of these services would be fully or partially financed by different stakeholders to ensure that they are both valued and sustained in the future.

Table 6-1: Suggested guidelines for cost recovery of TA activities

Table 6-1. Suggested guidelines for cost recovery of TA activities				
	Service	Pricing bases	Provider	Comments
Energy auditing				
1	Walk through audit To identify key SE opportunities	free of charge	project staff/consultants	selling this to local SE audit companies as an opportunity to get a new client
		full costs basis or discounted rates from EE audit companies	Energy auditing companies	End-user pays directly to auditing company. Cost share if IFC has rights to use information for dissemination
2	Detailed SE audit to help put together investment opportunities / calculate savings etc - equipment - calculation of savings, - calculation of CO <sub>2</sub> effect - other critical issues	full cost paid by end user	Energy auditing companies	
		cost sharing	Energy auditing companies	Exceptions: a) replication potential by making results public, b) a mechanism to help a bank partner close a new type of a deal Three options are possible: 1. Reimbursement to end-user of up to 50% of costs in case end-user proceeds with auditing results to the stage of project investment. 2. IFC pays directly to the service provider its e.g. 50%, and end-user – its share 3. IFC contracts auditing company for full costs and gets 50% of service fee from end-user
Financial analysis				
3	Business plan	n/a	n/a	IFC will NOT be writing business plans. IFC will provide end-users with the Guide on submission of a proposal to the program.
4	Proposal pre-check for FI	Free	project staff	Program office staff act as a filter
Pre-investment - i.e. directing projects to FIs				
7	Presentation of a project to FI	Free of charge	Project staff	End-user should be paying the local costs of the consultants or IFC staff (i.e. their local travel/translation/housing/meals)
8	Technology implementation risks: tech. specific or	Free of charge	Project staff or external experts	End-user should be paying the local costs of the consultants (i.e. their local travel/translation/housing/meals)



	financials influence			
Awareness raising and liaison				
9	access to information materials (vendor database, ESCOs database, sample contracts )	free of charge	project staff	
10	seminars - the basic multi-company promotional seminars	free of charge	project staff	Basic awareness raising/ market education
11	Seminars - multi-company for more advanced topics	Direct costs	project staff	(room and food/drinks) should be paid for by the expected # of participants
Project specific advice/pipeline at one enterprise				
12	Prioritization of activities - expert work with the company	cost sharing	project staff	price to be determined based on anticipated # of hours the team has to invest and the potential for public dissemination of results
13	Seminars for one company focusing on its own issues	cost sharing	project staff	
Advice to Government on regulatory environment				
14	Recommend specific proposals on financial incentive policies for SE projects to the concerned government agencies	free of charge	Project staff and external experts	A level of cost recovery for consultant costs will be expected from DOE, LGUs and ERC, however this is not expected to result in significant amounts of revenue
13	Support the Energy Regulatory Commission in the development of an appropriate tariff level and pricing policy for electricity from different types of RE	free of charge	Project staff and external experts	

### 6.1.2. Proposed Replicability

The initiative builds on IFC's experience to date in Central and Eastern Europe. IFC's model in HEECP has proven to be replicable in multiple countries since its inception. Following IFC's adaptation of HEECP to five additional markets (in CEEF), Russia and China, Philippines Sustainable Energy Finance Program would represent a further adaptation of the IFC SE lending market development model in Asia, where the market is somewhat less-developed in this area. As such, the project represents an important opportunity to innovate in the area of commercial market development for less developed markets where more distortionary interventions such as subsidies and stand-alone revolving funds have been the common approach taken by the GEF to date. If successful,

the project would represent an important model for less-developed market economies where commercial SE investment activity remains low.

It is clear, however, that replication will not just happen on its own. IFC will therefore allocate a portion of the operational budget for public education activities and information dissemination within the Philippines, as well as anticipating emergent opportunities in the other markets where similar instruments might be effective. To support replication, IFC will thus adopt the Program systems (“software”) developed for its pioneering HEECP and CEEF Programs for use in the Philippines. IFC will make these systems, including due diligence checklists, model contracts, market assessments, appraisal guidelines, financial product models, TA menus, credit review procedures, monitoring systems, legal reviews, and lessons learned available to other SE finance programs which target the development of commercial finance markets in the region.

These financing technologies and software fall into three categories: (1) general information, templates, model contracts, case studies, etc., that will be posted to a website giving free access to all interested parties; (2) information on specific financial products developed with specific financial institutions that allow them to penetrate certain market niches. Information such as credit scoring mechanisms would be viewed as proprietary to the financial institution, although case studies on projects that use specific structures can be made publicly available, and marketing material promoting specific products will also be publicly available; (3) an Operating Manual for Program Management, a continuing work-in-progress which has evolved through IFC’s program implementation experiences, could be made available to other GEF funded SE financing initiatives.

## 7. Risk Management

### 7.1.1. Risk Analysis and IFC Risk Management Strategy

The TA program has been designed to support the IFC/GEF investment facility for Philippines financial institutions and potential investment recipients. Subsequent to IFC and GEF approval, the greatest risk is that the anticipated SE loans are not successfully placed. This risk is affected by a number of factors, including:

- The proposed guarantee mechanism fails to ultimately attract commitments from interested FIs
- FIs fail to generate a sufficient volume of bankable SE projects to utilize the facility
- Philippine ESCOs prove incapable of generating sufficient volume of new projects
- Adverse macro-economic conditions which cause deteriorating borrowing conditions
- Adverse energy policy changes which negatively impact the economics of SE investments
- Emergence of new subsidized SE programs that distort the market and discourage commercial finance.
- Adverse political environment deters private sector from undertaking new investments or business initiatives.

Some of the above mentioned risks were addressed during the IFC pre-implementation period during the last 12 months in close cooperation with FIs, Government, and other stakeholders. This approach would be broadened during the program implementation period to minimize the manageable risks. The adverse economic conditions initiated by the current global financial crisis could have opposite impacts on the program achievements. On one side a possible credit crunch coupled with portfolio deterioration and heightening of credit eligibility criteria could decrease total volume of finance available for the sector and willingness of FIs to lend, on the other side private and public sector would be under pressure to decrease costs, budgets, imports, etc. which could lead to faster development of SE projects, regulatory environment and general public awareness towards energy efficiency and renewable energy.

### 7.1.2. Individual Project Risk Factors

Program success is linked to a variety of risk factors, mostly related to economic conditions affecting investment. The following table describes the risk factors of SE in the Philippines and IFC's risk mitigation strategies at this stage of project development.

Table 7-1 SE risk factor and IFC's risk mitigation solutions applicable for Philippines

Risk Rating (H, M, L)	Type of Risk	Mitigating Factors
	<b>Non project risks</b>	
	<b>Political risk</b>	
M	Despite all the uncertainties in the Philippines politics sustainable energy is considered as one of the top priorities in the country.	<ul style="list-style-type: none"> <li>• Active public education activities.</li> <li>• Development of working contacts with Philippines governmental agencies.</li> <li>• Integration of Government officials in Advisory Committee.</li> </ul>
	<b>Economic risks</b>	
M	The economic conditions in the Philippines are currently stable. The economy is growing at 4-4.5% per year, driven by the service sector. Annual lending rates have been falling gradually: 91-day Treasury bills fell from 10.2% to 6% between 1999 and 2003, and average peso lending rates fell from 11.8% to 9.5% over the same period, with lending to higher risk customers at 12-14%. Most of the lending is short and medium term, usually up to 5 years.	<ul style="list-style-type: none"> <li>• Diversification of portfolio of projects in different industries. Development of projects with companies that have export potential.</li> <li>• Investment in process-related projects that have both energy efficiency and production- related benefits.</li> <li>• IFC long-term credit lines to participating FIs</li> </ul>
	<b>Risk of decreasing – or slowly increasing - energy prices</b>	
L	With an average price of \$0.16/kWh electricity prices in Philippines are exceptionally high. It is not anticipated that these will drop.	<ul style="list-style-type: none"> <li>• Analysis of continuous monitoring of the local energy supply market will be tied to advisory support of FIs and ESCOs. Consultations with Department of Energy, federal and local energy commissions.</li> <li>• Project appraisals use conservative energy price assumptions.</li> </ul>
	<b>Devaluation of the Peso</b>	
L	Peso devaluation may decrease the energy prices in relative terms as well as undermine capacity of borrowers to repay hard currency loans.	<ul style="list-style-type: none"> <li>• IFC can offer Peso credit lines to FIs, dependent upon FI interest.</li> <li>• Deal structuring and project finance principals to be used to manage foreign exchange risk, including tying loan currency to borrower's source of capital.</li> <li>• Pessimistic Peso devaluation scenarios to be included into project appraisals.</li> </ul>
	<b>Project related risks</b>	
	<b>Risk of bad financial performance of the investor or borrower</b>	
M	The financial performance of the investor or borrower may pose a risk of repayment.	<ul style="list-style-type: none"> <li>• IFC screens FIs to participate based upon well-established credit procedures and strong balance sheet.</li> <li>• Guarantees subject to approval by IFC</li> </ul>

		<p>on a project approval basis for large transactions and subject to pre-established underwriting criteria for smaller transactions and portfolio guarantees.</p> <ul style="list-style-type: none"> <li>• Pari passu guarantee structure ensures that FI interests are aligned with GEF's from a credit review perspective.</li> <li>• Very small percentage first loss avoids moral hazard issues of unaligned FI/IFC interests.</li> </ul>
	<b>Risk of technology choice</b>	
L	The chosen technology will not provide the expected savings, or will require additional financing.	<ul style="list-style-type: none"> <li>• Basic project finance principals employed: apportion risk in deal structure to those able to manage that risk – not the FI Required guarantees of performance from the equipment suppliers.</li> </ul> <p>TA program provides technical appraisal support to FIs for projects with important technology performance issues.</p>
	<b>The risk of equipment usage</b>	
L	Incorrect SE equipment usage may pose a risk on the performance of the equipment and results of energy saving.	Provision of training by the supplier of the equipment usage. Frequent monitoring of the usage of the complicated equipment.
	<b>Lack of interest of local financial institutions to be involved in SE financing</b>	
L	FIs do not utilize guarantees	<p>FIs pay a commitment fee to access the guarantee lines and interest when they draw the money down. They will also pay commitment fees on the guarantees.</p> <p>Innovative use of performance bonuses encourage FIs to prioritize SE lending business focus.</p>
M	Local banks may have little interest in financing SE projects due to the limited knowledge of SE projects, and their perceived potential benefits and risks, based upon this inexperience.	<ul style="list-style-type: none"> <li>• Careful selection of participating FIs</li> <li>• Provision of guarantee facility only after preparation of a pipeline for FI.</li> <li>• TA support for FIs in developing high quality business plan for EE lending. Detailed description of the project technical parameters, investment requirements and financial outcomes. Education of the financial institutions in regard to the SE projects specifics, assistance in developing and marketing targeted financial products.</li> <li>• Substantial pre-program training of FIs initiated by IFC early in IFC's pre-appraisal process.</li> </ul>

## 8. Monitoring and Evaluation

### 8.1.1. Overview

The Monitoring and Evaluation Plan (M&E) will build on the experience from previous sustainable energy financing programs, and will be an integral to the Project's implementation. The Project M&E will be established in a way to conform to the GEF guidelines, and is based on SMART Indicators (Specific, Measurable, Attainable, Relevant, and Timebound Indicators), which reflected in the Logical Framework. IFC will largely base its M&E Plan on experience through its other sustainable energy financing programs.

The M&E framework will assess the Program's (i) impact on SE projects supported by credit lines, guarantees and TA and implemented by the SE/ESCO businesses, (ii) impact on participating FIs, (iii) impact on the Philippines markets, and (iv) management and operations. Building on the LogFrame (see Annex 1), the M&E plan gives appropriate SMART indicators to assess the Program's financial/business, energy, and environmental outputs, as well as its outcomes. This should include measuring its market impact to assess whether or not it has achieved its primary objective of establishing a sustained market capability to develop SE projects and an expanded market for SE project finance. Additionally, the M&E process will also allow for an assessment of management and operations ("process evaluation") of both the investment and technical assistance programs.

IFC will collect data for the M&E through a combination of self-reporting by Program participants, implementation team record keeping, and third party investigations. IFC will employ a third party M&E contractor to provide independent verification, analysis and reporting of findings. The key M&E deliverables are:

- Pre-project M&E plan
- Data collection tools
- Baseline data – this will be collected to establish a baseline for each financial institution as it enters the program. IFC will also collect improved baseline data on equipment suppliers etc at the start of Program implementation
- Semi-annuale feedback to management on Program implementation
- Midterm review during the third year of operation
- End of Project review
- Post-project evaluation

### 8.1.2. A Comprehensive M&E Evaluation

Given the reach of the project, the M&E Plan will seek to address a number of different impacts. The key impacts to be monitored are discussed below.

### **8.1.3. Programs' impact on participating FIs**

IFC will evaluate the effect that the Program's financing facilities and TA have had on participating FIs. IFC will particularly monitor any changes that occur over the life of the Program in the FI's lending patterns, especially in the types of loans for which FIs use guaranteed versus non-guaranteed capital and the use of IFC (or other IFI) dedicated credit lines versus untied resources. Such a change will likely be evident both from an analysis of the FIs' self-reporting and from interviews with the FIs.

### **8.1.4. Program's impact on EE projects supported by the financing facility and implemented by participating SE/ESCO businesses**

IFC will introduce mechanisms for collecting and verifying data that provide evidence of emissions reductions, which will combine team efforts of records keeping and outsourcing several tasks to external M&E Contractor. Monitoring tasks will include:

- review the files and calculations of energy savings estimates that were made before the EE projects were approved for financing (and which will form a part of the loan documentation);
- train the ESCOs and local engineering firms on how to collect energy savings and GHG reduction data during EE project development and implementation, and provide them with any templates and tools, if needed;
- use this post-implementation methodology to check all large or complex projects and a sample of smaller SE installations to see whether the expected savings were actually achieved; and,

The methodology for post-implementation verifications will generally confirm the calculations made pre-installation for the projects. Key variables may include: combustion efficiency of new boiler systems, customer energy loads, generation output of boiler systems, efficiency of end-use equipment, production data, etc. Pre-installation calculations of the baseline, i.e., energy use of the existing system prior to the project, will be used and established in the pre-installation reviews. Participating FIs will assist in obtaining the cooperation of project participants including the implementing contractor, and the energy end-user; this will be accomplished through appropriate provisions and commitments in the financing and advisory service agreements IFC signs with the FIs. Site visits to projects may be necessary. The M&E contractor will also evaluate the impact of the Programs' TA activities on participating ESCOs and engineering firms.

### **8.1.5. Program's impact on the Philippines markets (national and regional)**

The Program's objective is to accelerate the development of the commercial EE finance market by changing the behavior of key market players (FIs, ESCOs, some energy end-users, relevant government agencies, etc.). A key aspect of the M&E work program will be to gauge PHILSEF's achievement of this goal. IFC expects that the EE projects PHILSEF supports will have a demonstration effect in the market. IFC further expects that TA activities will build the capacity and interest of market players to implement EE projects. In some cases, the Program's activities may lead to changes in regional or national policy that will also have significant market impact. These may include the

adoption of new procurement methods that allow private sector ESCOs to develop and implement SE projects for public sector entities, or the development of legally enforceable property ownership structures for cooperative housing that enable the use of commonly-owned property as security for bank loans (as happened in Lithuania). The M&E program will assess the Program's impact on the market by monitoring the indicators noted in the LogFrame and any other appropriate indicators of changed market behavior.

#### **8.1.6. Programs' management and operations**

The PHILSEF evaluation involves a review of, and an opportunity to update, the key elements of the Program design and structure. Is IFC effective in achieving its desired market impact and how is it doing it? How has a commercially sustainable SE/ESCO industry been fostered under the Program? Are the TA products well defined and effective in achieving their stated purpose? Are the Program's financing products effective in motivating FIs to increase their SE finance activity, or is something else needed? Is there continuing demand for the financial products? What is the continued relevance of the financial products to the various users? Are there other variations on or changes to the Program's structure that would make it more effective? What lessons for SE finance and SE project and business development are being gained? Is the Program effective in communicating and making available these lessons and experience to others? What strategies should the Program be considering to maximize its indirect impacts and demonstration value? Are the Program's environmental, economic, and social benefits likely to continue post-Program?

IFC will also review progress in Program implementation including management, administration and procedures in order to assess its effectiveness. Areas IFC will assess include: clarity and ease of procedures for processing transactions and TA grants by both IFC, FI partners and project participants; management and communications within IFC; record-keeping, communications and outreach to the market; budget status and cost control. These will all be key elements of the mid-term evaluation intended to enable mid-course programmatic improvements.

Methods used to conduct the evaluations will include review of the Program documents and structured interviews with the Program staff, management, participants and stakeholders. An external evaluator will conduct structured interviews with:

- Program staff and management;
- Staff from participating FIs;
- Staff from prospective partner FIs;
- Engineering consultants, ESCOs and SE businesses participating in projects supported by the guarantees, credit lines, and/or TA;
- Relevant Government officials and SE NGOs, including those participating in each country's Program Advisory Committee;
- Interviews with any prospective Program participants who have investigated the Program but for whatever reason, failed or declined to participate; and
- Interviews with any other stakeholders who are identified.



### 8.1.7. Monitoring and Evaluation plan

The total M&E costs are estimated at \$300,000. A budget of \$200 000 has been set aside for contracting external monitoring and evaluation contractors. Other costs associated with data collection will be included in the staff costs for team members. These costs are not expected to exceed \$100, 000.

We will use an independent evaluator only where an outside party brings specific value. The M&E approach will: a) use an outside evaluator to evaluate the data developed at both the mid-point and conclusion of the Project; b) use Project staff to provide real-time monitoring throughout implementation.

**Mid-Term Evaluation:** This evaluation will be performed by the independent evaluator, and will take place 2 years after the Project is started. Its main objectives will be to (i) identify opportunities to improve Project execution effectiveness; (ii) refine the initial framework for evaluation being used by the PMO, and (iii) as necessary, recommend adjustments in the Project execution strategy and implementation processes to the PMO. Some of the key areas of review during the mid-term evaluation would include:

1. Project status measured with respect to its results based management logframe for outputs, outcomes and impacts. Across the indicators, where relevant, measurement will be provided with respect to baseline.
  2. Results from the customer surveys and interviews capturing feedback on level of satisfaction with the Project activities and outcome of advice, training and other assistance provided by the Project. Surveys should include feedback on relevance, value-added, quality of prepared materials and provided services etc.
  3. Perception of the Project by other external stakeholders such as relevant business associations, training partners etc.
  4. Analyze Program management procedures and administration.
  5. Cost efficiency analysis, benchmarking against initiatives of GEF, IFC PEP and/or other technical assistance projects.
  6. Lessons learned and recommendations for improvement in Project organization, activities and targets.
- **End-of-Project Evaluation:** This evaluation will be performed by the independent evaluator at the conclusion of the Project execution, and will review the similar areas to the mid-term evaluation and measure the Project's direct impacts.

The GEF Terminal evaluation is intended to be completed at this point, approximately six months after the close of Project operations, and upon completion of the End of Project Evaluation study, which will provide the basis of the Terminal Evaluation. Therefore the End of Project Evaluation will incorporate all GEF requirements for Terminal Evaluation.

**DOCUMENT OF  
THE INTERNATIONAL FINANCE CORPORATION**

**PHILIPPINES SUSTAINABLE ENERGY FINANCE  
PROGRAM**

**ANNEXES TO GEF Project Appraisal Document**

**January 2009**

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## **Annex 1 Overview of Philippines Banking Sector**

The banking sector in the Philippines is fragmented, highly liquid, has a high ratio of non-performing loans and distressed assets, and is mostly concentrated in commercial lending to large, creditworthy companies. The key features of the commercial banking sector are:

- Commercial lending rates are on average 9.5%. Higher risk corporate customers are charged annual interest rates of 12 to 14%. In IFC's experience, interest rates at this level are adequately low to enable investment borrowing for sustainable energy projects.
- Banks are more selective in providing credit considering the current financial crisis.
- Tenors, typically, can go up to 7 years although one of the banks interviewed indicated that 60-70% of the commercial lending is up to 1-year, typically in revolving credit instruments providing working capital.
- Loans can be denominated in either Philippine Pesos or US Dollars.
- Lending to large, creditworthy companies is typically unsecured but with the current situation, banks are now requiring some form of a security package.
- Lending to middle market companies calls for collateral, in certain cases as high as 200%.
- Average size of loans for the middle market is ~ US\$ 550,000.
- Loan approval process takes about 1 month in the most developed banks

There are currently 847 banks operating in the Philippines and under 4 broad categories determined mostly by asset size and range of financial services and offerings. Universal and commercial banks, the largest type of banks, account for 87% of banking system assets and 5 of the largest banks account for 52% of the banking market. IFC has concentrated its discussions on eleven banks in the development of this Program.

Liquidity ratios are high and growing, while deposit levels have been rising with economic growth. Loans-to-deposit ratios have fallen from 72% in 2001 to 69.2% in 2007. Banks interviewed reported an average of 65% of lending to deposit ratio. Even though the non-performing loans improved to 5.8% in 2007 compared to 14% in 2004, the main driver for this situation is still the poor asset quality of the banking system. These factors make bank selection a key element of Program success. IFC has leveraged its extensive contacts and business in the sector to identify FI partners with sustainable credit practices and substantial business motivation to pursue aggressively the sustainable energy lending business.

## **Annex 2: Overview of Existing Sustainable Energy Initiatives in Philippines**

### *1. Department of Energy*

The energy efficiency and conservation programs of DOE include: information, education and communication campaigns; Government Energy Management Program (GEMP); advisory services for major industries and commercial buildings; energy consumption monitoring and evaluation of industrial, commercial, transport and power sector; recognition award program; heat rate improvement in power plants; systems loss reduction in transmission and distribution lines; and energy labelling and efficiency standards.

The National Energy Efficiency and Conservation Program (NEECP) was launched in August 2004 to achieve an average annual energy savings of 23 MMBFOE and 5.086 Gg CO<sub>2</sub> equivalent emissions

avoidance through the promotion of EE&C practices among energy users. In 2006, the energy conservation efforts of the government generated energy savings of about 0.88 MTOE with equivalent CO<sub>2</sub> emission avoidance of 2.1 million tons. This included savings accounted from the energy management activities conducted by DOE.

Administrative Order No. 126 directs the enhanced implementation of the Government's energy conservation program. In addition to two rounds of 10% reduction in energy requirements of government agencies, the use of compressed natural gas (CNG), coco-methyl ester (CME), ethanol and other biofuels was pushed. In a survey of 177 government accounts, a total of PHP 1 million is currently being saved through power factor (PF) improvement, another PHP 1.2 million remains as potential PF savings for some 149 government accounts with PF < 95%.

## 2. *Asian Development Bank*

TA 5972-REG: Promotion of Renewable Energy, Energy Efficiency and Greenhouse Gas Abatement(PREGA) appeared to be winding down in the region and to be gradually replaced by the RSC-C51563 (PHI): Energy Efficiency Initiative (EEI). The EEI has been launched by the ADB to formulate an operational strategy to assist developing member countries (DMCs) to increase energy efficiency and reduce their carbon intensity. The EEI will analyze existing in-house and external knowledge and prepare a study on current status of energy efficiency potential and identify strategies for ADB to expand its lending portfolio in this area. The EEI will recommend projects and activities that ADB could support over the medium term in order to move the DMCs towards an energy efficiency path.

Loan PHI 42001: Philippine Energy Efficient Project (PEEP) is a 35 million USD loan to the Philippine Government that aims to provide direct economic benefits to the country by reducing energy peak demand and the needed imported oil for power generation. The project will feature, among others, the replacement of 13 million incandescent bulbs with CFLs. With this, the government is expected to reap the following benefits: reduce peak demand by 450MW, reduce oil imports by 120 million USD each year, defer power generation by 1,300MW or 0.3 billion USD, clean development mechanism (CDM) revenues of about 10million USD for 2010-2012 (the Kyoto Protocol), and create an energy efficient market. Other than energy light bulbs, the following components form part of the project: government retrofit, public lighting retrofit, energy efficiency testing and lamp waste management, super ESCO (Energy Service Company), green building initiatives and communication, and social mobilization.

## 3. *UNDP*

Two 5-year UNDP-GEF climate change programs continue in the Philippines: CBRED and PELMATP. PELMATP has begun follow-through activities to ELI's earlier interventions for DSM and ESCO transaction support.

## 4. *Palawan New and Renewable Energy Livelihood Support Project*

UNDP is acting as implementing agency of the GEF to support a medium size project (PHI/99/G35 Palawan New and Renewable Energy and Livelihood Support Project) aimed primarily at reducing the long-term growth of greenhouse gas (GHG) emissions by removing barriers to commercial utilization of renewable energy power systems to substitute for use of diesel generators in Palawan. Part of this UNDP-GEF project is support for the development and finance of renewable energy projects serving

rural areas of Palawan, which has specifically targeted support for financing sales of solar home systems. SSPC is engaged in developing the rural market for solar photovoltaic systems which it markets and sells, through franchisees, to rural households under the brand name “Solarmax Solar Home Systems” (“SHS”), a sustainable and renewable energy technology suited for basic electrification of rural households. CBP can provide loan financing direct to individual customers for the purchase of SHSs, subject to availability of funds.

#### 5. *World Bank*

A proposal entitled “The Philippines Chiller Energy Efficiency Project” is currently being prepared for submission to the GEF. The project’s main objective is to replace older chillers by non-CFC ones which are more energy efficient. The project will assist in stimulating the accelerated conversion of CFC-based chillers to new and more energy efficient technology through the provision of financial incentives, supported by a robust policy framework, to address well-documented techno-economic barriers and overcome market barriers for Energy efficiency (EE). The sustainability of this endeavor would be further enhanced through the capture of carbon finance revenues. The project will also support the strengthening of national capacity for carbon finance intermediation which will further ensure sustainability for a programmatic approach that would lead to a permanent transformation of the chiller market. The project will contribute to the government’s ongoing efforts to meet its obligations under the Climate Change Convention and the Montreal Protocol. This is likewise consistent with the Medium Term Development Plans (MTDP) of the government which is focused on the conversion of systems into ODS-friendly technology, products and equipments. The project will complement the on-going efforts in the Philippines to reduce end-use CFC consumption in servicing and also support the National CFC Phase-out Plan being financed by the Multilateral Fund. IFC has been consulted on this project to ensure that we are placed to leverage each others’ work to reach our aligned goals.

#### 6. *Development Bank of the Philippines*

DBP has credit facilities amounting to P6 billion, for water and power projects, particularly new and renewable energy, solid waste, and industrial pollution control. The loan is in line with the DBP’s efforts to promote new and renewable sources of energy and to encourage businesses to adopt and implement emission reduction projects under the clean development mechanism framework. DBP has signed with various agencies such as JBIC, EIB, KfW and SIDA to fund these credit facilities. Credit facilities are also extended to prospective CDM projects. DBP will facilitate the sale of emission reduction credits and obtain a preferred negotiation status for the emission reduction credits.

#### 7. *Land Bank of the Philippines*

LBP established a carbon finance support facility (CFSF) for the purpose of providing financial assistance to CDM (clean development mechanism)-eligible projects and assisting clients in every step of the CDM project cycle. Priority projects under the CFSF include animal waste-methane recovery to energy, co-generation, renewable energy technologies, and energy efficiency. Credit facilities available to support CDM projects, include the:

- CBRED project preparation fund (PPF) program, a loan financing mechanism intended to assist renewable energy (RE) project developers in paying for the high cost of project preparation activities such as feasibility study, engineering design, securing permits and licenses.

- Renewable energy for wiser and accelerated resources development (REWARD), a program designed to provide support to the government's call to promote the development of alternative fuel/energy sources of renewable energy and financial assistance to entities that will engaged in RE projects.
- Support for strategic local development and investment project (S2LDIP), a \$100-million fund available for local government units (LGUs) and public utilities and private operators providing local infrastructure services. The program's main objective is to improve the living conditions, public health standards and urban environment through the provision of upgraded and improved infrastructure and services.

The EIB will also extend a 50 million EURO facility to Land Bank which will be allocated as credit lines for projects linked with climate change mitigation. The credit line will be open to local enterprises, cooperatives and local governments that have projects in the areas of re-forestation, water treatment, renewable energy and improved energy efficiency.

### Annex 3: Project Design Summary (Logical Framework)

Hierarchy of Objectives	Key Performance Indicators	M&E / Data Collection Methodology	Critical Assumptions
<b><u>GEF Strategic Priorities:</u></b> CC2 – Increased access to local sources of financing for renewable energy and energy efficiency	Increase in the number of FIs (incl. partner <sup>1</sup> and non-partner) providing dedicated financing for EE projects Number of FIs stating intention to continue financing beyond the program timeframe  <b>Direct environmental benefit</b> Total CO <sub>2</sub> emissions reduction achieved by implemented transactions (3.1 million tons)	Participating FIs will report to Program mgmt;  External evaluator will interview non-participating FIs and collect complementary data for participating FIs  Reports on energy savings from EE project developers	FIs & EE service providers will find the line of business profitable  Implementation of program activities will foster energy efficiency and lower CO <sub>2</sub> emissions
<b><u>Project Development Objective / Global Objective:</u></b>	<b><u>Outcome/ Impact indicators :</u></b>	<b><u>Project Reports:</u></b>	<b><u>(from Objectives to GEF Strategic Priorities)</u></b>
To build a sustainable capacity in the Philippines market to develop and finance commercial transactions that use energy more efficiently and/or use new energy sources at several level.  To create commercial lending platform for EE with emphasis on the following actors  a) Financial institutions b) Project developers (ESCOs, vendors) End-users	((a,b) Number (at least 20 per FI) and value (at least \$60 mln in total) of financed EE investment initiatives enabled by the Project, incl. by FIs and other sources (b) Increase in the number (by at least 3) and size (in annual revenues from private sector projects) of partner EE project developers (b) Number of vendors relationships facilitated with FIs (c) Number of assisted end-users reported to use training materials and advice in their daily practices (at least 80%) (a) At least two employees per FI who know how to assess, structure and monitor loans to EE transactions (a) Portfolio of EE transactions has a satisfactory repayment rate (97%)	Baseline assessments of FIs, ESCOs and of other EE market players  Participating FIs' regular self-reporting to the Program as part of credit line monitoring.  Mid-term and final evaluations by external evaluator	The Program overcomes existing EE market barriers and builds a sustainable EE market capacity, thus contributing significantly to the GEF's strategic priorities and to the IFC's development mission.  The barrier we identified are indeed the principal constraints to growth in this area.  There is no major deterioration in the macro economic climate  Oil prices do not drop sharply thereby reducing the incentive for end users to adopt EE equipment

<sup>1</sup> 'Partner financial institution' is a bank or leasing company which utilized IFC credit lines or GEF/IFC guarantee facility and/or received tailored technical assistance. Non-partner FIs are financial institutions attending training and receiving ad-hoc consultations, or who enter the sustainable energy finance market because they see the benefits enjoyed by their competitors..



Output from each Program component:	Output Indicators <sup>2</sup> :		(from Outputs to Objective:)
(a) Participating financial institutions offer specialized financial products to finance SE projects in Philippines	<ul style="list-style-type: none"> <li>Number of specialized financial products developed during the life of the program</li> </ul>	<p>The Program operational reports</p> <p>Participating FIs' regular self-reporting to the Program as part of credit line monitoring.</p> <p>Mid-term and final evaluations by external evaluator</p>	FIs will finance more EE projects if they are provided with long-term capital, a risk management tool, and training. Eventually, these FIs will no longer need the Program's support to continue financing EE transactions beyond the Program's term.
(b) Participating FIs develop and implement new strategies and are able to appraise SE projects in Philippines	<ul style="list-style-type: none"> <li>Relevant employees in FIs have taken classes on assessing, structuring and monitoring loans to EE transactions</li> <li>% of participants who give positive feedback on quality and relevance of Program's assistance, materials &amp; tools</li> </ul>	<p>The Program operational reports</p> <p>Event attendance lists and feedback questionnaires</p> <p>Interviews with ESCOs and vendors assisted by the Program</p>	Through a process of 'on the job' training, FIs can learn to finance and project developers can learn how to obtain financing for EE transactions. Thanks to this training, they will remain active EE market players beyond the Program's term.
(c) Local energy product/service providers strengthen their capacity through training events and Program's guidance in implementing select projects on a pilot basis	<ul style="list-style-type: none"> <li>Number of ESCOs and vendors advised or trained (at least 30 companies)</li> <li>Number of transactions supported by the Program's TA services (at least 100)</li> <li>Feedback on quality and relevance of Program's assistance, materials &amp; tools</li> <li># of people from # of companies trained (at least 100 companies)</li> <li>Feedback on quality and relevance of Program's assistance, materials &amp; tools</li> </ul>	<p>The Program operational reports</p> <p>Event attendance lists and feedback questionnaires</p>	<p>With effective M&amp;E and dissemination, the Program can 'make the business case' for investing in EE, thus increasing demand for EE products, and strengthening the EE market.</p> <p>Macro economic conditions are such that investment in EE continues to be attractive.</p>
<b><u>Input into each Program Component:</u></b>	<p>US\$ 3.3 million for TA and operations (US\$2.3 million GEF, US\$0.8 million donor funded)</p> <p>US\$ 0.2 million from clients</p> <p>US\$3.0million for risk sharing (GEF)</p> <p>US\$ 27 million for risk sharing (IFC)</p>	Program Records	The program's inputs and timeframe are sufficient to achieve its objectives.
(a) Financial instruments to FIs		Program Records	
(b) Technical assistance to financial institutions		Program Records	
(c) TA to vendors and ESCOs, incl. to transactions		Program Records	

<sup>2</sup> For some activities, more specific performance indicators with timelines for their achievement will be developed during Program appraisal.

#### Annex 4: Project Budget for TA and Operational Costs

	Year 1	Year 2	Year 3	Total
	USD	USD	USD	USD
<b>STAFF COSTS (1)</b>	<b>325,091</b>	<b>353,275</b>	<b>374,555</b>	<b>1,052,921</b>
<b>CONSULTANTS (2)</b>	<b>776,230</b>	<b>798,741</b>	<b>823,149</b>	<b>2,398,120</b>
<b>OPERATIONAL COSTS</b>	<b>126,454</b>	<b>123,071</b>	<b>133,974</b>	<b>383,499</b>
Travel (3)	26,000	27,050	33,153	86,203
Contractual Services and media(4)	28,483	29,907	31,402	89,792
Equipment and Building(5)	4,800	5,040	5,292	15,132
Communications (6)	28,483	29,907	31,402	89,792
Other Indirect Costs (7)	29,683	31,167	32,725	93,575
Contingency	9,005			9,005
<b>TOTAL DIRECT COSTS</b>	<b>1,227,775</b>	<b>1,275,087</b>	<b>1,331,678</b>	<b>3,834,540</b>

(1) Includes salaries and benefits. Team comprises: Project Director, Project Manager, Project Officer, Team Assistant, Research Analyst, and part-time Communications Specialist as well as M&E experts.

(2) Consultants include all fees and travel expenses for the technical assistance and M&E.

(3) Travel is mainly within the Philippines but also some international flights to Washington and to participate in international events to disseminate the results of the project more widely.

(4) Contractual services and media covers all training and awareness activities including: the salary of the communications specialists, press conferences, publications, seminars, market surveys.

(5) Equipment and Building: Office rent/lease, furniture and office equipment (computers, printers photocopiers, software etc) for offices in Manila;

(6) Communications (Postage, Telephone, Cables, Freight, FAX, Data communications

(7) Other Indirect Costs (Local Transport Cost, Bank charges, Passport charges, Utilities, Office refurbishment, Office Security, Office Moves, General supplies, Contract printing, Other publishing costs, Books and periodicals, Recruitment/ Misc, Shipping and storage

## Annex 5: Incremental Cost Analysis

### Summary of Methodology

The reduction in CO<sub>2</sub> emissions from the program has been calculated through four main steps.

First, the amount of investment to be stimulated by the program has been estimated based on the market assessments carried out during project development and discussions with financial institutions. Second, the total revenues needed to cover capital costs, operating and maintenance, and management costs have been calculated. This assumes that 100% of the costs can be covered by energy savings. Third, the needed revenues are divided by the average energy prices to determine the level of energy savings required to cover project costs. This was then compared with expected savings from projects identified during the market assessment. Finally, the CO<sub>2</sub> emissions associated with the energy savings have been calculated based on average emissions per unit of energy saved (using Philippine Government statistics).

This methodology is consistent with those used and approved by the GEF SEC for WB/IFC programs CEEF, Russia Sustainable Energy Finance Program and CHUEE.

### Scenario for incremental costs and benefits with a leverage of 10x GEF Guarantee Funds

#### Philippines Sustainable Energy Finance Program

#### IFC/GEF Incremental Cost Analysis - assuming x10 leverage of GEF Guarantee Funds

##### Basic Assumptions

Equity (ratio) of total project cost	0.2
Financial Rate of Return of EE projects undertaken	0.2
Average life-expectancy of EE investments (1)	10
Average loan period	5
Currency exchange rate (Php:USD)	47
Electricity cost (Php/kWh) <sup>2</sup>	6.00
kg CO <sub>2</sub> per kWh for electricity <sup>3</sup>	0.5

(1) IFC norm is to take an average life of 10 years. This reflects a conservative approach, which is partly due to the fact that projects in developing countries may have shorter useful lives than in developed countries.

(2) Based on average commercial electricity rate

(3) Average emissions reduction factor

Investment split by sector	Split
Residential	0.29
Commercial	0.31
Industrial	0.40
	1

	USD million
GEF Guarantee Facility	3.0
GEF TA contribution (4)	1.5
GEF adminstr./mgmnt.	0.5
IFC donor funded programs	0.8
Client contribution to costs	0.2
IFC in kind contribution	0.92
IFC Investment (Guarantees)	27
% Risk taken by facility	50%
<b>GEF Guarantee Leverage</b>	<b>10</b>

(4) supplemented by \$1m from IFC PEP sourced donor funds

### Sensitivity Analysis (1)

	Best	Base	Worst
Percentage of total GEF guarantee funds lost (2)	0.05	0.25	1
Percentage of potential energy savings realised (3)	1	0.75	0.35

(1) Assumes different levels of guarantee losses and different energy saving scenarios and calculates respective implications on costs per ton of CO<sub>2</sub>.

(2) Best case: 5% GEF guarantee funds are called; Most likely case: 25% of GEF funds are called; Worst case: 100% of GEF guarantee funds are called.

(3) Best case: Achieved energy savings 100% of those projected; Most likely case: Energy savings 75% of those projected; Worst case: Energy savings are 35% of those projected.

## CO<sub>2</sub> Savings

	US\$million
Total IFC and other donor funds	30
Total GEF Contribution	5.3
Total IFC/GEF funds	35.3
<b>GEF/IFC funds available for credit lines and guarantees (1)</b>	<b>30</b>
Amount of Bank loans (excl. gearing/partial recycling of funds) (2)	60
Project Sponsor equity	15
<b>Value of total EE investments supported (3)</b>	<b>75</b>
<b>Cost savings</b>	
Estimated cost savings per annum (4)	\$41,609,221
Energy savings per annum.- MWh (5)	325,939
tons CO <sub>2</sub> saving from electricity p.a (6)	310,993
Total life time CO <sub>2</sub> savings-tons	3,109,927
<b>Total life time CO<sub>2</sub> savings-million tons</b>	<b>3.1</b>

(1) IFC investment (credit lines plus guarantees)+(GEF guarantee facility, including performance bonus)

(2) EE Bank loans

(3) Assumes EE project finance: 20% equity and 80% debt financing

(4) Estimated cost savings based from the expected project mix

(5) Total energy savings per year Based from the expected project mix.

(6) Annual tons of CO<sub>2</sub> avoided based on the Philippine grid emission factor (0.5 kg CO<sub>2</sub>/kWh)

(9) Annual tons of CO<sub>2</sub> avoided times to average life-expectancy of EE investment

### Sensitivity Analysis

<b>Best case scenario (1)</b>	<b>US\$ million</b>
Incremental costs (2)	2.3
GEF guarantee losses (3)	0.2
Total Incremental costs	2.5
<b>Cost per ton of CO<sub>2</sub> (US\$) (4)</b>	<b>0.8</b>
<b>Most likely case scenario (5)</b>	
Incremental costs	2.3
GEF guarantee losses (3)	0.8
Total Incremental costs	3.1
<b>Cost per ton of CO<sub>2</sub> (US\$)</b>	<b>1.29</b>
<b>Worst case scenario (6)</b>	
Incremental costs	2.3
GEF guarantee losses (3)	3.0
Total Incremental costs	5.3
<b>Cost per ton of CO<sub>2</sub> (US\$)</b>	<b>4.82</b>

(1) Achieved energy savings are 100 % of those projected and 5% GEF guarantee funds are called.

(2) Sum of GEF TA contribution and GEF admin./mgmt

(3) GEF guarantee funds times GEF Commercial losses (assumptions-sensitivity analysis)

(4) Total GEF incremental costs divided by CO<sub>2</sub> savings

(5) Achieved energy savings are 75 % of those projected and 25% of GEF guarantee funds are called.

(6) Achieved energy savings are 35 % of those projected and 100% of GEF guarantee funds are called.

From the pre-implementation activities, it was projected that around 60% of the projects will be on energy efficiency involving replacement and/or retrofit of chillers and air conditioning units; compressed dry air and steam production units; motors and drives; and lighting. The rest will be on renewable energy such as power generation or cogeneration using biogas and biomass; and mini-hydro projects. The following table shows the expected types of projects with the corresponding estimated cost, energy and cost savings, and greenhouse gas emission (GHG) reduction that the Program will be engaging in.

It is estimated that the total annual energy savings will be 325,939 MWh equivalent to 41.6 million US\$. Considering a 10 year project life, the total greenhouse gas emission (GHG) reduction is expected at 3.11 million tons of CO<sub>2</sub> equivalent.

Type of Project	No. of Projects	Project size (kW)	Total Cost (US\$)	Total Projected Loan (US\$)	Annual Energy Savings (per project) Kwh	Energy Cost Savings (Per Project) USD	Energy Cost Savings (Total) USD	Total Annual Energy Savings Kwh	GHG emission reduction tonsCO2/yr
Energy Efficiency									
Chiller, STACU/PACU/window AC	17		16,035,461	12,828,369	2,759,400	352,264	5,988,485	46,909,800	23,455
CDA/Steam	4		1,200,000	960,000	2,069,550	264,198	1,056,791	8,278,200	4,139
Motors and drives	5		638,298	510,638	358,080	45,712	228,562	1,790,400	895
Electrical	5		500,000	400,000	1,971,000	251,617	1,258,085	9,855,000	4,928
Renewable Energy									
Biogas	17	150	2,893,617	2,893,617	985,500	125,809	2,138,745	16,753,500	156,400
Biomass	5	5000	37,500,000	30,000,000	39,600,000	5,055,319	25,276,596	198,000,000	99,000
Mini-hydro	1	8000	16,000,000	12,800,000	44,352,000	5,661,957	5,661,957	44,352,000	22,176
Total	54		74,767,376	60,392,624		11,756,876	41,609,221	325,938,900	310,993
								Total (10 years)	3,109,927

## **Annex 6: Lessons from the Central Europe, Russia, and China**

More than one decade of experience in sustainable energy finance in different regions, countries and economic environments has equipped IFC with a unique knowledge and know-how for design and implementation of sustainable energy programs. In the development of PHILSEF were particularly useful lessons learned from similar programs in Europe and Asia. Bellow are summarized the major findings and conclusions applied now to the proposed SEF program in the Philippines.

### **I. Central Europe (HEECP 1 and 2/CEEF Program, 1997-2008)**

#### **Background**

The Hungary Energy Efficiency Co-Finance Program (HEECP) which evolved later in the Commercializing Energy Efficiency Finance (CEEF) program is the first attempt by IFC to develop commercially viable financial and advisory products to promote sustainable energy (SE) projects by financial intermediaries. Acquisition of scaling-up/mainstreaming experience was probably one of the most important ideas behind the CEEF program. After 10+ years of operation in six different countries with almost 20 different financial institutions (FIs), IFC has learned more about the complexity of this task and has drawn some conclusions which could be applied in pursuing business opportunities in sustainable energy in other regions and markets.

Since its launch in 1997, the program has developed numerous innovative financial products and advisory approaches in cooperation with commercial banks and leasing companies in Central Europe. The program underwent the development from fully donor-funded operations to commercial financial products and advisory services.

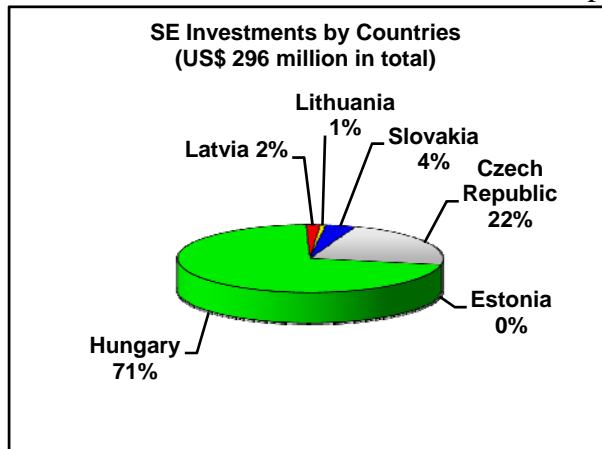
The CEEF project portfolio includes, among others, residential housing retrofits, district heating upgrades, gas-fired cogeneration projects, street lighting retrofits, renewable energy generation such as wind, small-hydro, solar, and biomass projects, etc.

Developed risk-sharing financial products range from individual pari passu partial credit guarantees to more sophisticated portfolio pari passu guarantees with the first loss guarantee component. Advisory services products include consulting, research, and training at the level of individual project/sponsor/developer, individual financial intermediary, or the market/country/region.

#### **Results**

Although the program has achieved quite impressive financial results (taking into account the nature of the business) and has supported \$67 million in guarantees over 600 sustainable energy projects of total value – almost \$300 million without any guarantee call until now – its major value lies in its potential to provide solutions, which can be replicated and scaled up

in IFC mainstream business. In order to determine some more general lessons, we have looked at the investment results from the perspective of the respective countries and FIs.



First of all, the investment results vary substantially from country to country, despite the fact that we deal with a relatively “homogeneous” group of new European Union member states with a similar historical background, moving from a centrally planned economy through market-oriented reforms to the current free market status. The country distribution of guaranteed investment volumes is shown in the pie chart opposite.

The general country investment environment and the maturity of its sustainable energy market have a substantial impact on investment outcome. The major part of the portfolio is in Hungary, where a pilot project started 5 years ahead of the other countries. On the other hand, it is worth noting that more than 90 percent of the Hungarian portfolio was booked just over the last 3 years. At the opposite end of the scale is Estonia, where the existence of a government-subsidized lending plan has prevented any kind of commercial lending via financial intermediaries that would require IFC guarantee products.

The same diversity of results is also evident within each country market, especially in those countries where the program worked with several FIs. About 90 percent of the total loan volume is concentrated in three partner banks, of which only two have reached investment volumes that could be considered substantial from an IFC mainstream point of view.

The three most successful commercial banks typically have a strong focus on certain market segments – the residential housing segment of Raiffeisen Bank in Hungary, the renewable energy segment of Ceska Sporitelna in the Czech Republic, and the gas-fired cogeneration segment of Erste Bank in Hungary. The remaining banks with less focused approaches have not achieved substantial lending volumes through IFC guarantees.

## **Lessons Learned**

### **1. Identification of the right partner FI is a must.**

This general rule is surely not exclusive to SE projects, but translated into the SE business reality, it means that it is not enough to have just a “good” bank to work with; instead, the bank has to have a very focused approach to the SE market. In other words, it means that the bank internally, and especially at the senior management level, has decided to strategically capture the business opportunity and is ready to allocate the necessary resources to achieve real impact. IFC’s role in this phase of strategic orientation can be quite important in helping to articulate the SE strategy and the respective business targets.



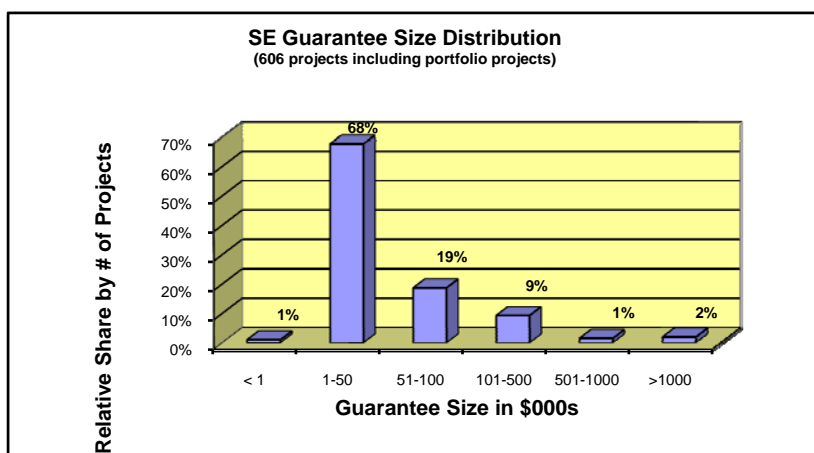
Is there any possibility of formulating a “best practice” on how to identify the partner FIs with the highest SE impact/investment potential? The above results show that you need to work with a relatively large number of FIs to be able to identify and help build up an SE finance “champion.” The one major feature of the best performers was a demand-driven nature of cooperation with IFC. Services provided by IFC were in alignment with the specific business needs of the FI. Therefore the nature of cooperation was focused on “how to implement it and what the best tools are to do it with” rather than on “why cooperate and how to persuade the FI of the benefits.”

## 2. Customization of financial and advisory services for the partner FI is essential.

When talking about “SE financial and advisory products” we mean mostly standard, more or less sophisticated financial products which are customized according to the SE projects and the FI’s need. This leads to obvious questions: What are the FI’s needs in funding, risk mitigation, or know-how? And what is acceptable for IFC from the point of view of its role and the risks involved?

There was observed that the partner FIs appreciate many more products with a relatively higher IFC risk, although the absolute amount is quite small. The best example is the pari passu portfolio guarantee product with a small (under 5 percent) first-loss component, which was very successfully used in the housing renovation sector in Hungary. Until now, about \$900,000 placed in the first-loss position has triggered SE investment loans of \$44 million, and the leverage factor (now almost 50) is still on the increase with a growing portfolio. The same effect is also noted in a related school renovation project in Hungary, where the first-loss guarantee leverage factor is supposed to reach almost 100 at portfolio closure. In both cases, IFC was able to address the concrete business needs of its partner FI and to add value where it was needed and expected, although it must be mentioned that it was only possible thanks to available donor funding provided in both cases by the Global Environmental Facility. So the perception of risk is working not just on the FI side but also internally for IFC.

In the non-financial, advisory services area, the greatest demand was for technical advice on different SE technologies. This was provided initially by the CEEF staff but over time increasingly by private sector advisors.



Finally, it is worth noting the size distribution of the supported projects/loans and the respective guarantees. The bar chart shows that 88 percent of projects have a guarantee size of less than \$100,000, and that only 2 percent of projects have a guarantee size greater than \$1 million.

The data confirm that a substantial part of business opportunities in the sustainable energy sector are micro, small, and medium-size projects, and the only feasible way for IFC to access the market is to partner with commercial banks and other financial intermediaries. What are the consequences?

### **3. Delegation of investment decisions to FIs and outsourcing of advisory services are preconditions for substantial scale-up.**

The experience from the CEEF portfolio growth is that the most effective way to boost the investment volumes has been the delegation of project approval authority from the credit point of view to the partner FI. This, in combination with an independent technical review of projects, has led to the fast growth of the SE portfolios with excellent performance without project defaults. Outsourcing of credit processing capacity to FI and advisory services to the private sector providers in combination with IFC's internal advisory capacity (private enterprise partnership, or PEP), especially at the beginning of the partnership, seems to be the only way to achieve substantial growth of IFC's SE investments in the upcoming period.

The ability and willingness of IFC to delegate credit approval authority were based on detailed knowledge of the FI credit approval criteria and risk management system in place, but more importantly on first-hand practical experience with how the procedures and systems are applied in the FI project approval cycle. Only FIs with a positive track record were eligible for credit approval delegation.

Regarding technical due diligence of SE projects, there were used two types of approaches. Few banks have built up their own technical and engineering capacity, especially in cases when they focused on relatively larger projects applying project finance techniques. However, the majority of FIs were outsourcing technical assessment of the projects to "proven" reliable private sector providers, and they were able to move from subsidized advisory services provided by program staff or consultants at the beginning to fully commercial services available in the market. The latter approach seems to be the way to go for smaller projects; moreover it has a built-in "sustainability mechanism" to continue SE investments after direct IFC involvement with the bank has ended.

## **II. Russian Federation (RSEFP, 2005-2010)**

The Russia Sustainable Energy Finance Program (RSEFP) is another step in IFC focused efforts to develop a replicable commercial financing model for sustainable energy. It is the first IFC program providing dedicated credit lines to the financial intermediaries.

### **Background**

The primary goal of the RSEFP is to create sustainable capacity in the Russian financial sector to finance energy efficiency projects. The program addresses three major barriers of EE investments in Russia: lack of long term liquidity, high risk perception/lack of experience of FIs in financing EE projects and lack of project preparation skills. The program has three investment and advisory tools to address the above barriers:

- Dedicated credit lines to FIs;
- Partial credit guarantees to portfolio of projects;
- Technical assistance (advisory services) package partially funded by donors.

The RSEFP has four main directions of advisory: 1) work with FIs on building an energy efficiency product, 2) build relationships between energy auditors/project developers/vendors and FIs, 3) market awareness, and 4) public policy. The first two are focused on private good and account for approximately 65% of our allocated resources, and the last two concern public good and use about 35% of our resources.

### Market Assessment/Strategy Development

The program has started in an environment of very high energy intensity, but quite low energy tariffs. Since the market was just emerging as tariffs began to rise, there was a significant lack of awareness of and support for energy efficiency, which was a major barrier to developing an energy efficiency finance business. Therefore, the ‘public good’ elements of our Program have been essential to developing the ‘private good’ elements and have significantly increased our authority on the market as energy efficiency has become more topical.

In addition to tariffs and energy intensity, there were taken into account sector analysis (which areas had the most potential/lowest barriers), client focus (to whom did FIs want to lend), banking market realities (which potential FI clients would be interested and able to deliver), and market barriers (awareness, regulatory issues).

#### 1. Capacity Building in FI

The efforts have focused on enabling FIs to add value beyond lending money, securing adoption of sustainable energy finance as a core product in the FI, and achieving widespread adoption among the FI’s front office staff.

- Questionnaire for existing/potential projects
- EE Calculator
- Training on technologies
- Training on sales of EE to end users
- Exit map for FIs to evaluate progress on ten parameters (under development)

#### 2. Build relationships between auditors/vendors/developers and FIs

Catalyzing the market means bringing together the client, the technical solution, and the financing.

- Standardized IFC express energy audit format
- Standard format for initial technical consultation
- EE Calculator
- Joint seminars for end users involving FIs and vendors/PDs/auditors

- Initial quality control on audits
- Template for vendor finance agreement (in progress)

### 3. Market Awareness

The real barriers to energy efficiency in Russia have little to do with technology or financing, and much to do with awareness, communications and marketing. The Program closely involves partner FIs in this process.

- Survey of energy efficiency attitudes and practices at 625 medium size enterprises throughout Russia – first of its kind in Russia, now being replicated in 5 countries in the region
- Informational events: Seminars, business breakfasts, conferences, etc.
- Press: articles in business press and technical,
- Informational products: Success stories, technology guides (infra-red heating, biogas), sector studies (bakeries, dairies, foundries)
- Training for FI communications personnel on sustainable energy

### 4. Public Policy

Policy work increases the knowledge of the team of regulations and market conditions, informs the market and raises the profile of IFC.

- Major Study on Russian EE Potential, done with colleagues from the WB, is due to be released in September. Zoellick personally delivered the executive summary to Putin and Medvedev and discussed it in detail with each of them.
- The Program is actively in consulting the ministries involved in drafting new legislation on sustainable energy, often informing them of international best practice and what approaches would be most suitable in Russia.

### Results

To date, the partner FIs financed 59 projects with a total investment value of \$52 million and lifetime CO<sub>2</sub> emissions reductions of 835 000 tons. Due to the current financial crisis impacting also Russian banks, the demand for IFC funding is increasing. The program commitment target was revised up to \$200 million.

The following types of projects with defined eligibility criteria were financed or are in review:

#### 1. Industrial Process Equipment (37 deals financed)

**Criteria:** 40% reduction in energy consumption per unit of output, 5% ROI from energy efficiency cash flows

Examples of companies/projects: Bakeries, metalworking, printing, agricultural, woodworking, bottling, dairy, textiles, food processing, plastic, chemicals, building materials, confectionery, general manufacturing

## 2. Generic Energy Equipment (14 deals financed)

**Criteria:** 20% reduction in energy consumption per unit of output, 20% ROI from energy efficiency cash flows (projects considered generic energy equipment if the main cash flow from the investment is from energy savings)

Examples of companies/projects: boilers and heating systems, cooling and ventilation, motors, variable speed drives, lighting, compressors, pumps

## 3. Cogeneration (2 projects financed to date)

**Criteria:** minimum 60% heat utilization

Examples of companies/projects: Resort complex, producer of industrial gases

## 4. Renewables (4 projects financed to date)

**Criteria:** Always eligible if otherwise acceptable to FI and IFC

Examples of companies/projects: Small hydro, wind energy, wood waste utilization, production of wood pellets, boiler fueled by agricultural waste

## 5. Production of Energy Efficiency Products (2 projects financed to date)

**Criteria:** Reviewed on case by case basis to ensure that products meet or exceed norms of energy efficiency in the local market

Examples of companies/projects: Insulated building blocks for construction, windows

In 133 training events and 986 hours of advisory services more than 1,500 organizations were trained or consulted. 11 energy audit firms under contract and trained in IFC approach to working with financial institutions in order to sustain direct relationships between a bank and an energy auditor as provider of technical expertise.

The joint IFC/WB policy study was completed in June 2008, and World Bank President Robert Zoellick personally gave the executive summary to President Medvedev, Prime Minister Putin, and Finance Minister Kudrin during his trip to Moscow. The study was very well received since it will be in time to inform the creation of a national energy efficiency action plan, the development of which was commissioned by President Medvedev in June.

The awareness campaign "Save Energy" facilitated by the Program helped to achieve incremental growth of energy efficient lamps market by ~10mln units resulting in ~\$200 million of lifetime energy cost removed from economy and ~1,700,000 tons of lifetime CO2 emissions reduction.

6 client banks has participated in advisory services program for a fee with the total value of contracted fees up to \$175,000.

## **Lessons Learned**

Despite the fact that the program is still under implementation the following lessons and findings were formulated.

- A critical potential stumbling block for FI participation is the initial risk of taking on funds and not being able to invest those quickly – thereby potentially incurring significant participation fees. This needs to be addressed by a robust approach to pipeline identification and attention to examples of how projects can be developed and financed quickly.
- Bringing a financial institution through appraisal to investment can be a very lengthy process, so it needs to be started well in advance of investment decision.
- In order for the Program to work successfully with the Bank there needs to be a ‘champion’, a person designated by the partner FI to personally see that energy efficiency finance is a priority within the FI.
- Financial institutions need to build up energy efficiency as their financial product instead of selling it as an IFC program.
- Clients should be sought in the size segment of business where the financial institution is most competitive.
- In a rapidly growing economy, many companies are focused on investing in assets that will enable them to increase the quality and quantity of their output to take advantage of market opportunities. Therefore opportunities to improve energy efficiency through modernization of industrial process equipment are more likely to be attractive than investments in infrastructure. This is especially true when those infrastructure investments have a longer payback than those achieved by investments in production assets.
- In order to ensure a productive relationship with a financial institution, there are several key success factors: careful screening of potential clients to ensure a good fit, significant cost sharing (aligns interests and ensures high-level buy-in), and a memorandum of understanding that spells out expectations on both sides.
- To require cost sharing from advisory services clients is becoming a best practice and the RSEFP has begun to gradually implement this approach for both financial institutions and other clients. These contributions can be both in kind and in cash, and as a general rule of thumb our goal is recovery of 50% of direct costs. This kind of significant cost sharing will both ensure commitment and position advisory services so that they are properly valued by clients.
- A fee-based approach to providing advisory services to FIs is much more effective than providing services free of charge. First, charging fees requires that an official commitment be made on a very high level within the financial institution in order for the use of funds to be authorized. This inevitably leads to a

discussion within top management of whether or not the financial institution stands to benefit from this expenditure and what other resources need to be allocated. Second, the perception of the value of the services being provided is changed when fees are charged – if something is given away, its perceived value is greatly diminished. Top management is unlikely to set priorities and allocate internal resources to accompany the advisory services if they are considered to be of questionable value. Finally, a fee-based agreement elevates expectations and urgency on both sides, with the financial institution eager to get value out of their investment and the consultant to prove that the services rendered provide value.

### **III. China (CHUEE 1, 2, and 3, 2006 - ongoing)**

The China Utility-based Energy Efficiency (CHUEE) program is the last and the most advanced SE program in IFC portfolio. It is considered to be the first mainstream type of IFC investment via FI in the field of energy efficiency.

#### **Background**

Energy utilities, Energy Management Companies (EMC's) and equipment suppliers are primary marketing partners for the Project, acting as hubs and offering a “one-stop shop” for end-users to develop their EE projects. The utilities work with a network of EE equipment and service suppliers who can implement projects with end-users and with financial institutions. The Program also supports marketing and origination of EE projects with end-users through partnerships with banks and EE Suppliers independent of the utilities.

The Program has three core activities.

- 1) The Program provides capacity building in marketing and finance to strengthen the ability of partner utilities, FIs, and EE Suppliers to deliver EE investments. The present project entails a set of comprehensive TA activities to support IFC investment. Donor supported TA would be provided i) to participating banks, to improve risk management and EE financing capability, ii) to utility partners, to market the Project, build staff capacities and assist customers to prepare EE projects for financing, and iii) to energy equipment companies, to assist them in marketing their equipment in partnership with participating banks and utilities.
- 2) IFC provides a Risk Sharing Facility (RSF) designed to mobilize and support EE lending from local FIs to support the FIs to make loans to new target sectors, particularly to SMEs, by sharing in the credit risks of those loans that IFC/GEF funds will support. IFC provides TA to the partner banks to improve performance of the RSF.
- 3) The Program conducts an outreach and replication Program to share the Program's tools and methods with a wide utility audience, in order to recruit additional utility

partners (both gas and electric). The Program aims to establish partnerships with up to four utilities.

## **Results**

To date, 3 partner FIs has approved 70 loans with a total value of \$270 million and annual CO<sub>2</sub> emissions reductions of 6.2 million tons. 75 % of the project portfolio is concentrated in steel, cement, coking, and chemical industries. 87% of portfolio are energy efficiency projects, 10% renewable energy, and 3% cleaner production. The project types include waste energy recovery, process energy efficiency, boiler renovations, building energy efficiency, DSM measures, RE, etc.

An extensive partnership network was established comprising 311 partners including 1 utility, 1956 ESCOs, 87 equipment vendors, 17 industry associations, etc. The program has raised awareness of SE in financial sector, initiated changes in behavior of FIs, attracted other multilateral and bilateral institutions and donors trying to replicate the experience.

The Program has inspired the end-users to use the energy audits for new project identification, expanded business opportunities for ESCOs, engineering companies, and equipment suppliers and sellers and provided to them new financial tools including equity injection.

## **Lessons Learned**

- Advisory Services Agreement should be negotiated in the very beginning. CHUEE is an investment and advisory services combined product, while AS agreement was not included in the investment negotiation, then CHUEE missed good opportunities of signing TA contracts (on a cost-recovery basis) with its partner banks. In the future, accompanying more banks participating in CHUEE, we should have an AS agreement in place with each bank partner, to formalize and document advisory services to be provided by IFC and help ensure the partner banks to achieve goals with a clear roadmap with IFC.
- Mainstreaming Sustainable Financing in Partner Banks' Businesses is a key success factor. Having convinced partner banks' senior management the significance of sustainable financing was the first step. Helping mainstream and streamline sustainable financing in their core businesses at the corporate and strategic level leads to a top-down approach that has mobilized/stimulated all the banks' loan officers and product managers to learn and execute such businesses. IB senior management's open commitment to disbursing an EE loan portfolio of 10 billion RMB in five years and its fast growth of EE financing business is a good example. This helps build up the banks' long-term capacity of financing EE projects independently and strengthen their commitments in the future.
- Making full use of PAC members to promote EE financing. A Program Advisory Committee (PAC) and the annually-convened PAC meeting are helpful to CHUEE to promote EE financing in China. PAC members are good resource people for CHUEE to target right audience with their advice and suggestions.



Their attendance to the key events organized by CHUEE helped raise CHUEE's impact in addressing climate change challenges. CHUEE is trying to make full use of the relations and maintain them well for promoting sustainable financing in China.

## Annex 7: Summary of market assessment for sustainable energy projects

Description	Technologies	Market Size 2008
<b>A/C and Chiller Vendors</b>		
<p>Large energy users in the commercial sector find themselves in the need to replace ageing chiller units, which do not meet new energy utilization and environmental standards.</p> <p>In most cases, high O&amp;M costs due to the dramatic increase of electricity rates drive the demand for chiller replacements. In some instances, the need to phase out old refrigerants adds to the pull of the demand-side of this market.</p> <p>Chillers make up less than a tenth of the A/C market. The room air conditioners (RAC) take close to half of the US\$ 139 million market. The balance of the market demand is for split/package type A/C systems.</p> <p>While there are a few dominant players in the chiller market, several importers, assemblers and manufacturers push RAC and split/package type systems into the market, mostly residential and small commercial energy users.</p>	<ul style="list-style-type: none"> <li>chillers (screw, centrifugal)</li> <li>room A/C</li> <li>split/package type</li> </ul>	<p>US\$ 19 M (chillers) 59 M (room A/C) 40 M (duct-free split/package type 5 tons and below) 20 M (package type, above 5 tons) US\$ 138 M Total</p>
<b>Motor and Drive Vendors</b>		
<p>The new motor and drive technologies in the Philippines market today appear to be a favorite quick-fix SE solution of many commercial and industrial users.</p> <p>Water utilities have started to become a prominent buyer of new technologies, especially now that several water districts that are increasingly dependent on groundwater sources are now allocating 30-70% of operating budgets for energy related to supply and booster pumping.</p> <p>The estimated market size of \$ 28 M for this business segment may be on the low-side for two reasons. First, the dominant players have difficulty sizing up market shares of the minority players. Second, industry appears unable to size up the market if the auxiliary technologies of compressors and pumps are to be included.</p> <p>Majority of the projects under this segment were financed internally by the commercial/industrial end-user. Interestingly, one VFD retrofit project proposed for a mall (in the attached case</p>	<ul style="list-style-type: none"> <li>high efficiency motors</li> <li>variable speed drives (VSD), variable frequency drives (VFD) and other motion control technologies</li> <li>high efficiency pumps, compressors</li> </ul>	<p>US\$ 15 M (LV motors, excl pumps/compressors) 5 M (MV/HV motors, excl pumps/compressors) 8 M (drives/motion control) US\$ 28 M Total</p>

<p>studies) is to be financed through a performance contracting arrangement.</p> <p>The biggest users of medium/high voltage motors are the cement manufacturers. The petrochemical industry also takes a significant share of the high voltage motor demand. On the other hand, A/C systems of commercial establishments are now being retrofitted with low voltage motors and drives as part of end user SE programs.</p> <p>The confidence to attain savings targets and motor installation issues are listed as common project risks.</p>		
<b>Energy Management System Vendors</b>		
<p>Although having been utilized by many commercial and industrial establishments for many years now, building management systems (BMS) still have to build up for itself a credible reputation of effectively being able to generate energy savings for the end user. BMS vendors complain that end users are unable to fully appreciate the capability of BMS technologies because in most cases, the systems are under-utilized (i.e., limited to one or two controlled loads in the building). Even more frustrating for the vendors, is the lack of expertise of end-user operators, particularly in optimizing the energy-saving potential of BMS installations.</p> <p>The BMS market is nevertheless of significant size, with players' estimates ranging from \$ 4 - 10 M. High-quality brands include Johnson Controls and Honeywell, represented in the country by two independent organizations for each brand. There are several other less-known brands brought into the country market by smaller importer-distributors.</p> <p>BMS projects are either procured with internal funds of the end user or through performance contracts with the vendor/ESCOs. In one case study, installation for an ESCO-led energy efficiency program has recently been commenced for an ageing shopping mall complex. The BMS retrofitting accompanies other SE technologies in this performance contract.</p>	<ul style="list-style-type: none"> <li>building management systems (BMS), facility management automation system (FMAS)</li> </ul>	US\$ 4-10 M
<b>Thermal Energy Storage (TES) System Vendors</b>		
<p>The technologies related to ice thermal storage and off-peak cooling are quite new in the market. Although one ongoing installation was reported, no completed project equips the</p>	<ul style="list-style-type: none"> <li>thermal energy storage (TES) systems, off-peak cooling (OPC)</li> </ul>	US\$ 60-90 M

<p>commercial and industrial users with the reliability of historical results in the country. Also, economic returns of a typical TES project remain uncertain, because the Philippine government still has to implement the guidelines for time-of-use (TOU) metering. Only until such time that TOU electricity rates become more predictable, will buyers be able to estimate savings and payback more reliably. So far, the Ayala group (Ayala Land and its Ayala Property Management Corporation) seems to be the most determined pioneer user of this technology.</p> <p>For 2006, industry players believe that a low-side target for the TES segment is hefty \$ 60 M. This could balloon to as high as \$ 90 M in the following years.</p> <p>The major chiller suppliers claim to have the technical capacity to offer and install thermal energy storage (TES).</p>	technologies	
<b>Housing Developers</b>		
<p>So far, only one housing developer has been known to differentiate its residential projects in the market of medium cost units by introducing energy-saving homes. This housing developer, has launched projects south of Manila that boast of roof and wall insulation technologies and increased fenestration that permits better natural ventilation and daylighting.</p> <p>The top management of this housing developer believes that SE technologies have clearly created a niche of their own in the rapidly booming medium cost residential market, and that such differentiation will create a new demand from the buying market.</p>	<ul style="list-style-type: none"> <li>• roof panels with built-in insulation</li> <li>• sandwiched wall panels (concrete-steel-polystyrene)</li> <li>• cast-in-place reinforced concrete panels</li> <li>• increased fenestration (enhanced ventilation and daylighting)</li> </ul>	
<b>Agribusiness and Biomass Energy Generators</b>		
<p>With barriers to renewable energy development gradually being eased in the Philippine market, a small number of developers have started to propose biomass energy plants to generate heat and/or power. Sugar cane, rice husks, bagasse and other agricultural byproducts are typical fuels. Alternative fuels such as ethanol from sugar cane are now being seriously considered to fuel proposed cogeneration plants.</p> <p>Many of the RE projects have sought soft project financing from GFIs like the Development Bank of the Philippines. These developers are likewise considering parallel applications for CER purchases through clean development mechanisms.</p>	<ul style="list-style-type: none"> <li>• biomass cogeneration</li> <li>• biomass heat generation</li> <li>• ethanol-fed power generation</li> </ul>	

Industrial Sector		
<p>In 2003, electricity consumption of the industrial sector in the Philippines practically matched that of the residential sector with just over 15,000 GWh purchased from the grid.</p> <p>Due to a displacement of industrial output by the services sector in the coming decade, the annual growth rate will decline from 2.82% in 2005 to 2.15% in 2016. This will nevertheless cause the year-end industrial consumption to grow from 15,921 GWh in 2005 to 20,717 GWh in 2016. A similar study shows that the peak demand contribution of the industrial sector will conservatively from 4,109 MW in 2005 to 5,467 MW in 2016.</p> <p>Very roughly, the (high-side) potential of the industrial sector to shed off wasteful electricity consumption during the period 2005 to 2016 can amount to \$ 1.47 billion using January 2006 prices. This means that the industrial sector can hypothetically finance an average of \$ 134 million/yr in energy efficiency improvements out of estimated savings through 2016.</p>	<ul style="list-style-type: none"> <li>• heat recovery</li> <li>• heat loss reduction</li> <li>• high-efficiency equipment retrofits</li> <li>• controlled/automated energy management</li> <li>• daylighting</li> <li>• biomass heat generation</li> <li>• biomass power generation</li> </ul>	<p>796 GWh potential reduction (2005)</p>
Commercial Sector		
<p>Compared to the industrial sector, the commercial sector is aggressively growing by over 4% annually. Although this bullish growth propelled by the proliferation of shopping malls in urban and suburban zones will taper off to 2.8% in 2016, the commercial sector will grow from 11,994 GWh in 2005 to 17,126 GWh in 2016 in terms of electricity consumption, and from 1,888 MW in 2005 to 2,758 MW in 2016 in terms of peak demand contribution.</p> <p>For purposes of sizing up the market for SE projects in this business segment, the (high-side) potential of the commercial sector to shed off wasteful electricity consumption during the period 2005 to 2016 can amount to \$ 1.17 billion using January 2006 prices. This means that the commercial sector can hypothetically finance an average of \$ 107 million/yr in energy efficiency improvements out of estimated savings through 2016.</p> <p>Dominated by projects of shopping malls and hotels, the case studies gathered in this assessment showcase comprehensive SE programs and isolated VFD retrofits for A/C systems. Low-cost projects often yield payback periods less than 12 months. Equipment retrofits</p>	<ul style="list-style-type: none"> <li>• A/C system retrofits</li> <li>• building management systems</li> <li>• high efficiency LV motors and drives (VSD/VFD) for pumps, fans and A/C system</li> <li>• high efficiency linear fluorescent lighting</li> </ul>	<p>600 GWh, potential reduction (2005)</p>

will need 1-3 years to recover project costs out of energy savings. Other equipment retrofits (such as chiller replacements) are showcased under the other business segments of this study.		
<b>Electric Cooperatives</b>		
<p>Rural electrification is one of the pro-poor priority programs of the Philippine Government aimed at providing adequate, affordable and reliable energy services to improve the quality of life in rural areas. Rural electricity distribution in the Philippines is mainly handled by about 119 electric cooperatives nationwide characterized by weak operational performance, limited technical expertise, high systems losses and poor profitability. These factors have resulted in the vicious cycle of poor EC financial performance mainly caused by inefficient systems, which is a function of the inability of ECs to access financing for systems improvement, brought about by lack of investor and creditor confidence resulting from the poor financial performance of ECs. Opportunities exist to provide finance directly to the ECs through the banking system which if twinned with TA to address the systems losses (traditionally in the 20% range) could result in significant energy savings.</p>	<ul style="list-style-type: none"> <li>• Transmission and Distribution Upgrades</li> </ul>	

## **Annex 8: STAP Review and IFC Response**

**17 March 2006**

**Comments on “Philippines Sustainable Energy Finance Program,” GEF Project Brief, March 2006  
IFC/GEF Project**

**William Chandler, President, Transition Energy and Adjunct Professor of International Policy, Johns Hopkins University School of Advanced International Studies**

### **Scientific and Technical Soundness of the Project**

This proposed IFC/GEF program compares favorably with a handful of projects which this reviewer ranks among the best of their kind. The IFC brings an unusually well-informed, analytical, and logical set of solutions to well-documented and difficult market barriers which are impeding investment in and development of sustainable energy technologies in many countries, including the Philippines. The proposed project is sound because it is based on advanced scientific and economic knowledge and understanding, as well as substantial real-world experience.

The proposal document describes a program which this reviewer finds appealing based on the Philippine’s economic and financial needs for sustainable energy development. The proposal addresses barriers which appear to be serious and substantial. The proposed intervention has a good chance of success. The proposal is economically and financially sound, and addresses well-known problems with an approach the IFC is well-placed to address.

### **Global Environmental Benefits of the Project**

This IFC/GEF proposal addresses sustainable energy development and has a reasonable chance of successfully leveraging energy efficiency investments. The energy efficiency and renewable energy efforts it would promote would reduce the environmental burden of energy use while providing a better foundation for economic growth. Energy causes some of the most severe global and local environmental pollution, and clean, efficient energy production offers an alternative to underdevelopment and pollution. This project is especially attractive because it seeks to leverage market mechanisms which can provide benefits on a continuing basis even after the IFC/GEF project money itself has been consumed.

The proposal targets a country with very low levels of energy development, high costs, and potentially rapid growth. For this reason, it could provide a success story which could be usefully replicated throughout the Pacific Rim.

## **How the Project Fits Within the Context of the Goals of GEF, Its Operational Strategies, and Program Priorities**

This project will provide reproducible and institutionally sustainable benefits to help mitigate global climate change, a key mission of the GEF. It meets the incremental cost or additionality test needed for GEF intervention by addressing barriers to market development which will likely not be overcome without intervention of the type proposed. The project promises to be sustainable by motivating the private sector to adopt a potentially profitable business model to promote energy technologies which are essential to sustainable development.

### **Replicability of the Project**

The project proposes technical assistance that is needed to overcome barriers to energy-efficiency and clean energy investment throughout the world. The techniques to be applied in this project can be replicated throughout the developing world.

### **Sustainability of the project**

The IFC proposes a market-based problem-solving approach. Only market actors in the Philippines can provide, long-term, the labor, capital, and skill to implement sustainable energy technologies. A great strength of this and similar IFC programs in Eastern Europe, China, and Russia is this market orientation. It is a model for all multilateral institutions to follow.

### **Additional General Comments**

- Electric power is an appropriate focus for this proposal because the country experiences extraordinarily high power prices and relies heavily on power as an energy carrier. And because electricity sector reform has been initiated to some degree, electric power conservation may be more likely to succeed than in some other countries.
- While this proposal reminds this reviewer of other innovative IFC/GEF programs in other nations the document itself does not make as strong a case for the proposal as it could. That is because the writing distracts from the merits of the proposed project with poor organization and ungrammatical constructions. The organization of the document is not straightforward and does not adequately describe the experience which the IFC could bring to bear on the energy situation in the Philippines. The description of the IFC's ability to leverage and integrate on-going and complementary programs is confusing. This reviewer believes that the document does, in fact, present a much-needed and attractive program, one that deserves better articulation. That is—the piece needs line-editing and restructuring. With one or two additional drafts, this proposal could be one which this reviewer could strongly endorse.



**IFC RESPONSE:**

*IFC appreciates and agrees with the reviewer's comment. The draft reviewed by the STAP reviewer was an early stage draft which was more an aggregation of material developed during project development by the project team rather than a unified document which effectively told the story of the project's development through a process of private sector engagement and market assessment. The subsequent drafts of the document seek to provide this story, while also describing the substantial body of IFC experience in the Philippines and elsewhere which has informed the development and design of the Program. The current Project Brief also elaborates on the process IFC has gone through to work with management of parallel programs active in the Philippines which also support sustainable energy market development, in order to identify specific collaborative roles and points of cooperation in order to leverage the IFC program's impact in the market.*

**Detailed Comments**

Note: Section number references below refer to the proposal document draft provided to the reviewer.

**Section 1.1:**

The section states that "...the required investment in energy efficiency over the 10 year period 2004-2013 to be....\$1.34 billion." This number seems too small in a country that already uses \$10-15 billion per year worth of energy and is experiencing very rapid growth. Because the number seems—and probably is—too small, it undercuts the rationale that this proposal ranks as a high priority. Perhaps more context for the number could be provided, or perhaps a different, more compelling indicator of need could be offered. (Also, the number is "suspiciously precise." Who can reliably make two-digits analyses of such uncertain sums?)

**IFC RESPONSE:**

*The \$1.34 billion figure (more appropriately described as \$1.3 billion) referenced in the review draft of the Project Brief comes from the Philippines Department of Energy's Philippines Ten Year Energy Plan. It references the energy efficiency sector component of the necessary investment across the energy sector that would be necessary to balance available energy supply and demand in the Philippines economy. The DOE numbers for aggregate investment in sustainable energy – including renewables and efficiency – which is the focal point of the IFC Program, is a rather more substantial figure of US\$4.8 billion. IFC believes that, while market conditions are favorable to enable substantial investment in the sector (including high, and rising, energy prices, manageably low interest rates, and inadequate energy supplies, the needed investment will not be forthcoming without market interventions to stimulate commercial capital flows. This is the situation which inspires IFC's interest in delivering the proposed Program in the Philippines. For its part, the Government of the Philippines is seeking to put in place the proper policy framework to enable the necessary levels of private sector investment to occur. Strategies to mitigate a repeat of the power crisis conditions which*

*crippled the Philippine economy in the 1990s-- are the primary focus of the Philippines energy policy environment at present. The DOE target of \$1.3 billion is directly linked to the level of shortfall currently predicted. The apparent precision of the number is an artifact of that analytical prism as well.*

### **Section 1.2.(i)**

The text cites “rising” prices but not “high” prices. Buried elsewhere in the proposal itself is the strikingly high price of electric power in the Philippines (US\$0.16/kWh). This number could be brought forward to emphasize the pain already experienced by the consumers of the host country, and an additional strong rationale for the proposal.

#### **IFC RESPONSE:**

*The reference to extraordinarily high electricity tariffs – and their role in providing a strong incentive and excellent economics for energy efficiency and alternative energy investment – is now carried forward in Section 1.2.*

The substantial problems of energy insecurity and shortages could be emphasized in this section.

The following words excerpted from the proposal cite a key barrier which the proposal says the project would address:

“A limited number of projects [*sic*] developers who, though technically competent, lack the financial and commercial acumen as well as relationships with the banking sector to structure “bankable” projects.”

This barrier is, indeed, a key one. Providing technical assistance to overcome this barrier is an important reason—a main reason—to support this proposal. This strength of the proposal could be emphasized more than it currently is, perhaps by highlighting it in the summary.

#### **IFC RESPONSE:**

*As the reviewer suggests, IFC has drafted a more cogent summary which, among other improvements, now emphasizes the key barriers and the Program strategy’s response. These include TA support for project developers with limited financial acumen and the key market drivers associated with the energy security and impending power shortages which provide a common focus for policy makers and market players.*

### **Section 2.2.**

It would be useful to explain briefly why interest rates are so high in the Philippines (country risk?), and whether these high rates might not overwhelm the chances of the proposal’s success.

The following, bulleted item appears on page 8 and illustrates a typical example of poor

editing throughout the text: “Implementation of time-of-use tariffs, which hourly pricing” This reviewer knows what the author meant to write, but less-knowledgeable reviewers will have no idea what this is all about.

A set of bulleted items on page following (that is, on page 9) is not parallel in structure, and distracts the reader.

**IFC RESPONSE:**

*Interest rates in the Philippines are not extraordinarily high, nor are they at levels which, in IFC’s experience in other markets, would tend to significantly temper investment in energy efficiency. The current lending rates for SME-type borrowers (non “blue chip” corporates) is presently in the range of 10-12% per annum. At current energy prices, the type of energy efficiency investment projects identified during pre-appraisal, are quite attractive and viable. IFC has corrected the writing (now in in Section 2.3) to more clearly explain this situation. Similarly, the reference to time-of-use tariffs has been clarified. Additionally, the set of bullet items has been restructured to ensure clarity.*

**Section 2.5**

Given the low energy-efficiency investment needed, at least as cited by the government in the introduction of the proposal, this reviewer wonders whether lack of government understanding of the magnitude of the problem and the opportunities for renewable energy responses should now be listed as a “barrier”?

**IFC RESPONSE:**

*The approach taken in the Program is inherently market-based. No specific government action or policy initiatives are necessary to enable IFC’s partner banks to develop sustainable lending businesses focused on energy efficiency and renewable energy investment. Current energy prices are high enough to enable substantial private sector investment under current conditions. Furthermore, while the government-sponsored estimate of energy efficiency investment necessary to avoid the predicted power shortages is relatively “low” in the reviewer’s assessment, it is not a trivial figure, and represents a challenging level of investment. It does not, however, represent the full level of economically viable investment which might be supported by the private sector.*

**Table on Page 12 (“Barrier/Suggested Intervention”)**

This table is thoughtful—exceptional in the field, really—and reflects one of the strengths of the IFC—deep insight into and understanding of the problems being addressed.

**Section 2.8**

More could be said here about the strengths of the IFC’s programs in Eastern Europe and China and how IFC experience, gained from programs similar to the one proposed here,

enhances the chance of success in this effort in the Philippines. While there is an appendix on this IFC Eastern European experience, the proposal is written in such a way that misses an opportunity to present a more-compelling case that this proposal should be funded.

**IFC RESPONSE:**

*IFC has modified the text to reference the previous experience in the context of the proposed Philippines Program throughout the document.*

**Section 2.9 Complementary Energy Efficiency Initiatives in Philippines**

It is very good to have this section here—it is an important aspect of the logic of the proposal. However, the “alphabet soup” character of the paragraphs in this section does not well convey the nature and logic of the programs and why and how they are or would be complementary. The paragraphs could do a better job of giving the reader a sense of how the IFC could leverage its existing assets.

**IFC RESPONSE:**

*IFC has modified the text to better explain the process of collaboration which IFC undertook with various Philippine program managers and the specific areas of cooperation and leverage which have been jointly identified and agreed with counterpart Programs.*

**Section 3.2 Component 1 - Providing FI with tailored financial products targeted at encouraging banks to underwrite loans to SE projects**

This section describes a key aspect of the proposal. It is very well-conceived, but, again, this section could benefit from an editor.

Table 3.1., in particular, is not clearly presented. The title of the table suggests that the table describes the range of specific types of technical assistance to be provided, but the items in the left-hand column, especially, are not types of assistance and their true meaning is obscure. For example, how is “Opportunities to Market Direct to End-Users” an example of an item in ‘range of technical assistance’?

**IFC RESPONSE:**

*IFC has edited and redrafted the section, as well as Table 3.1, as suggested.*

***Table 4-1 – IFC Operating Relationship with FIs (an interactive process)***

This table, in contrast to Table 3.1., is clear, well-presented, and describes a specific and useful set of tasks and activities.

### **Table 5-1: Summary of Project Budget**

The proposed budget strikes this reviewer as modest and reasonable. The proposed use of GEF funds in Table 5-4 seems logical and well-targeted.

The *incremental cost analysis* summarized on page 39 (as well as the “Matrix” presented in Table 5-5) seems logical and appropriate.

### **Section 6: Sustainability and Replicability**

This section is particularly well-done. For example, the draft states:

The first intervention will come in the form of a financing facility. This facility will provide FIs with tailored financing products, such as credit lines and partial guarantees, targeted at encouraging banks to originate and underwrite loans to SE projects.

The intervention described is, in this reviewer’s opinion, exactly what is needed, based both on theory (the literature) and experience (including IFC experience). The IFC is particularly well-placed to carry out the interventions described in this section.

### **Annex 4: Lessons from HEECP, CEEF and RSEFP**

The draft contains a note which reads “to be edited and enhanced,” suggesting that the draft was sent out prematurely. This “annex” describes IFC experience that is vitally important to the success of this proposed project. *This experience really ought to be brought into the main body of the text and described and amplified for the reader.* It would be hard for any non-specialist reviewer to have sufficient understanding and appreciation of the IFC’s particular value-added in this type of project without having the experience contained in this—buried and hidden—annex.

#### **IFC RESPONSE:**

*IFC has integrated the lessons learned from prior programs in the main text. The annex itself has since been edited, refined, and finalized with updated experience from the most recent IFC experiences in Russia, Central Europe, and China.*

### **Annex 6-2: Examples of Industry Specific Opportunities**

This reviewer believes that this list accurately reflects the many opportunities, but also wonders what this long laundry list needs to be included. It seems that this sort of thing is something that could be cited, illustrated with a few examples, but need not be listed in 6 or 7 pages of detail.

The same comment applies to **Annex 7, Examples from Market Research**. Both annexes 6 and 7 are so long the reviewer is reminded of the Lewis Carroll quote, “Nothing is quite so useless as a map on a one-to-one scale.”

To repeat, this proposal is technically solid, addresses important barriers, embodies delivery mechanisms which have been successful elsewhere, and deserves to be supported. This reviewer’s criticisms have mainly been about cosmetic matters.

[original signed by]

William U. Chandler  
17 March 2006

**Annex 9: Endorsement Letters**

Provided separately

## **Annex 10: Response to GEF Secretariat Comments**

### **GEF Review Sheet on Project Concept Note**

**June 12, 2003**

**IFC Memo Response on March 24, 2006 (as part of Project Brief submission)**

#### **SECRETARIAT:**

The Secretariat asked for analysis of the need for removing access to finance barrier for renewable energy/ OP-6 type investments.

#### ***IFC RESPONSE:***

In the time since the Secretariat's comments, the GEF has adopted a new set of strategic priorities. The Program addresses explicitly CC-2: "Increased access to local sources of financing for renewable energy and energy efficiency," which establishes access to local finance as a priority which jointly focuses on energy efficiency and renewable energy. In addition, in the time since the Concept was developed, IFC has gained extensive experience working with commercial banks in 7 countries in Central Europe and Russia. (See Annex 4 of Project Brief: Lessons from HEECP, CEEF, and RSEFP.) IFC's experience working with commercial lending institutions in these countries demonstrates clearly that, from the perspective of the financial institutions, the distinction between energy efficiency and renewable energy is not relevant. Their focus is on lending money to transactions which have acceptable credit profiles. Further, the technical assistance approaches taken in developing the lending market and creating dealflow is similarly adaptable to market conditions and able to equally support either efficiency or renewables transactions.

In the Czech Republic, for example, IFC's FI partners were initially attracted to the energy efficiency project finance market by the market opportunity, their ability to move into more lucrative sectors, and the credit profile they learned to understand and manage. With experience lending for energy efficiency developed through collaboration with IFC under their belts, their subsequent attraction to renewable energy emerged as regulatory reform created a substantial pipeline of renewables transactions for which the same marketing, credit analysis, deal processing, and structuring principles and approaches were relevant. Thus, a diversified portfolio of energy efficiency and renewable energy projects has now developed in the IFC/GEF CEEF Program portfolio. This has informed IFC's approach to project development in Russia, China, and now the Philippines, where the program focus is more broadly on "sustainable energy", with the technology focus defined by market forces, rather than IFC pre-judging where the Carbon mitigation investments will emerge.

#### **SECRETARIAT:**

CEEF implementation lessons should be evaluated and incorporated into the project design.



*IFC RESPONSE:*

IFC has fully integrated the lessons learned in CEEF in the Program design. These lessons are elaborated both in Annex 4 and throughout the document. The key lessons incorporated affect Program design, including operational structures, and the financial product provided to FIs. These include:

1. the Program implementation arrangements – where IFC makes use of existing field-based technical assistance facilities to implement the program (rather than establishing new stand-alone project offices as were used in CEEF);
2. the streamlining of the guarantee product to use portfolio approaches and very limited first loss exposures; This provides a very valuable product to the FIs, enables maximum leverage of the GEF resource (reducing the amount of guarantee resources needed to leverage IFC and FI finance), and allows IFC to defer credit decisions to the FI, thus reducing operation costs and transaction time for the FI;
3. the delivery of technical assistance to FIs through dedicated market specialists who are co-located in the partner bank's facilities; This more effectively integrates sustainable energy lending orientation in the bank, helps build a sustainable impact in the bank, and promotes cost-sharing with the bank.

*SECRETARIAT:*

Given the large number of energy efficiency projects for the region, presented by World Bank Group, the Secretariat asks WB and IFC to develop a strategic framework for the portfolio.

*IFC RESPONSE:*

The World Bank Group has undertaken several exercises since the time of the Concept Note acceptance which are directly responsive to this request from the Secretariat. The most prominent was a comprehensive World Bank study of the portfolio of World Bank Group energy efficiency program efforts which identified what has worked and what has not worked. Based on the results and impacts of the portfolio, the report laid out a pathway for formulating market interventions going forward which has served as a strategic planning document for the World Bank Group..

In addition, the World Bank undertook comprehensive post-program market impact evaluations of four landmark GEF programs implemented over the past 12 years: the WB/GEF Ilumex Project; the WB/GEF Jamaica DSM Project; the WB/GEF Thailand DSM Project, and the IFC/GEF Poland Efficient Lighting Project. This report also defined trends in what has worked and what has not worked. By looking at long-term sustained market impact several years after project conclusion, the study asserted a package of guidelines which inform the World Bank and IFC strategy for leveraging GEF resources to achieve sustained market impact.

IFC's comparative advantage and role is different to that of the World Bank, thus indicating a distinctly different strategic approach and focus to the sector. Information sharing between the two sister organizations will continue to inform the approaches taken

by both, and we will continue to build on the cooperation that has emerged in our shared assessments of our experience to date.

## **GEF Review Sheet on Project Brief**

**April 13, 2006**

## **IFC Memo Response on April 18, 2006**

This memo provides IFC responses to the comments from the GEF Secretariat on the Project Brief for the Project “Philippines Sustainable Energy Finance Program”. A summary table is provided below and the remainder of this document provides more detailed responses to GEF questions/comments.

### **SUMMARY OF RESPONSES**

<b>GEF Question/Comment</b>	<b>IFC Response</b>
1. Remove statement on country eligibility and climate change	Text Corrected.
2. Need to make the case that project meets OP6 requirements	Based on its experience in previous programs, IFC believes the program should be positioned to support sustainable energy, and let the market determine the allocation of resources between renewable energy and energy efficiency, which is often an artificial separation. See response # 2 in this document for more details.
3. Need to provide more details on financial offerings	Based on experience with previous program, IFC is aiming to retain flexibility in the offerings to FIs as needs not only vary by FIs but also overtime. See response # 3 for more details. During appraisal IFC will refine the details of the different options.
4. Need to explain how investments are translated into energy efficiency and avoided CO <sub>2</sub>	IFC provided additional details but notes it is using same methodology already used and approved by GEF to sustainable energy financing programs in Russia and China.
5. Need to explain how delivery of program will be more efficient	Based on experience with previous programs, IFC has refined and improved its delivery mechanisms, including (i) co-locating consultants in banks to expedite on-the-job training and deal origination and closing, (ii) partially charging for TA delivered, (iii) capturing synergies with other existing efforts (e.g. existing DOE programs), and (iv) leveraging IFC existing infrastructure in the country. See more details on question # 5.
6. On how to access IFC expertise and knowledge on sustainable energy financing programs	IFC (i) is setting up a “Centre of Excellence”, which will be a web-based hub of knowledge dissemination, and (ii) has undertaken an extensive outreach effort to share its experiences with other IA and stakeholders at large through conferences, workshops and BBLs. See more details on question # 6.
7. Need for separate M&E budget and plan in compliance with GEF requirements	IFC will develop a separate budget, and similarly to its other sustainable energy financing program will ensure it is compliant with GEF M&E requirements
8. Implementation cost are reckoned to be high	IFC believes that beyond fixed costs of project implementation, which vary little by country, GEF costs are falling proportionally. For instance in CEEF, GEF-funded guarantees of \$15MM leverage \$180MM in investments. In the Philippines, \$3MM of GEF-funded guarantees are targeting \$60MM in leveraged investments.
9. On developing with the WB a strategic framework for the region/country	IFC has consulted with the WB on its program in the Philippines and found the projects to be complementary. For additional details see question # 9
10. Relationship with DOE Philippines concerning implementation arrangements	DOE and the GEF Focal Point have offered IFC the option of having DOE as a co-implementing agency. While IFC intends to work closely with DOE, it cannot delegate its fiduciary responsibility arising from its commercial relations with the local banks. Hence, in order to ensure an effective operational implementation of the project, IFC has chosen to be the sole implementing agency. Documentation on the extensive IFC consultations with DOE on this matter can be provided upon request.

## DETAILED RESPONSES

### **1. On the statement about country eligibility noted by GEF on the “Country Eligibility” session**

IFC will correct the incorrect statement noted by the GEF Secretariat.

### **2. On GEF’s request that only if a reasonable case can be made that improving “access to finance” for RE opens a large market, OP6 type investments should be eligible under this project.**

IFC’s proposed project design reflects lessons learned from its credit facilities in other countries. That experience clearly indicates that – from the perspective of commercial banks and project developers -- the distinction between “efficiency” and “renewables” projects is an artificial one which does not relate to how projects get financed and developed. *The project objective is to internalize a broad understanding of lending opportunities associated with clean energy, rather than to focus on specific technologies or applications.* This is consistent with the commercial realities of banking as well as the dynamic nature of energy technologies and market opportunities, which will inevitably change over time. Consequently, the project does not try to define up front the risks and market opportunities artificially separating renewables and efficiency.

A further difficulty in attempting to make this distinction is that some renewables transactions bear closer approximation to the profile of “efficiency” deals than they do to other renewables projects. A clear example of this is a cogeneration project which utilizes biomass fuel – such as the biomass cogen projects supported by CEEF in both the agriculture and the wood products sectors. In those projects, a readily-available biomass fuel source (renewables) enabled a cogeneration plant (efficiency) to achieve superior economics. From the perspective of the project developer and the bank, the source of the fuel was little more than another variable in the project economic analysis. Their approach to the project, and the fundamental conditions in the market coupled with IFC’s TA support and risk sharing instrument, enabled the deal. The investment was not enabled by a focus on either renewables or efficiency, but rather by IFC’s collaboration with project developers and banks to develop economically-viable projects which reduce greenhouse gases.

In the case of the Philippines, IFC has met with banks who have seen both efficiency and renewables deals. In these cases, the banks don’t categorize or react to the emergent opportunities in distinct renewables/efficiency categories. Rather, the Philippines banks have sought IFC support to: a) understand the technical and market risk profiles of these deals; b) provide a risk-sharing product which enables them to build a portfolio despite a lack of experience upon which to base their credit

assessments and pricing. In determining an opportunity and defining their needs they make no distinction between energy efficiency and renewable energy. Further, the policy environment in the Philippines for both renewable and energy efficiency is quite vibrant, as the government tries a combination of policies to reduce dependency on fossil-fuels and manage energy costs. While energy efficiency provides a more immediate opportunity, it is expected that the regulatory and market conditions for renewable energy in the Philippines evolve rapidly in the coming years. Hence, it would be efficient to ensure the project is positioned to support renewable projects, should the market so demand.

Finally, the market opportunities for a variety of different types of transactions emerge through a highly dynamic market. In the case of IFC's facility in Central Europe, regulatory changes during the second year of CEEF Program operations in Hungary and the Czech Republic have driven a steady pipeline of grid-connected renewables projects which were not part of the marketing plans of the participating banks during the first year of the program life. IFC's ability to be responsive to this newly emergent market opportunity has enabled the program to support the rapid development of an entirely new lending business line for the participating banks. A restrictive covenant which tightly defines project eligibility around a definition of "efficiency" would limit the program's effectiveness in stimulating a sustainable business in financing renewable energy projects which generate substantial greenhouse gas benefits.

### **3. On the fact that a range of options is given concerning the project's financial offerings, but it is not clear what activities will be undertaken by this project.**

IFC considers the inclusion of this flexibility to be an important design feature. However, more could be said about the process by which eligible options will be identified and selected.

A clear lesson learned from IFC's prior credit facilities is that changing market conditions creates changing market needs. The financial products (eg, guarantee, credit line, performance bonus-based credit instrument) required by the market tomorrow will predictably be different than the one which the market requires today. A project which pre-determines and limits its product offering into a market over a four or five year period is guaranteed to miss opportunities, and face either holding an irrelevant product offering or distorting the market by offering a more substantial intervention than the market requires – thus also reducing the leverage available from a more finely-tuned and market responsive product.

Another clear lesson learned from IFC's experience administering GEF credit facilities is that a tightly-defined product requires multiple program adjustments in order to embrace adaptive management and maximize program effectiveness. If the program changes require GEF approval at each interval, then the process is time-consuming, expensive, and doesn't allow the program management to be timely and responsive to commercial interests in the market, thus impairing the program's

credibility and relevance to the private sector. GEF's direction to the IFC in the case of CEEF is that these program amendments should be greatly limited in the future. The only way to do so is to build greater flexibility into the program design to allow IFC to adapt the financial product offerings to the market, within the constraints of certain GEF-approved criteria related to cost-effectiveness, sustainability, and leverage.

During appraisal, IFC will provide details about the initial product offerings, based upon negotiations with banks. These negotiations cannot be initiated prior to work program inclusion. Without an acceptable level of certainty that the additionality associated with the GEF funding will be met, IFC does not have grounds to enter into good-faith negotiations with banks regarding the IFC co-financed offerings. During appraisal, IFC will also establish the parameters and criteria under which any future product offerings would be provided in response to market developments.

**4. On GEF's request for a more clear explanation of how investments are translated into energy savings and CO2 avoided.**

The reduction in CO2 emissions from the program has been calculated through four main steps.

Firstly, the amount of investment to be stimulated by the program has been estimated based on the preliminary market assessment carried out during project development and the discussions with financial institutions. Secondly, the total revenues needed to capital costs, operating and maintenance, and management costs have been calculated. This assumes that 100% of the costs can be covered by energy savings. Thirdly, the needed revenues are divided by the average energy prices to determine the level of energy savings required to cover project costs. This was then compared with expected savings from projects identified during the market assessment. Finally, the CO2 emissions associated with the energy savings has been calculated based on average emissions per unit of energy saved (using Philippine Government statistics).

This methodology has been used and approved by the GEF SEC for WB/IFC programs CEEF, Russia Sustainable Energy Finance Program and CHUEE.

**5. On the request for an explanation on the more efficient delivery model that the Philippines project will employ.**

IFC implementation efficiencies, based on past experience and program modifications, derive from several innovations:

1. Delivery of TA – energy efficiency banking specialists co-located with the participating FIs provide a locus of concentrated product development and delivery within the banks; this creates a focused effort by the banks and cost-effectively builds sustained capacity within the bank to deliver sustainable energy finance.

2. Bank co-financing of the TA delivery, including co-financing of an EE specialist co-located with participating banks, ensures that only TA which is of direct and immediate value to the banks will be undertaken; banks won't pay for TA services which aren't of value to them.
3. Performance bonuses will be piloted in the Project as a way to more highly leverage the GEF funds by making cost-sharing payments to the banks contingent upon bank delivery of project financing according to volume and quality criteria.
4. The Philippines DOE's substantial ESCO development effort presents an important synergistic effort which does not show up in the budget directly as co-financing, but which provides the program excellent leverage.
5. Based on experience with prior programs, IFC has moved away from creating specialized single-purpose offices to administer the program implementation and TA. Building on the model piloted in Russia, and further evolved in China, IFC will administer the program through its regional TA management offices (the Private Enterprise Partnership) in Manila and Davao. The administrative infrastructure, diverse expertise and TA / project management capacity in this existing facility provides a more efficient delivery channel for the program.

**6. On how one can access the information and expertise developed through IFC's multiple credit facilities to support replication**

IFC has established a multi-faceted effort to disseminate information and lessons learned from its substantial experience in the field.

1. The Centre of Excellence, administered by the CEEF team in Hungary, is the hub of information dissemination in Central Europe. In addition to providing consultations and program advice to program managers both within IFC and at other GEF implementing agencies in the region, the Centre will host a workshop in Central Europe in the fall of 2006 to focus on lessons learned with immediate relevance to earlier stage programs in the region.
2. IFC has established a substantial communications capacity which has begun to produce multiple case studies in both written and video form focusing on sustainable energy finance. These products are available on-line and target both other program managers as well as the popular press, with uptake by the press globally.
3. IFC sustainable energy finance specialists have become regular participants in global energy finance forums during the past two years, including presentations in the Netherlands, Germany, France, Austria, China, Russia, and the US, featuring the IFC credit facility experience.
4. IFC has shared its expertise and experience in sustainable energy finance facilities with other IAs and multi-lateral agencies both directly (conducting workshops at the Dev't Bank of South Africa and at the Asian Development Bank), and through the G-8 process, where IFC's leadership on sustainable energy finance has been an important part of the strategy and approach being developed in the G-8 process.
5. IFC will amend the Philippines Project to include a specific "lessons learned in sustainable energy finance" guide document product. The guideline will detail

the lessons learned in other programs both to inform the Philippines team and the project partners, but to be used by other institutions seeking to replicate the IFC experience in other countries.

**7. On the need to have a separate M&E budget for the project (currently is part of the budget for consultants) and to ensure the M&E plan complies with the GEF requirements**

IFC will provide a separate M&E budget. We are also reviewing the Project Brief to ensure that the M&E plan conforms to M&E policy of minimum requirements at WP inclusion. The M&E plan represents a highly-developed practical model for M&E of credit facilities, based on approaches developed and refined in prior IFC programs. We will review the proposed plan to ensure that all GEF requirements are met

**8. On the fact that the costs of project implementation are judged by the GEF Secretariat to be high.**

IFC would like to understand the basis for the Secretariat's assessment of the project costs. What is the basis for determining cost-effectiveness? Based on IFC's assessment of other projects implemented by other IAs, the costs to deliver this program are low and reflect continued efficiency gains.

1. GEF funds are only used for additional costs – those not fundable from other sources. IFC has structured a program which relies on substantial co-financing to support the direct costs (implementation, TA, guarantees) of the program and which leverages substantial investment.
2. The GEF funds used for guarantee/credit enhancement are leveraged in two ways: a) with direct IFC investment; b) with highly leveraged guarantee structures, including portfolio-based first-loss guarantees expected to be less than 5% of the debt leveraged.
3. The GEF funds required relative to the proportion of investment financing leveraged is quite low.
4. The GEF funds relative to the program's leverage has substantially fallen over time. For the CEEF, GEF provided \$15MM for guarantees to leverage up to \$180MM in investments, whereas in the Philippines program \$3MM in guarantees are expected to leverage \$60MM in investments.

The Secretariat's comments reference the \$.5 million allocated for performance bonuses in speaking about operating costs. In fact, the performance bonus is a form of credit enhancement whereby the bank receives the payment as an offset to marketing costs and an enhancement to risk-return based upon the bank's success in originating new loans. The bonus is used by the bank as part of the credit enhancement structure and is not an operating cost of the program.

**9. On GEF's request at pipeline entry that IFC assess lessons learned and develop a strategic framework across the WB Group for the portfolio in the region.**

IFC has described the process which it undertook in collaboration with the Bank in response to the GEF request. Please see Annex 10, where the effort undertaken to date has been described.

### **10. On the issue of co-implementing the project with DOE Philippines**

IFC has held extensive consultations with DOE Philippines concerning the project. These consultations evidenced a number of opportunities for collaboration in promoting markets for sustainable energy and IFC and the DOE have agreed on cooperating on a number of specific areas, e.g. capacity building and ESCO industry development (IFC can provide at GEF's request all the communication on this matter). Due to these potential for collaboration, DOE's Secretary has not only supported the project, but also offered DOE as a potential co-implementer of the project, noting however that such co-implementation arrangements should take place only if warranted. In that same context, the GEF Focal Point for the Philippines suggested that IFC consider DOE as a potential implementation partner.

IFC reviewed the opportunity to co-implement the project with DOE, and while it intends to engage in extensive collaboration with the DOE, it found that a co-implementing arrangement would not be warranted. The main reason for such assessment is that IFC will have to, as a core component of the program, establish commercial relationships with commercial banks, including credit lines, and/or guarantees and as such IFC will have fiduciary responsibility towards the funds it approves and disburses. This fiduciary responsibility cannot be shared with a 3<sup>rd</sup> party. Hence, for an appropriate operational implementation of the project, IFC has to be sole implementing agency.

While the GEF focal point did not request the co-implementation arrangement as a pre-condition for endorsement, IFC sees in DOE a key partner in the project and will at appraisal seek to establish specific plans for collaboration and maximize the many synergies between IFC's project and DOE's effort on sustainable energy.

### **GEF Requests on Bilaterals on May 19,2006**

This table indicates where changes were undertaken in the Project Brief to reflect the bilateral discussions with GEF SEC on April 19, 2006

<b>GEF Question/Comment</b>	<b>Changes in Document</b>	<b>Doc Section</b>
11. Remove statement on country eligibility and climate change	Text corrected	n/a
12. Need to make the case that project meets OP6 requirements	IFC explanation provided and accepted in bilaterals documented in "Annex 10 Response to GEF Secretariat Comments"	Annex 10 of Project Brief
13. Need to provide more details on financial offerings	Provided detailed on financial products under consideration	Section 3.2 of Project Brief. Also



	Included language on core criteria for final product selection and structuring	in Executive Summary included details on products and criteria for selection
	Included language clarifying IFC's fiduciary responsibility	
14. Need to explain how investments are translated into energy efficiency and avoided CO2	Included language explaining how investments are translated into energy efficiency and avoided CO2. Noted it is methodology follow that applied in previous programs and approved by the GEF	See Annex 3 ICA in Project Brief. Also included in Annex in Executive Summary
15. Need to explain how delivery of program will be more efficient	Included explanation of sources of increased efficiency in delivering program in the Philippines	Section 4.3 of Project Brief
16. On how to access IFC expertise and knowledge on sustainable energy financing programs	IFC explanation provided and accepted in bilaterals documented in "Annex 10 Response to GEF Secretariat Comments"	Annex 10 of Project Brief. Also included in Annex in Executive Summary Table 5.1 and 5.4 of Project Brief.
17. Need for separate M&E budget and plan in compliance with GEF requirements	Created distinct line for M&E costs in budget, allocating total costs of \$300,000 between external evaluator (\$200,000) and IFC staff costs (\$100,000)	Changes also reflected on Executive Summary
	Revised M&E Plan to follow SMART criteria and ensure compliance with GEF.	Section 8
18. Implementation cost are reckoned to be high	Implementation costs and GEF funding request reduced by \$700,000, representing a 23% reduction in GEF funds used for operations and TA. See Annex providing review of costs for Program	See below
19. On developing with the WB a strategic framework for the region/country	IFC explanation provided and accepted in bilaterals documented in "Annex 10 Response to GEF Secretariat Comments"	Annex 10 of Project Brief. Also included in Annex in Executive Summary
20. Relationship with DOE Philippines concerning implementation arrangements	IFC explanation provided and accepted in bilaterals documented in "Annex 10 Response to GEF Secretariat Comments"	Annex 10 of Project Brief. Also included in Annex in Executive Summary

### Assessment of Project Implementation Costs Per GEF SEC Request

**Background:** GEF SEC commented on if and how costs of implementation were falling overtime, given expected gains of efficiency in the implementation of sustainable energy financing programs.

IFC believes costs have been falling, measured in both absolute and relative terms, for the following reasons:

- Despite having similar goals and approaches to IFC/GEF programs in Russia and China, IFC/GEF implementation costs of the program in Philippines is 44% lower than the Russian program and 65% lower than the Chinese. This significant reduction in GEF-funded implementation costs reflects not only the smaller Philippines economy, but also greater leverage of IFC's existing infrastructure and efficiency in delivering the program,
- In addition, the program's ability to leverage resources has increased significantly over time. While during HEECP and CEEF, IFC/GEF provided as much as 50% guarantees to Financial Institutions, recent program in Russia, China and now the Philippines are targeting as little as 10%, and

- This ability to increasingly leverage GEF resources is, in our view, a major improvement in the program's efficiency overtime and an effective model, particularly if contrasted to other GEF-sponsored program that, for instance, required as much as 90% guarantees in China.

### Project Key Costs in Perspective (1)

			<b>HEECP</b>	<b>CEEF</b>	<b>Russia SEF</b>	<b>CHUEE</b>	<b>Philippines SEF</b>
GEF	Implementation	\$ MM	0.75	3	5	6.5	2.3
	Guarantees	\$ MM	4.25	15	2	10.5	3
3 <sup>rd</sup> Party Financing (Co-Financing and Leverage)		\$ MM	8.5	144-302	28-62	130	67-88
Guarantees/Loans		%	50%	50%	10%	6-10%	~ 10% (2)
3 <sup>rd</sup> Party Financing / Guarantees			2	9-20	14-31	12	22-29

(1) Source of Data: Work Program Submissions, adjusted as appropriate based on any later Program adjustments.

(2) Target

			<b>HEECP</b>	<b>CEEF</b>	<b>Russia SEF</b>	<b>CHUEE</b>	<b>Philippines SEF</b>
GEF	Implementation	\$ MM	0.75	3	5	6.5	2.3
	Guarantees	\$ MM	4.25	15	2	10.5	3
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(1) Source of Data: Work Program Submissions, adjusted as appropriate based on any later Program adjustments.

(2) Target

### Note on Changes to Document Following Further Interaction with GEF After Bilaterals on May 19

- Reduction in request for GEF Funding from \$6.3 MM to \$5.3MM, with related reduction in GEF allocated to credit enhancement from \$4MM to \$3MM
- Revised language to clarify that (i) performance bonus is one of the tools for credit enhancement, (ii) that IFC will allocate the \$3MM from GEF to credit enhancement between guarantees and performance bonus as necessary. For planning purposes, IFC estimates about \$0.5MM for performance bonus.