

Cover Page for Project/Program Approval Request			
1. Country/Region:	Honduras	2. CIF Project ID#:	
3. Source of Funding:	<input type="checkbox"/> FIP	<input type="checkbox"/> PPCR	<input checked="" type="checkbox"/> SREP
4. Project/Program Title:	Honduran Self-Supply Renewable Energy Guarantee Program		
5. Type of CIF Investment:	<input type="checkbox"/> Public	<input checked="" type="checkbox"/> Private	<input type="checkbox"/> Mixed
6. Funding Request in million USD equivalent:	Grant: 0.5		Non-Grant: 5.0
7. Implementing MDB(s):	IDB		
8. National Implementing Agency:	N/A		
9. MDB Focal Point and Project/Program Task Team Leader (TTL):	Headquarters- Focal Point: Claudio Alatorre, Climate Change and Sustainability Division		TTL: Patrick Doyle, Structured and Corporate Finance Department
10. Project/Program Description (including objectives and expected outcomes):			
<p>The proposed USD 5 million SREP Honduran Self-Supply Renewable Energy Guarantee Program will be used to provide risk-sharing instruments (first-loss guarantees mainly, and co-financing resources in certain cases) for loans from IDB and/or other financial institutions, improving the credit profile of the projects and allowing their implementation through access to appropriate finance. With this Program, the IDB expects to support approximately USD 40 million of investment in self-supply renewable energy projects in Honduras. Additionally, these projects will help establish local engineering capacity for their technical design, catalyze the development of supply chains for equipment procurement, and demonstrate the market potential to local financial institutions.</p> <p>The requested USD 500,000 grant contribution will support training and capacity building activities, as well as additional feasibility studies or legal documentation whose cost may be posing a barrier for the initial projects. The market potential for biogas, small-scale biomass and solar projects is significant, and the demonstration impact of the SREP and IDB supported projects could lead to significant replication, reaching USD 100 million or more in investment in similar projects in the near future.</p> <p>The program is expected to support the installation of at least 20MW of self-supply renewable energy projects in Honduras and reduce GHG emissions by an estimated 800,000 tCO₂e over 20 years.</p>			
11. Consistency with Investment Criteria:			
See Pages 10 to 15.			

12. Stakeholder engagement:		
Significant market outreach has been held by IDB in the last year to understand private sector potential and need to carry this type of investments in Honduras. This process has validated both the willingness of private companies to pursue these opportunities and the need to count with risk mitigation and technical cooperation (TC) resources to support first movers. In addition, the capacity building activities within this program will include detailed case studies, which will be produced for particular projects. These case studies will be presented at Honduran and Central American regional conferences. The IDB will hold workshops in Honduras with local banks and associations. Open editorials will be submitted to local newspapers on the projects financed by SREP.		
13. Gender considerations:		
The IDB will explore how and to what extent business and job opportunities can be generated for women and other vulnerable groups in energy-intense businesses in the textiles, food processing, recycling, health and education sectors that would benefit from self-supply RE. For this purpose, and among other possible tools, IDB will combine, where feasible, energy efficiency audits with gender-relevant aspects of the shared value appraisal methodology IDB has developed.		
14. Indicators and Targets (consistent with results framework):		
Core Indicator¹	Target	
Increase in RE generation capacity and supply (MW).	20	
Annual electricity output from renewable energy as a result of SREP interventions (MWh).	45,000	
Tons of CO ₂ e emissions avoided – Grid connected generation	40,000	
<i>Development Indicator(s):</i> a) Number of RE technologies/ applications demonstrated	3	
15. Co-Financing:		
	<i>Amount (in USD million):</i>	<i>Type of contribution:</i>
• MDB	20.0	USD 20M total debt, with USD 5M guaranteed/shared by SREP
• Private Sector (please specify)	20.0	Equity or corporate debt from local banks when possible
Co-Financing Total:	40.0	
16. Expected Board/MDB Management² approval date:		
February 15 th , 2015		

¹ See p.17

² In some cases activities will not require MDB Board approval.

Honduran Self-Supply Renewable Energy Guarantee Program
IDB Private Sector SREP Proposal
for Submission to the SREP Trust-Fund Sub-Committee

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LIST OF ABBREVIATIONS

CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DFI	Development finance institution
FI	Financial Intermediaries
GDP	Gross domestic product
GHG	Greenhouse gases
GW	Gigawatt
GWh	Gigawatt-hour
IDB	Inter-American Development Bank
MW	Megawatt
MWh	Megawatt hour
NSG	Non-Sovereign Guaranteed Operations
PPA	Power purchase agreement
PV	Photovoltaic
RE	Renewable energy
SREP	Scaling-up Renewable Energy in Low Income Countries Program
SREFF	Self-Supply Renewable Energy Finance Facility
TC	Technical Cooperation
USD	United States Dollars

I. COUNTRY AND SECTOR CONTEXT

Honduras' electricity sector is under stress, with high costs for electricity distribution, transmission, peak demand and energy consumption. Power outages have become frequent and rationing was just announced. Currently 62 percent of system capacity comes from conventional thermal combustion power plants. In addition to relatively high greenhouse gas (GHG) emissions, the composition of the current mix of power plants, under the present operating regime, makes the cost of power generation sensitive to variations in international oil prices (the market price for electricity is close to USD 180 /MWh). This has raised the costs of providing service, which has not been regularly factored into electricity rates, and the Honduran government and the electric utility (ENEE) are working with international institutions like the IMF to correct this.

For thermal needs, Honduras has limited access to natural gas, and relies heavily on expensive oil-derived bunker fuel for industrial processing. Yet it has ample distributed renewable resources that can be captured to provide electrical and thermal energy on-site. Biogas alone is estimated to have an economically exploitable potential of 366 million cubic meters (m³) annually, according to a study carried out by the United Nations Development Program in 2011 (equivalent to 366 MW of thermal and 146 MW of electric capacity).³ Moreover, according to Ministry of Natural Resources, the biomass electricity potential is around 361.1 MW,⁴ which represents about 20 percent of the existing generating capacity. According to a study carried out for the IDB by DNV-GL, total forest and crops biomass potential is estimated at 841.3 GWh per annum (13 percent of current electricity production). Mean annual solar irradiance in Honduras is of 5.2 Wh/m²/day, which could achieve a capacity factor of 18 percent in fixed installations. Theoretical potential for solar PV in Honduras is estimated at almost 50 times the current electricity production.

Honduras regulatory framework promotes distributed electricity self-supply renewable energy in many ways. Although there is a new electricity law in place since May 2014 (*Nueva Ley General de la Industria Eléctrica*, D.404/13) this law does not affect some incentives already established by previous laws such as the *Ley de Promoción de Generación Eléctrica con Recursos Renovables* (D.70/07, D.138/13), which exempts import, added-value and corporate taxes for 10 years to renewable energy projects.

Distributed electricity self-supply with renewable energy could have many benefits: reducing the strain on the electricity generation and transportation systems; decreasing electricity costs; enhancing grid stability; and improving energy security—in particular by reducing dependence on imported oil. In addition, capturing the methane gas from wastewater or using biomass waste directly can provide significant greenhouse gas reductions, and other local environmental benefits. Self-generation of energy from on-site renewable systems is increasingly economical as technology costs decrease, fossil fuel prices rise, and new business models for financing projects emerge. Unfortunately currently there remain considerable market barriers to Honduran companies wishing to implement these technologies.

As renewable technologies generally have higher initial capital costs and longer pay-backs than more polluting alternatives, any risk premiums, including traditional credit, currency and political risks, are amplified. The required long-term finance is unavailable in Honduras for many companies. And even

³ SNV/UNDP/SERNA (2012) Estudio sobre el potencial de desarrollo de iniciativas de biogás a nivel productivo en Honduras.

⁴ SERNA/DGE (2009) Desarrollo Energético del Subsector Biomásico de Honduras.

under the third-party finance model or power purchase agreement (PPA) model, common in the U.S. and Europe, the Honduran corporate that is purchasing the power or heat must have strong creditworthiness or the third-party company will not be able to access the credit it needs to finance the project and operate and sell the renewable energy to the Honduran corporation. Particularly when the solar panels or biogas system will be incorporated into the facilities of a manufacturing plant (placed on the companies' rooftops or into their wastewater treatment system), strong corporate credit of the host company is vital to access finance. By financing these projects directly, the IDB will prove both the technologies and their financial returns.

II. PROGRAM CHOICE – WHY SELF-SUPPLY RENEWABLES?

The strong economic growth in most of Latin America and the Caribbean over the last decade has resulted in higher standards of living for millions but also rapidly increasing energy demand. In contrast to what has happened in the industrialized world, Latin American energy intensity—the amount of energy consumed relative to gross domestic product (GDP)—has not improved in recent years. Honduras is not exempt from this trend; it has been steadily growing over the past decade both economically and demographically. The population has grown by 22 percent to over 8 million people in the past 10 years, increasing electricity consumption by 58.6 percent. This situation has forced the country to double its installed capacity within a decade, mainly with conventional thermal combustion power plants.

Small-scale self-supply renewable energy systems are widely regarded as the most pervasive, lowest risk and least costly opportunities to mitigate climate change. In Honduras, self-supply projects are already a cost-effective alternative to the grid—when adequate financing is available—, as market prices (at USD 180 /MWh) make these types of technologies competitive. Self-supply projects also serve as a powerful tool for private sector companies to provide themselves greater financial and operational stability, given the high costs and frequent outages. In addition to the operational cost, the instability also encourages higher CO₂ emissions through common reliance on diesel generators for supplemental electricity.

However, despite the fact that these opportunities have long been considered “low hanging fruit” from a risk and cost perspective, it is increasingly accepted that they are “still hard to reach”. The barriers to these projects are well documented, and include: limited information; lack of technical or managerial expertise; high transaction costs relative to project values for project identification, design and finance; lack of access to finance, and project financial payback periods that are longer than available loan tenors. Although cleaner technologies are increasingly competitive and can provide long-term energy price security, it can be difficult to attract investment to these projects given the high initial capital costs and uncertainty regarding long-term performance. Uncertainty over future savings is also common, as project economics are impacted by many factors including power and fuel tariff structures, which can vary widely. Other technology-specific risks, such as the resource risk for wind or solar, also present a perceived disadvantage to cleaner technologies. Therefore, access to affordable, long-term finance is essential to level the playing field with traditional, more polluting investments.

Small-scale, self-supply renewable generation is an underserved sector in banking. The project sizes are small relative to other utility-scale energy projects; therefore energy divisions in banks typically do not cover them. However the projects are large in comparison with the corporate balance sheets of the companies that are often implementing these projects. In addition, despite the fact that these projects often have high financial returns, banks generally apply standard, asset-based risk criteria to companies seeking

loans for self-supply renewable energy investments. This results in unnecessarily high risk premiums, high collateral requirements, and short loan tenors. Consequently, renewable energy opportunities are often postponed or missed entirely, resulting in wasted energy and avoidable GHG emissions.

Currently, knowledge gaps exist for many renewable technologies. In many countries such as Honduras, companies and financiers are unaware of their potential to reduce costs and GHG emissions while enhancing their energy security. And while these technologies are commercially proven and increasingly economical in developed countries, considerable uncertainty exists, particularly with regards to the capital and operating costs and energy production expectations for solar, biomass and biogas technologies.

III. PROPOSED PROGRAM

A. General Description

General Project/Program Description: The proposed USD 5 million SREP reimbursable contribution will be used to establish a Guarantee Program that will provide risk mitigation instruments (first-loss guarantees mainly, and co-financing resources in cases) for loans from IDB and/or other financial institutions for self-supply renewable energy projects in Honduras. In 2013, the IDB's Structured and Corporate Finance (SCF) Department established a USD 50 million SREFF Facility to offer loans ranging in size from USD 500,000 to USD 5,000,000 for investments in energy efficiency and self-supply ("behind the meter") renewable energy projects. However, in many cases, the loan size, tenors, and security requirements of these investments exceed both local bank and the IDB's risk tolerances. The IDB's Self-Supply Renewable Energy Finance Facility (SREFF) is designed to address the financial barriers previously described by providing loans with minimal transaction costs, at sufficiently long tenors and without high collateral requirements due to credit enhancements provided by donor guarantees. The IDB's unique role is to act as the anchor investor and attract other co-financing investment of at least 50 percent of the total cost of each project. In addition, the IDB facility can provide financing by lending through local financial intermediaries, which would not only increase the sustainability of the investments but also provide local banks with the expertise to finance renewable energy projects.

The proposed USD 5 million SREP Honduran Self-Supply Renewable Energy Guarantee Program will be used to provide risk sharing instruments (first-loss guarantees mainly, and co-financing resources in certain cases) for loans from IDB and/or other financial institutions, improving the credit profile of the projects and allowing their implementation through access to appropriate finance. With this Program, the Bank expects to support approximately USD 40 million of investment in self-supply renewable energy projects in Honduras. Additionally, these projects will help establish local engineering capacity for their technical design, catalyze the development of supply chains for equipment procurement, and demonstrate the market potential to local financial institutions.

To address the knowledge gaps previously described, the SREFF also provides investment grade energy studies from top international engineering firms. These firms work with local partners or subsidiaries, transferring knowledge to the local workforce. In addition the studies are done in conjunction with the corporations own engineers and maintenance managers. Specifically, eight of these investment grade studies have already been conducted in Honduras and have demonstrated the economic viability of numerous solar and biogas projects to local companies and their management. These studies are crucial to providing the knowledge, vision and confidence necessary for companies to take longer-term investment decisions. In addition, the IDB has developed and disseminated detailed case studies for projects

supported. These case studies serve to increase knowledge of self-supply and small-scale renewable energy technology project performance and costs, which should lead to increased lending for these projects. The requested USD 500,000 grant contribution will support training and capacity building activities, as well as additional feasibility studies or legal documentation whose cost may be posing a barrier for the initial projects. The market potential for biogas, small-scale biomass and solar projects is significant, and the demonstration impact of the SREP and IDB supported projects could lead to significant replication, reaching USD 100 million or more in investment in similar projects in the near future.

B. Program Financing Plan

Source of Funding	Amount (USD million equivalent)	Type of instrument	Percentage (%)
Co-financing FIs, Corporations, Project developer	\$20	Equity or corporate debt from local bank loans when possible	50%
IDB	\$15 (\$20M total debt, with \$5M guaranteed/shared by SREP)	Loans	37.5%
SREP	\$5	Guarantee/co-financing of Loans	12.5%
TOTAL	\$40		100%

C. Financial Instrument

Over the next four years, the Program expects to provide SREP concessional investment support to projects facing the common development and financing barriers described above. IDB financing will be provided to private sector borrowers under the SREFF along with additional financing from commercial lenders, companies, project developers and other DFIs. SREP funds will be structured to enhance the risk profiles of eligible IDB projects to help make the project viable while using the minimum guarantee coverage necessary. The pricing, terms and conditions of the IDB financing offered with the benefit of a guarantee will be structured on a case-by-case basis. The guarantee support is expected to enhance the projects' credit profile to allow debt leverage in these investments. Concessional pricing of the guarantees will be needed to contain the incremental cost of the guarantee in the financing structure⁵ and thus not negatively affect the internal rates of return of the investments. In the case of SREP direct loans, pricing will be based on a discount from the IDB market rate (or may be similar to IDB pricing if no price concessionality is needed). SREP investment criteria and principles, such as of minimum concessionality, additionality, cost-effectiveness, and avoidance of market distortions, will be observed in all cases.

D. Technical Cooperation & Knowledge Management

The USD 500,000 grant funding requested will provide technical cooperation ("TC") aimed at (a) reducing transaction costs in eligible projects (including due diligence and legal costs that may pose a

⁵ Final cost to the borrower may not increase (rather decrease) in some cases, as IDB would be able to reduce the spread on its loans as part of the risk is transferred to the SREP.

barrier to project development), (b) conducting self-supply renewable energy engineering feasibility studies to identify potential projects, and (c) developing and disseminating capacity building materials to share lessons learned with the market, including project developers, other financial institutions, and local corporations.

Indicative TC & KM Budget

Component	SREP (USD)	IDB – SREFF (USD)	Private Sector Beneficiary (USD)	Total (USD)
A) Support on transaction costs	100,000	100,000	200,000	400,000
B) Feasibility studies	300,000	300,000	200,000	800,000
C) Capacity building and dissemination	100,000	100,000	-	200,000
Total	500,000	500,000	400,000	1,400,000

These capacity building activities will include detailed case studies, which will be produced for particular projects. These case studies will be presented at Honduran and Central American regional conferences. The IDB will hold workshops in Honduras with local banks and associations. Open editorials will be submitted to local newspapers on the projects financed by SREP.

IV. PROGRAM’S STRATEGY FOR ACHIEVING MARKET TRANSFORMATION

The Program’s strategy to promote market transformation is based on:

- a) The demonstration effect it expects to provide by supporting the financing of a first few projects with a set of RE technologies. By sharing and thus mitigating the risk to IDB and other lenders, as well as helping reduce initial project development barriers (high due diligence and legal costs), the program will catalyze project development and access to financing for these projects, establishing a track record of their technical and financial performance. Such demonstration is expected to reduce risk perception associated with these technologies and financing models, thus enhancing access to financing and further replication in the future.
- b) The provision of awareness and capacities among the many stakeholders in these sectors (industrial and commercial companies, financial institutions, project developers, equipment suppliers) to identify, evaluate, develop and finance these projects.

The program aims to support innovation as the basis of the sought transformation, at the financial (unavailable risk sharing instruments), technological (technologies untested in Honduras) and business models (not yet implemented in Honduras). For example, the Program will support innovative renewable projects, such as a 3MW rooftop project—the first commercial-scale solar project in Honduras—, effectively creating a more robust market for these technologies in the country. It may also support new business models such as third-party finance of projects within companies’ facilities. This third-party finance or “PPA” model has greatly expanded the growth of the solar industry in the U.S., resulting in over half the installed solar for residential and commercial consumers in recent years. There are no such

projects in Honduras to date, but there are several solar companies in discussions with corporations to provide power from rooftop solar under long term PPAs.

The primary technologies proposed are solar—thermal or photovoltaic—and the use of non-sugarcane agricultural wastes and wastewater to produce biogas or biomass thermal and electrical energy. Through the USD 40 million in investment the program expects to directly mobilize (with 20MW or more in installed capacity), the project will directly support at least 10 companies to supply their own renewable energy. To support the market transformation objective of the program, the IDB will profile the lessons learned through the projects supported by disseminating case studies, as part of the Knowledge Management strategy described above.

V. CONSISTENCY WITH SREP INVESTMENT CRITERIA

A. Increased Installed Capacity from Renewable Energy Sources

This Program is expected to support directly at least 20 MW of power generation capacity. Nevertheless, the demonstration effect is expected to help catalyze further self-supply renewable investment and development.

B. Low Emission Development

The Program will support projects expected to reduce GHG emissions by an estimated 0.8 million tCO₂e over 20 years⁶. The IDB will document the GHG reductions and other environmental benefits such as waste reduction. Other co-benefits that will be at significant scale to be documentable include increasing energy security, reducing fossil fuel imports, and decreasing the need for costly electricity grid investments.

C. Affordability and Competitiveness of Renewable Sources

The levelized cost of electricity of RE self-supply projects in Honduras is generally, for the technologies to be prioritized under this program, in the range of USD 120-150/MWh⁷. The average market price for electricity in Honduras is close to USD 180 /MWh and is expected to increase in the medium term. Self-supply renewable energy project development costs in Honduras are expected to decrease over the years as the first few projects provide demonstration, investment and equipment volume, further developing local capacity and contributing to reducing future costs. Summing up, some opportunities for cost reductions would be:

- ***Cost reduction through capacity building:*** Currently renewable energy projects are being evaluated and executed by primarily large multinational companies and international engineering firms with higher costs than the local labor market.

⁶ GHG emissions reductions over 20 years assuming 20MW of installed capacity, capacity factors of 20% for solar PV and 75% for biomass systems, and a combined margin grid emissions factor of 0.65 tCO₂e /MWh for Honduras based on Clean Development Mechanism estimates.

⁷ This estimate is for biomass, biogas and solar PV projects in Honduras and includes capital, operation and maintenance expenditures and financing costs.

- ***Cost reduction through equipment:*** the cost of equipment is also another major driver of the cost projects and great economies of scale can be achieved when volume of equipment increases. Right now equipment purchases are one-off with no economies of scale for the pricing of the equipment and further complicated with importation costs and high hassle relative to the size of projects.
- ***Reduced financing cost based on reduced risk perception:*** Successful performance of this Program will increase the interest of other financing institutions, as risk perception is reduced and financing structures mitigating resource and other relevant risks are demonstrated. Broader access to debt financing (increasing the debt/equity ratio of projects) could have a significant impact in reducing development cost, enhancing the economic and financial viability of these technologies, and incentivizing companies to accelerate investment and development.

D. **Productive use of energy**

All projects in the existing pipeline entail productive uses of energy (see annex I), either in the industrial or the commercial sector. Examples in the pipeline include a bottling plant, a recycling center, meat processor and food packaging plants, and a broom manufacturer. These projects will reduce operation costs (and in cases also improve reliability of supply), with gains in productivity or net operational margins for the companies.

E. **Economic, Social and Environmental Development Impact**

The Program will have positive economic and social impacts as it will reduce operating costs of industrial producers, enhancing competitiveness of local businesses, which in turn helps to protect and in cases increase employment (in businesses implementing the investments, as well as in project installers and operators). Another important benefit of the program is the displacement of fossil-based generation, thus contributing to reducing fossil fuel imports and enhancing energy security and trade balances (particularly if replication of these types of investments achieves in the mid/long term a sizeable scale).

In terms of environmental benefits, the Program will support projects expected to reduce GHG emissions by an estimated 0.8 million tCO₂e over 20 years.⁸ Benefits in terms of waste reduction (or rather economic use of waste for energy production), in the cases of biomass and biogas projects, are also expected. IDB will document the GHG reductions and other environmental benefits achieved by the program.

F. **Economic and Financial Viability**

The economic viability of these projects has been validated by eight feasibility studies for RE self-supply projects in Honduras that show attractive investment returns. The Program's financial sustainability is inherent in the economic viability of identified RE investments and the demonstration that these projects will offer, which will reduce perceived risks and financing costs in the Honduran market. Furthermore, the Program's efforts will involve local FIs, companies, and developers through co-financing, technical

⁸ GHG emissions reductions over 20 years assuming 20MW of installed capacity, capacity factors of 20% for solar PV and 75% for biomass systems, and a combined margin grid emissions factor of 0.65 tCO₂e /MWh for Honduras based on Clean Development Mechanism estimates.

cooperation and training, and the dissemination of case studies profiling the projects supported. Specifically, the USD 500,000 in grant funding requested will be used in part to provide additional training to local banks, which is focused on the opportunities to lend for small-scale self-supply projects. The Program will “crowd in” rather than “crowd out” private sector lending for climate change, and the first-loss guarantees will be provided on case-by-case basis to address risk and cost barriers identified in each project and will be allocated based on the principle of minimum concessionality. The IDB will lend no more than 50 percent of the total project costs to each project, and although the remaining 50 percent is expected to be corporate equity until risk perceptions are reduced, the IDB will seek local bank co-financiers for the remaining debt. When necessary the SREP may provide subordinated debt rather than a guarantee to complete the financial package. With regard to the third-party PPA model, the grant funding requested may be used to pay for the contractual and legal documentation necessary for the establishment of this business model and its acceptance by local financial intermediaries. Once this business model is established, it is expected that legal and due diligence costs will decrease for future projects.

G. **Leveraging of Additional Resources**

The Program resources of USD 5M will be leveraged as first-loss guarantee on approximately USD 20M in IDB senior loans. The IDB will finance up to 50 percent of Project costs, therefore co-financing will be an additional USD 20M. Thus the Program resources will attract approximately USD 35M in additional direct financing, for a total of USD 40M in RE investment. As introduced before, while this Program is expected to support directly at least 20 MW of power generation capacity, the demonstration effect is expected to help catalyze further self-supply renewable investment and development. While the technologies are proven, there are still technological risks, and there are no current examples in Honduras of successful projects which would develop confidence among private companies and local banks about using their time, capital or debt capacity to invest. The prospect for replication is not only supported by the vast potential in the industrial-heavy San Pedro Sula, but also the agricultural and industrial sectors throughout the country. To maximize the demonstration potential at scale in industry within Honduras and throughout Central America, the projects supported by the Program, their impact, and lessons learned will be profiled in case studies and shared in presentations at regional conferences in which the IDB participates regularly.

H. **Co-benefits of Renewable Energy Scale-up**

This Program has a significant number of potential development co-benefits. Many of these are expected to have immediate direct impact and all are expected to become significant as the demonstration effect of the Program impacts in a scale larger than that of the directly supported investments. The expected co-benefits are:

- ***Energy Stability:*** Self-supply projects provide greater stability to industrial clients whose operations rely on consistent flow of energy to maintain productivity. This is especially pronounced in Honduras given the weak grid, the state of the public utility, unpredictable prices and electricity rationing. This high level of instability creates productivity losses and worsens the business climate for the important manufacturing industry, which relies on high levels of energy consumption. In addition, self-supply projects reduce demand on the unstable electrical grid, benefiting the general public as well.

- **Energy security:** About 52 percent of Honduran total primary energy supply is based on fossil fuels and about 70 percent when considering just the industry, transport, and commercial sectors. More than 86 percent of fossil fuels are imported, given the absence of significant oil, gas or coal production in Honduras.⁹ Honduras has already experienced the vulnerability of its economy to price or supply shocks of these fuels. In addition, higher power supply costs result in reduced competitiveness of Honduran industry (and particularly in energy intensive, commodity producing sectors where cost increases cannot always be proportionally transferred to prices).
- **Employment:** These companies each employ hundreds of women and men who will benefit from the project due to the companies' lower long-term energy costs, increased energy security and enhanced competitiveness, which should normally contribute to continuous and increased employment. The lower power cost and the resulting increased competitiveness of local industry (as explained in the point above) has the potential to protect and promote employment, as Honduran products become more competitive internationally and export volumes can be maintained or increased. This assists the manufacturing industry that is trying to climb the value chain, but often limited by lower productivity levels in part caused by operational disruptions from unreliable energy.

I. **Implementation Potential**

This Program will be implemented immediately upon its approval by the SREP Sub-Committee and the IDB Board. The IDB has already approved the supplemental USD 50 million SREFF debt facility at the regional level, allowing the IDB to provide loans of up to USD 5M per project with facilitated approval procedures for these self-supply renewable energy projects. IDB has previous experience with similar donor-backed Guarantee Programs and has established legal and administrative procedures. Over the past two years, with funding from the Nordic Development Fund, IDB has completed over twenty five detailed self-supply renewable energy feasibility studies with private companies in Central America, eight of which are in Honduras and four more are underway. Through these projects IDB has come to understand the market well, and has strong connections with market players including companies, developers and local bankers. The studies conducted in Honduras demonstrate the economic viability of over USD 25 million in solar PV, solar thermal, and wastewater biogas projects with diverse companies including an aquaculture producer, a recycling plant, a meat processor, a university as well as beverage plants and commercial buildings. The USD 500,000 in grant funding requested may support additional studies as necessary. IDB is currently conducting financial due diligence with three of these companies that could immediately benefit from the proposed guarantee Program, one of which is implementing what could be the largest solar plant in Honduras to date (3MW). A first-loss guarantee from SREP would significantly enhance IDB's ability to finance these types of projects, as many Honduran corporations have risk profiles that prevent access to the long-term capital needed for their implementation.

J. **Additional Costs & Risk Premium**

Besides any challenges associated with the credit profile of the companies, the RE investments to be supported by the Program are currently perceived as having superior technology and implementation risks and therefore face higher financing costs and first-mover implementation costs when compared to

⁹ International Energy Agency (2012)

conventional energy sources in Honduras such as diesel and bunker fuels. Given the high initial capital expenditure involved with RE, as opposed to high ongoing fuel costs with more established energy sources, these perceived risks result in limited access to financing and high premiums for RE projects.

Based on the knowledge that IDB has developed in Honduras by working with private companies on feasibility studies, the economic viability of the projects is not a risk. As the proposed projects are “behind the meter” and do not require regulatory approval, this significantly lowers implementation risks. Currently, the private sector in Honduras is interested in long-term investments such as the renewable energy projects proposed, but these investments require private companies to take on long-term debt, which at this stage, in the Honduran market, requires developmental institution risk-sharing.

K. Effective Utilization of Concessional Finance

As explained in previous sections, investment in self-supply renewable energy is limited by the lack of access to appropriate and sufficient debt by private companies. Even in the simplest financial structure, for example, a corporate loan to an owner of an industrial or commercial building to install a rooftop solar system, the costs of the project generally exceed the companies’ ability to pay with equity or working capital. Long-term debt reduces the initial costs and allows the energy savings to cover the debt payments so the project can pay for itself over time. However, when companies seek debt for these projects, banks are often reluctant or unable to accept the savings as future cash flows or the renewable energy technologies as collateral, and in any case after installation the resale value of the equipment is greatly reduced. In many cases, the industrial and agricultural companies do not have strong enough credit or other assets available to pledge to allow them to invest in these projects, and the projects compete with core-business investments that are higher priority and/or have higher expected returns. Additionally there are technology and operations risks due to the lack of experience with these projects and higher return expectations.

An alternative is a project finance or third party structure, such as the solar leasing, chauffeage or PPA model, where an independent company finances, owns and operates a small-scale renewable energy plant located on the industrial client’s property. In these structures the independent company is specialized and can better manage the technical risks, but there are additional contractual risks, and often they financed with 100% equity. Even if this amount of equity can be raised, it is very expensive. By replacing the high-cost equity with low cost debt, the overall cost of capital is reduced, enabling the projects to produce energy for a levelized price that is competitive with fossil fuels.

In both these scenarios, the technical cooperation and first-loss guarantees or subordinated debt provided by the SREP under the proposed Program will help overcome the risk and cost barriers faced by developers, companies and financial institutions in Honduras. The proposed first-loss guarantee Program would allow the IDB and local FI’s to provide the financing these projects need.

L. Mitigation of Market Distortions

The market will not be distorted since there are currently very few renewable self-supply energy projects and very limited debt financing for most RE technologies in Honduras (small/mini hydro is an exception, and thus not the focus of this program). The private sector will be crowded in, rather than out, as the

projects we assist are implemented and the market develops. In addition, and to support this objective, the principle of minimum concessionality will be observed in all cases.

M. **Risks**

The primary risk is that the loans are not repaid. As a general rule, SREP Guarantees or co-financing shall be processed in tandem with the respective IDB Loan and will be subject to the project cycle and approvals applicable to IDB Loans approved. Loan repayment risks will be mitigated by the IDBs credit analysis and at the technical level by ensuring that the projects financed produce sufficient energy savings to service the incremental debt. This will be addressed by ensuring that the company has sufficient cash flows to cover the loan even if the project costs are higher than expected and energy savings lower than expected.

There is also a risk of low demand for the Program's Guarantees and direct lending will be addressed by promoting and introducing the Program to companies receiving technical cooperation for feasibility studies and capacity-building within the nascent industry of RE project developers in Honduras.

Another potential risk is the level of co-financing required, given that the IDB can only finance up to 50 percent of project costs. This risk is mitigated by the IDB's proven ability to bring in B lenders or co-financiers, and the potential to use the SREP or other donor loan funds as co-financing when needed to complete the package. The presence of IDB financing and the due diligence it entails, as well as the Program's Guarantee, investment-grade feasibility studies, and reduced transaction costs, lower the risk profile of the projects and will enhance the prospects of securing co-financing from FIs.

Supply chain challenges and risk derived from the availability of engineering services, which under current conditions could translate into project delays, cost overruns, and completion/performance risk, will be addressed by employing bid evaluation methodologies and assisting companies with procurement processes as part of the engineering studies supported by the Program's grant funding.

N. **Performance Indicators**

Key Performance Indicator		Target
GHG emission reductions	- Annual (tCO ₂ e/year)	40,000
	- Lifetime (cumulative, million tCO ₂ e)	0.8
Electricity production	- New RE capacity (MW installed)	20
	- Additional Power Generation (MWh/year) ¹⁰	45,000
Number of RE technologies/applications demonstrated		3

¹⁰ Assuming capacity factors of 20% for solar PV and 75% for biogas/biomass systems, and a combined margin grid emissions factor of 0.65 tCO₂e /MWh based on CDM estimates. Installed costs are based on actual supplier quotes, and an allocation of RE technology investments according to a projected pipeline that is based on feasibility studies conducted to date.

VI. ANNEX I –PIPELINE OF FEASIBILITY STUDIES CONDUCTED IN HONDURAS

Industry	Project Type	Investment Potential (USD M)	Annual GHG emissions reductions potential estimated (tCO ₂)
Bottling plant	Biogas, solar PV	\$3.5	3,600
Shrimp Farming Operations	Biogas, solar PV, wind	\$3.0	4,200
Recycling center	Solar PV, solar thermal	\$2.0	1,500
Meat Processor	Biogas, solar PV	\$1.8	2,500
Bottling plant	Solar PV	\$6.0	3,600
Broom Manufacturer	Solar PV	\$2.0	1,300
University	Solar PV, solar thermal	\$1.5	900
Food packaging plants	Solar PV	\$2.0	1,200
TOTAL		\$21.8	18,800

VII. ANNEX II - ESTIMATED IMPLEMENTATION AND SUPERVISION COSTS OF INVESTMENT OPERATIONS

MDB Request for Payment for Project Implementation Services (MPIS)

SCALING UP RENEWABLE ENERGY PROGRAM IN LOW-INCOME COUNTRIES MDB Request for Payment of Implementation Services Costs			
1. Country/Region:	Honduras	2. CIF Project ID#:	(Trustee will assign ID)
3. Project Title:	Honduran Self-Supply Renewable Energy Guarantee Program		
4. Request for project funding (US\$ million):	At time of country program submission (tentative): US\$5.5 million	At time of project approval:	
5. Estimated costs for MDB project implementation services (US\$ million):	Initial estimate - at time of Country program submission: US\$ 0.428 million	MDB: IDB	
	Final estimate - at time of project approval:	Date: November 2, 2014	
6. Request for payment of MDB Implementation Services Costs (US\$ million):	<input checked="" type="checkbox"/> First tranche: US\$ 0.428 million <input type="checkbox"/> Second tranche:		
7. Project/program financing category:	a - Investment financing - additional to ongoing MDB project b - Investment financing - blended with proposed MDB project c - Investment financing - stand-alone d - Capacity building - stand alone	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
8. Expected project duration (no. of years):	Up to 4 years.		
9. Explanation of final estimate of MDB costs for implementation services:	If final estimate in 5 above exceeds the relevant benchmark range, explain the exceptional circumstances and reasons: N/A		
10. Justification for proposed stand-alone financing in cases of above 7 c or d: N/A			