

PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC679

Project Name	Sustainable rural energy services (P131602)
Region	LATIN AMERICA AND CARIBBEAN
Country	Honduras
Sector(s)	Other Renewable Energy (100%)
Theme(s)	Rural services and infrastructure (50%), Rural markets (50%)
Lending Instrument	Specific Investment Loan
Project ID	P131602
Borrower(s)	Ministry of Finance (Secretaria de Finanzas)
Implementing Agency	Secretaria de Finanzas - Unidad de Cambio Climatico
Environmental Category	B-Partial Assessment
Date PID Prepared/ Updated	22-May-2013
Date PID Approved/ Disclosed	22-May-2013
Estimated Date of Appraisal Completion	01-Apr-2014
Estimated Date of Board Approval	24-Oct-2013
Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

1. Honduras is one of the poorest countries in the Latin American region with annual incomes that are less than US\$2,000 per person (2011 Atlas GNI per capita). Economic development over the years saw a gradual decline in poverty rates, but economic growth was set back due to the impact of the global economic crisis that began in 2008 and the political turmoil that followed in Honduras in 2009. The economy showed a modest recovery since 2010, posting a GDP growth rate of 3.6 percent in 2011 and 3.3 percent in 2012. The projections for 2013 call for a GDP growth rate of 3.3 percent. The macroeconomic condition in Honduras has deteriorated. Management of public finances has lacked discipline, with fiscal deficits higher than planned, prompting the authorities to declare a fiscal emergency in August, 2012. The Government's mid-year projected fiscal deficit of 4.5 percent for the year compared with 3.2 percent targeted in the 2012 budget. The current account balance, which was -6.2 percent in 2010, reached -8.7 percent in 2011, and is estimated at -9.9 percent for 2012. International reserves have declined significantly, and are estimated to cover only three months of imports.

2. Overall, over sixty percent of the people in Honduras live below the poverty line. Many of them live in rural areas where seventy five percent of the population is estimated to live in poverty including most people that are in extreme poverty. Honduras ranks 121 out of 187 on the Human Development Index. Therefore, inclusive growth where the rural poor benefit from economic development has become an imperative in Honduras. An important and unique additional development challenge in Honduras is crime and violence. The country presently has one of the highest homicide rate in the world. An environment of weak governance, limited economic opportunities, and a lack of many basic services/fragmented social safety nets have given rise to organized crime such as narco-trafficking and youth gangs. Crime and violence are challenges that persist in urban as well as rural areas.

Sectoral and Institutional Context

1. The Energy Sector

3. The Honduran energy consumption, based on the National Energy Balance, is comprised mainly of imported oil products (42 percent) and firewood (43 percent). Oil products are mainly for power generation and transport while firewood is mostly used for cooking , particularly in rural areas. Over sixty nine percent of the population relies on firewood for cooking since there is limited availability of modern cooking options. The remaining energy is from hydropower (11 percent) and sugar cane bagasse (4 percent) – both for power generation.

The Power Sector and Access to Electricity

4. With regards to electricity generation capacity, Honduras had a hydro-dominated system till the mid-1990s that has since gradually given way to a thermo-dominated one, with the country now depending on costly imported fuels for about 63 percent of its generation capacity . The power sector in Honduras is largely state-owned and vertically integrated. The Empresa Nacional de Energía Eléctrica (ENEE) owns about 40 percent of generation and 100 percent of the transmission and distribution systems; and is predominantly a single buyer (monopsony) of electricity for the national power system. ENEE is also responsible for the operation of the National Interconnected System and the Load Dispatch Center. The regulatory commission for energy (Comisión Nacional de Energía, CNE) and the Ministry of Natural Resources and Environment (Secretaria de Recursos Naturales y Ambiente, SERNA) which are responsible for policymaking, have lacked sufficient capacity and political support to carry out many of their functions.

2. Rural Energy Services

5. Access to reliable and affordable energy services particularly in rural areas is still limited, negatively affecting people’s quality of life and hampering socioeconomic development. Efforts to implement comprehensive sustainable rural energy programs targeting electrification and expansion of efficient use of firewood have so far been hindered by the lack of an integrated rural energy policy and the weakness of the institutional framework for the rural energy sector.

Access to electricity

6. Grid-connected. ENEE’s estimates that as of December 2010 electricity grid coverage

reached over 81 percent of the population. This represents a substantial increase since 2000, when access was barely over 55 percent and shows significant progress towards the GoH's goal to reach 85 percent coverage by 2015 . While the access rate in urban areas is nearly 100 percent, the ENEE electricity grid reached only 63 percent of the rural population. A sizable 1.5 million people predominantly in rural Honduras remain without access to electricity.

7. Off-grid. It is estimated that upwards of 10 percent of the rural population (over 80,000 households with more than half a million people) are beyond the reach of the national electricity grid due to the economic reasons previously indicated. These households are dispersed across isolated areas, difficult to access, and are often typified by having relatively low levels of demand for domestic electricity . These households are not included in ENEE's investment plan, which only contemplate grid-based expansion. Therefore, rural electrification efforts beyond ENEE that will complement the utility's efforts are needed if Honduras is to achieve universal access, and ensure that rural communities share the benefits of economic development.

8. Household-Level Solutions with Solar Home Systems (SHS): Off-grid electrification using renewable energy sources has emerged as a solution to fill this void in Honduras. A number of programs have emerged to serve the predominantly unconnected rural population, so far distributing an estimated 16,000 solar home systems (SHS). They include the PROSOL program implemented by the Honduran Social Investment Fund (FHIS) and the EnDev-HO Program , among others. Each program has made modest contributions with regards to the overall off-grid electrification challenge, but have demonstrated modalities that can be potentially scaled-up for greater impact. However, many of these programs have been scattered and have lacked any central coordination limiting their scope and scale. A policy and program framework that would better coordinate these efforts under a consistent set of principles would help maximize their impacts.

9. These efforts can be scaled-up by creating sufficient incentives for the private dealers to further expand sales in areas where it is economical. In fact, the GoH is seeking to capitalize on existing capacity and momentum by augmenting the PROSOL initiative with additional financing towards this end. EnDev and other similar programs also can expand within the areas they operate in; and could play a key role in immediately increasing access to modern electricity services in rural areas. However, stretching farther into more dispersed and remote areas will require new business models, which will need to be designed, piloted and expanded in order to continue to provide access to increasingly harder to reach households..

10. Clustered Renewable Energy Solutions: There is also a third category of unelectrified households. These are households that are too far from the grid to be economical for ENEE to connect, but are sufficiently clustered to create relatively densely populated rural communities that are best served through stand-alone, isolated renewable energy based electricity (mini) grids. About 500 kW of hydropower power plant capacity have been installed to date, supplying electricity to around 8,000 households, in small-scale plants ranging from less than 1 kW to 100 KW under the EnDev-HO Program and also with the support of the European Union, UNDP and GEF. Additional sites have already been pre-identified for development of stand-alone hydropower projects in the Departments of Colón and La Mosquitia. Assessing the feasibility of these small-scale hydro opportunities to contribute to the overall electrification target is important to progressing towards universal access to electricity.

Access to efficient cooking solutions

11. A majority of households in Honduras, even ones with access to electricity, still use firewood as the main source of energy for cooking. In urban and peri-urban areas, it is estimated that 55 percent of homes use firewood, of which 21 percent combine wood with other fuels. In rural areas, the proportion is significantly higher with 82 percent of the population relying on firewood. Household cooking is typically undertaken with a traditional stove (fogon) that is often not very efficient (efficiency of 5 to 10 percent).

12. The use of firewood in inefficient cookstoves has a number of implications ranging from financial effects, the use of natural resources, and human health impacts. In rural Honduras, purchases of firewood can represent 9-17% of annual household income for the poorest 20% of households. For households that, instead of purchasing it, collect it directly from the forests, this activity can require between two and ten hours per week. On environmental impacts, studies estimate that Honduras' forests are being depleted at a rate ranging from 28,000-67,000 hectares per year. While the leading cause of deforestation is due to fire (61%), firewood extraction is estimated to account for about 14 percent, with an annual total consumption of firewood for cooking of 6.4-7.5 million m³. A recent independent verification of a carbon finance project accepted the estimate that 59 percent of the firewood extracted in Honduras is non-renewable. In regards to the negative health effects, there is substantial evidence from around the world that the inefficient combustion of solid fuels in low quality stoves can be a significant health hazard. The high number of hours women and young children spend in the kitchen places them at risk to diseases such as Chronic Obstructive Pulmonary Disease (COPD). On the basis of a World Health Organization (WHO) and United Nations Development Program (UNDP) study, the number of deaths from COPD due to solid fuel use in Honduras may be greater than 900 people per year.

13. Honduras has experience with clean and efficient cookstoves since the 1970s. Most recent efficient cookstove dissemination initiatives have been sponsored by a variety of stakeholders including the government, private institutions, international development partners, and NGOs, with often limited coordination amongst these efforts. The Justa stove promoted under most of these programs has been well received by users, and can be about 40 percent more efficient. However, penetration of these cookstoves within the wider population is still limited, with only a 10 percent share in rural areas and three percent in urban area, even though there is an estimated 800,000 traditional cookstoves in use that could be replaced with cleaner, more efficient ones. Therefore, it will be important to review the entire supply chain for the manufacture, financing, and delivery of improved cookstoves, so it can build upon the successes of existing programs and scale-up to reach a wider group of beneficiaries and can be sustained over time.

Relationship to CAS

14. The proposed project is included in the 2012-2014 Country Partnership Strategy (CPS) for Honduras. The CPS is designed to respond to the Honduras Country Vision and National Plan. The World Bank's strategic engagement to support the goals in the CPS focuses on the following areas: i) Citizen security, ii) Expanding opportunities through reduced vulnerabilities, and iii) Enhancing good governance. The second area of strategic focus includes "energy investments" as a means to expand opportunities through reduced vulnerabilities. More specifically, the CPS identifies the proposed SREP project as a key energy investment that will help "strengthen the national regulatory framework" in support of increased investments in "rural electrification through small-scale renewable sources." It is also well aligned with the Bank's overall energy sector objectives

including the Sustainable Energy for All (SE4ALL) goal of providing universal access to modern energy services by 2030.

II. Proposed Development Objective(s)

Key Results (From PCN)

The key results expected from the proposed project are:

- (i) Development of business modalities/structures that promote access to clean energy
- (ii) Increase in access to electricity from renewable energy sources promoted
- (iii) Increase in access to efficient cookstoves promoted
- (iv) Energy generated from renewable energy sources

Other important impacts such as improvement in the quality of life of the poor, environmental impacts and health benefits, which are difficult to easily quantify, will be qualitatively assessed. The specific indicators, baselines, and targets will be defined during project preparation.

III. Preliminary Description

Concept Description

The proposed project consists of the following three components:

17. Component 1: Strengthening Policy and Regulatory Framework (Total: USD 1.00 million - USD 0.85 million SREP-WB, USD 0.15 million GoH). The main goal of this component is to create a more conducive regulatory structure and guidance that would better facilitate greater rural electrification utilizing renewable energy and access to modern cooking solutions. A key activity is the preparation of an indicative Rural Electrification Master Plan that would provide an umbrella policy, which would provide clarity and guide the various scattered electrification efforts including new activities in a cohesive manner that is necessary to progress towards universal electrification. The Master Plan will provide a framework for the development of rural electrification at a national scale by identifying the potential markets for rural electrification, proposing the least-cost technical options to serve those markets, estimating the corresponding investment required, and providing the main technical, social and environmental constraints to be considered. The component will also support the preparation of any other supporting policies and regulations that are identified during preparation and implementation as being important to achieve the overall electrification and energy access goals. .

18. Component 2 : Increasing Rural Energy Access

□ Component 2A: Off-Grid Rural Electrification (Total: USD 8.50 million - USD 7.0 million SREP-WB, USD 1.50 million GoH). The aim of this sub-component is to assist the GoH develop a national program that will progressively help achieve universal connectivity, particularly focusing on targeting mancomunidades (regional communities) that the grid expansion programs are unlikely to serve. It will seize on the existing momentum and private sector capacity that has already been built and look to supporting immediate scale-up of access in areas where there is scope for expansion under existing modalities. The component will also develop specific additional business models that will reach more deeply into rural areas with dispersed populations that would remain

unserved under present modalities (i.e. the private dealer model). The effort will primarily focus on household (and community facilities) level electrification through solar photovoltaic systems, and where there are opportunities for off-grid clustered solutions, very small hydroelectric schemes will be considered. The component will be prepared in coordination with other programs including the World Bank funded PROSOL, in order to support existing efforts and ensure complementarity; and include technical assistance to build institutional capacity for effective implementation. The areas of intervention and specific business models that will be supported under the proposed project, the scale of the initial intervention, project impacts including gender impacts, scope for promoting productive activities, and implementation arrangements will be determined during project preparation.

□ Component 2B: Efficient Cookstove Program (Total: USD 1.93 - USD 1.43 million SREP-WB, USD 0.50 million GoH). This component will be designed to scale-up access to more efficient cooking solutions for the poor in mainly rural and some peri-urban areas. It will develop a comprehensive national program targeting the entire value chain for delivering cookstoves that will create a national strategy and enabling framework, establish standards and certifications, identify financing mechanisms and develop incentives, and build capacity within the private and public sector to implement the program. The component will identify and help strengthen existing efficient business models which take into account socio-cultural preferences (including gender considerations), also helping to design and establish new ones, in order to sustainably and cost-efficiently scale-up the use of clean and efficient cookstoves. It is envisaged that aspects of the program that can most effectively be implemented through the public sector (i.e. mainly initiatives that improve market conditions and investment climate such as development of awareness campaigns, establishment of cookstove standards and certification processes, and monitoring and evaluation frameworks, among others) will be implemented through the proposed project, while various other stakeholders will implement the private aspects, including through a SREP funded related project supported by the Inter-American Development Bank (FOMIN – one of the private sector arms of IDB). The preparation of this component is being carried out in full coordination with IDB as well as other private stakeholders in the cookstove industry.

19. Component 3: Project Management Support (including Monitoring and Evaluation) (Total: USD 0.61 million - USD 0.51 million SREP-WB, USD 0.10 million GoH). Support implementing agency to coordinate a national rural energy access program including performing monitoring and evaluation.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04	x		
Forests OP/BP 4.36			x
Pest Management OP 4.09		x	
Physical Cultural Resources OP/BP 4.11	x		
Indigenous Peoples OP/BP 4.10	x		
Involuntary Resettlement OP/BP 4.12			x
Safety of Dams OP/BP 4.37		x	

Projects on International Waterways OP/BP 7.50			x
Projects in Disputed Areas OP/BP 7.60		x	

V. Financing (in USD Million)

Total Project Cost:	13.00	Total Bank Financing:	0.00
Total Cofinancing:		Financing Gap:	0.00
Financing Source			Amount
Borrower			3.00
Strategic Climate Fund Grant			10.00
Total			13.00

VI. Contact point

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