Climate Investment Funds

SREP/SC.6/6
October 26, 2011

Meeting of the SREP Sub-Committee
Washington, D.C.
November 1, 2011

Agenda Item 6

INVESTMENT PLAN FOR HONDURAS

Proposed Decision by SREP Sub-Committee

The SREP Sub-Committee, having reviewed the *Investment Plan for Honduras* (document SREP/SC.6/6),

a) endorses the Investment Plan as a basis for the further development of the projects foreseen in the plan and takes note of the requested funding of USD30 million in SREP funding from the initial allocation to Honduras. The Sub-Committee requests the Government of Honduras, in the further development of the proposed projects, to take into account comments submitted by Sub-Committee members by November 15, 2011.

b) reconfirms its decision on the allocation of resources, adopted at its meeting in November 2010, that all allocation amounts are indicative for planning purposes and that approval of funding will be on the basis of high quality investment plans and projects. The range of funding agreed for Honduras under the initial allocation is up to USD30 million in SREP resources;

c) further reconfirms that a reserve from the pledges to SREP as of November 2010 has been established, and that the Sub-Committee will agree on allocations from the reserve to project proposals included in the investment plans once the investment plans for all six pilot countries have been endorsed and the Sub-Committee has approved criteria for allocating the reserve amount.

d) approves a total of USD600,000 in SREP funding as preparation grants for the following projects to be developed under the investment plan,
   i. USD300,000 for the project "*Component 2 – Grid-Connected RE Development Support (ADERC)*" (IDB)
   ii. USD300,000 for the project "*Component 3 – Sustainable Rural Energization (ERUS)*" (World Bank)

e) takes note of the estimated budget for project preparation and supervision services for projects included in the investment plan and approves a first tranche of funding for preparation and supervision services as follows:
   i. USD214,000 for "*Program A": Component 1-FOMPIER and Component 3-ERUS* (IBRD)
   ii. USD250,000 for the "*Program C": Component 1-FOMPIER and Component 2-ADERC* (IDB public sector)
   iii. USD221,000 for the "*Program D": Component 2-ADERC and Component 3- ERUS* (IDB private sector)

Government of Honduras

Climate Investment Funds

PROGRAM ON SCALING-UP RENEWABLE ENERGY IN LOW-INCOME COUNTRIES (SREP)

SREP Investment Plan for Honduras

October 2011

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ACRONYMS

ADERC	Apoyo al Desarrollo de las Energías Renovables en Conexion con la Red (Grid-connected Renewable Energy Development Support)
AHPPER	*Asociación Hondureña de Pequeños Productores de Energías Renovables* (Honduran Association of Small Renewable Energy Producers)
BCIE	*Banco Centroamericano de Integración Económica* (Central American Bank for Economic Integration)
BEN	*Balance Energético Nacional* (National Energy Balance)
BIP	*Banco Integrado de Proyectos* (Integrated Project Bank)
BOE	Barrel of oil equivalent
CAFTA	Central American Free-Trade Agreement
CDC	*Centro de Despacho de Carga* (Load Dispatch Center)
CNBS	*Comisión Nacional Bancaria y de Seguros* (National Banking and Insurance Commission)
CNE	*Comisión Nacional de Energía* (National Energy Commission)
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
COHEP	*Consejo Hondureño de Empresa Privada* (Honduran Private Enterprise Council)
DGCP	Dirección General de Crédito Público (General Directorate of Public Credit, SEFIN)
DGE	*Dirección General de Energía* (General Directorate of Energy, SERNA)
DGID	*Dirección General de Instituciones Decentralizadas* (General Directorate of Decentralized Institutions, SEFIN)
DGIP	*Dirección General de Inversión Pública* (General Directorate of Public Investment, SEFIN)
DSF	Debt Sustainability Framework
EAP	*Escuela Agrícola Panamericana* (Panamerican Agricultural School, El Zamorano)
ECLAC	Economic Commission for Latin America
ENEE	*Empresa Nacional de Energía Eléctrica* (National Power Utility)
ERP	*Estrategia para la Reducción de la Pobreza* (Poverty Reduction Strategy)
ERUS	*Energización Rural Sostenible* (Sustainable Rural Energization)
EU	European Union
FHIA	*Fundación Hondureña de Investigación Agrícola* (Honduran Agricultural Research Foundation)
FHIS	*Fondo Hondureño de Inversión Social* (Honduran Social Investment Fund)
FOMPIER	*Fortalecimiento del Marco de Políticas e Institucional para Energias Renovables* (Strengthening the Renewable Energy Policy and Institutional Framework)
FOSODE	*Fondo Social de Desarrollo Eléctrico* (Social Fund for Electricity Development)
FR	Fiscal revenue
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse gases
GIZ	*Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH*, German cooperation agency
GoH	Government of Honduras
HNL	Lempiras (currency of Honduras)
IBRD	International Bank for Reconstruction and Development
ICAs	international cooperation agencies
ICF	*Instituto de Conservación Forestal* (Forest Conservation Institute)
IDB	Inter-American Development Bank
IFC	International Finance Coroporation
IFIs	International financial institutions
INE	*Instituto Nacional de Estadísticas* (National Statistics Institute)
IP	Investment Plan
JICA	Japan International Cooperation Agency
LMSE	*Ley Marco del Subsector Eléctrico* (Electricity Subsector Framework Law)
LPG	liquefied petroleum gas
MDBs	Mulitlateral development banks
MSMEs	Micro, small and medium-sized enterprises
MUSD	Million US dollars

NGOs	Non-governmental organizations
PLANES	*Plan Nacional de Electrificación Social* (National Social Electrification Plan)
PPA	Power purchase agreement
PROSOL	*Programa de Electrificación Rural con Energía Solar* (Solar Energy-based Rural Electrification Program)
PV	Photovoltaic
PVD	Present value of debt
RE	Renewable energy
RETs	Renewable energy technologies
SDP	Secretaría de la Presidencia (Ministry of the Presidency)
SEFIN	*Secretaría de Finanzas* (Ministry of Finance)
SEPLAN	*Secretaría de Planeación* (Ministry of Planning)
SERNA	*Secretaría de Recursos Naturales y Ambiente* (Ministry of Natural Resources and Environment)
SIAFI	*Sistema Integrado de Administración Financiera* (Integrated Financial Management System)
SICA	*Sistema de Integración Centroamericana* (Central American Integration System)
SIGADE	Sistema de Gestión y Administración de Deuda (Debt Management System)
SIN	*Sistema Interconectado Nacional* (National Interconnected System)
SMEs	Small and medium-sized enterprises
SREP	Program on Scaling-Up Renewable Energy in Low-Income Countries
STMC	Short-term marginal cost
SWERA	Solar and Wind Energy Resource Assessment
TDS	Total debt service
TGR	*Tesorería General de la República* (General Treasury of the Republic)
UAP	*Unidad de Administración de Proyectos* (Project Management Unit, SEFIN)
UGEFCC	*Unidad de Gestión Económica y Financiera de Cambio Climático* (Unit for the Mobilization of Economic and Financial Resources for Climate Change, SEFIN)
UNDP	United Nations Development Program
USAID	United States Agency for International Development
USD	United States dollars
WBG	World Bank Group
WHO	World Health Organization
WTI	West Texas Intermediate (benchmark oil price)
XGS	Exports of goods and services

EXECUTIVE SUMMARY

Introduction

1. This Investment Plan (IP) was prepared under the leadership of Government of Honduras (GoH), which established a SREP technical committee with representatives of the Ministry of the Presidency (SDP), Ministry of Finance (SEFIN), Ministry of Natural Resources and Environment (SERNA), National Energy Commission (CNE), *Empresa Nacional de Energía Eléctrica* (ENEE), and a representative of the private sector from the Honduran Association of Small Renewable Energy Producers (AHPPER). The IP took into account inputs received from a wide array of stakeholders, including local Banks and NGOs involved in issues relevant to the program, which were consulted through a series of events. This IP also benefited from the experiences and inputs from Inter-American Development Bank (IDB), International Finance Corporation (IFC) and the World Bank. This IP complements the GoH's policies and programs for developing the use of renewable energy sources and thus promote a faster progression of the country along a low-carbon development path.

Country Context

2. The Republic of Honduras is the second largest country by area in Central America with 112,492 km². In May 2010 its total population was 8,041,654, with a population growth rate of 2.1% and a per capita GDP of USD1,900. Members of indigenous and Afro-Honduran groups represent 12% of the total. Honduras' system of government is democratic with presidential elections every four years. Its economically active population accounts for 42.1% of the national total, of which 96.0% are employed, 54.1% located in rural areas and 45.9% in urban areas.

3. In relation to climate change, Honduras was classified in 2004 by the United Nations among the top 20 most vulnerable countries in the world in terms of flooding and hurricanes damages. With every passage of tropical storms and hurricanes, severe flooding and landslides occur with consequential losses of human life and property, demonstrating the country's vulnerability.

4. To address both the global challenges of climate change and the problem of growing dependence on imported oil, the country has defined as one of its objectives, as set out in the *Law on Country Vision and National Plan,* the achievement of a 'productive Honduras', generator of opportunities and employment which uses its resources sustainably and reduces environmental vulnerability.

5. In this context there is a strong will of the Government of Honduras and of the various actors in the Honduran society to use the benefits of SREP to achieve their goals in energy, in a way that will also improve environmental, economic, social and productive development.

Renewable Energy Context

6. The Government of Honduras has identified two major areas where the development of renewable energy (RE) can play a major role to promote a faster progression of the country along a low-carbon development path: (i) the supply of additional power to serve industrial, commercial and residential customers connected to the grid; (ii) the provision of sustainable rural energy services, in particular the scaling-up of access to electricity services and to clean energy for cooking.

7. **Grid-connected Renewable Energy Generation.** In the 1994, the Honduras government passed a law to reform the electricity sector (No 158-94), which vertically separated generation from transmission and distribution and introduced private sector participation and a competitive wholesale competitive market. While the law was successful in attracting private investment, it favored fossil-fuel based options for two reasons. First, oil price remained low during the 90s and early 2000s, and second, these

technologies were far less capital-intensive than hydroelectricity and thus easier to finance for the private sector. As a consequence, very quickly the country changed from having a generating capacity based entirely on renewable sources (almost 100% of electricity generation in 1990) to one dominated by thermal plants (52% in 2010). The new heavy dependence on oil creates serious problems in the Honduran economy. Hydrocarbon imports jumped from 15.73% of total exports in 2001 to 22% in 2010, and the oil bill tripled from USD395.1 million 2001 to USD1.49 billion in 2010. In 2008 spending on hydrocarbons accounted for 14% of GDP, the highest in the Central American region according to figures from the Economic Commission for Latin America and the Caribbean (ECLAC). To reduce the vulnerability of the economy to oil price volatility, the Honduran National Congress granted by Decree 267 of 1998 a series of tax incentives to promote electricity generation from renewable energy systems and cogeneration with capacity not exceeding 50 MW. In addition, Decree 267-98 granted power generation companies better conditions for the sale of electricity, including (i) long-term electricity sales contracts (up to 20 years) with ENEE and (ii) third-party access to the transmission grid (wheeling) and authorization to sign bilateral contract with large consumers[1]. In 2007, to further speed-up the development of renewable energy, the National Congress issued a new law (70-2007) granting additional benefits to power generation from renewable resources, including several tax exemptions and improvements in Power Purchase Agreements (PPAs) signed with ENEE.

8. Another significant advance came in 2010 when for the first time ENEE held a public bidding process to purchase electricity from renewable energy sources. Forty-eight projects were awarded PPAs for a total of 708 MW of renewable energy and an estimated investment of about USD2.50 billion.

9. With all these initiatives, the Government of Honduras intends to reverse the structure of the electricity sector by 2022 to a ratio of 60% renewable and 40% fossil; thus complying with the provisions of the Country Vision and National Plan Law constituted into State Policy by Decree No. 286-2009 of National Congress.

10. However, despite these successive policy efforts, a series of barriers continue to hinder the development of grid-connected renewable energy in Honduras. There are still significant gaps in regulation when it comes to non-hydro renewable energy technologies. For instance, appropriate standard PPA contracts as well as operating standards are missing for several technologies. Another barrier is the absence of technical guidelines to inform developers on how to comply with the procedures to obtain construction and operation licenses, among other things. In addition, the method for determining marginal costs, tariffs and incentive systems does not reflect all the benefits renewable generation can provide to the country's electricity system (i.e. voltage stabilization, transmission and distribution loss reductions, etc.). Purchase tariffs are set by ENEE, not by CNE, the regulatory agency, thus exposing RE-based IPPs to conflict of interest within ENEE. While the first RE auction mentioned above has been successful in generating an unprecedented number of new projects, lack of access to long term financing, lack of equity investment, insufficient capacity of project developers, and high appraisal costs for local financial institutions still prevent most of these projects from materializing. In addition, in many cases transmission infrastructure is missing and the corresponding investment would be too costly if born alone by small project developers.

11. **Off-grid stand-alone Renewable Energy Systems in rural areas**. In the last decade, considerable efforts were made to expand the electricity coverage in Honduras. Thanks to a combination of domestic and external finance, USD463 million were invested in social electrification projects during the 1999-2010 period. As a result, the grid coverage jumped from 39.1% in 1990 to 81.3% in 2010, with close to 100% in urban areas and 63.4% in rural areas. However, the remaining 26.6% of rural households still without access to basic electricity services are scattered in low-density areas and would be far more expensive to connect to the grid. On the basis of the limited but successful local experiences and lessons from large-scale programs in other countries, the GoH has acknowledged that individual renewable

[1] Consumers served at a voltage of 34.5 kV minimum with maximum demand of at least 1,000 kW.

energy systems, in particular solar photovoltaic (PV) stand-alone systems should be used to deliver the basic electric services most needed in the rural areas.

12. Although the grid expansion model applied by FOSODE in line with PLANES has been effective in extending coverage by conventional means, it has performed poorly in promoting the implementation of decentralized options through PV systems or micro/small hydroelectric stations, which can be more efficient and profitable because they do not depend neither on consumption of fossil fuels nor on costly transmission and distribution line extensions.

13. Although there have been experiences in developing electrification programs and projects for isolated communities with renewable sources, a specific or detailed **sustainable model** of how to implement mass electrification with renewable options has yet to be designed. This is partly because the experiences of rural renewable energy projects have not been systematized or disseminated. Promotion of renewable energy in rural areas has taken place only at a limited scale and with no planning or coordination between actors. While the Government has been allocating significant resources to finance grid extension for rural communities, financing has been very limited for renewable energy-based decentralized electrification solutions. More generally, the objective of rural electrification has been suffering from the lack of an integrated rural energy policy.

14. **Clean Energy for Cooking.** Rural areas, and to a large extent urban and peri-urban poor areas are also suffering from a second energy divide related to cooking. At the moment in most households, cooking relies on unsustainable, inefficient and polluting wood-fired cooking technologies. In urban and peri-urban areas, 55% of homes use firewood, of which more than a fifth (21.3%) combine wood with other fuels. In rural areas firewood still dominates in about 81.5% of households, 59.2% as primary source and 21.8% mixed: either wood-electricity or wood-LPG.

15. The use of firewood in traditional open stoves has negative effects on the health of the population, especially women and children. According to the World Health Organization (WHO), the use of biomass fuels in open stoves causes the premature deaths of approximately 1.6 million people every year around the world due to inhalation of pollutant gases[2], with the victims being mainly women and small children. In addition, the handling and transport of firewood leads to corresponding social problems, and is linked with child labor and more broadly to gender inequality issues. Finally, the demand for firewood from urban centers contributes to deforestation.

16. The energy-intensive nature of the traditional food and cooking culture (especially cooking tortillas) makes a massive shift to costly imported LPG un-economical for most of the Honduran population. As a result, scaling-up the dissemination of improved cooking stoves on the basis of successful but still limited local experiences has been retained by the Honduran government and consulted stakeholders as the preferred option to facilitate access to clean and sustainable energy for cooking.

17. A number of isolated cook stove dissemination efforts have been carried out, but have not led to the development of sustainable business models. The experience in Honduras shows that it would be particularly relevant to establish minimum technical performance and social acceptance standards and a certification scheme, as well as guidelines for the access to carbon markets.

Objectives and Expected Outcomes

18. The objective of the proposed Investment Plan is to create an enabling environment for scaling-up the use of renewable energy for (i) grid-connected power generation as an alternative to increasing dependence to oil products; (ii) a comprehensive approach for scaling-up the provision of sustainable rural energy services (rural "*energization*"), including off-grid stand-alone systems to provide basic

[2] Incomplete combustion of firewood generates harmful gases such as methane, soot and carbon monoxide. It also generates black carbon, a powerful greenhouse effect agent.

electricity services in poor rural areas too distant to be connected to the conventional grid, and clean and sustainable cooking technologies.

19. The Investment Plan has been formulated in the framework of the country's policies for the energy sector. It presents a range of solutions to address the barriers that have held back the exploitation of renewable energy sources and that were identified by the SREP National Technical Team, as well as by the various actors consulted during the public consultation process. By addressing these barriers the Investment Plan is aimed at achieving a transformative impact, whose effectiveness will be road-tested by implementing simultaneously a first series of investments.

20. The Investment Plan includes a diverse set of activities and utilizes a programmatic approach. These include (i) a component with series of activities to contribute to a policy and regulatory framework more favorable to RE development; (ii) a component to support the development of grid-connected RE projects, which includes a financing instrument, and a transmission sub-component to facilitate grid connection of projects in regions with favorable renewable resources; and (iii) a rural energization component, which includes both rural electrification, with emphasis on productive activities, and access to appropriate technologies for cooking.

21. Consequently, implementing the various activities financed by SREP will encourage the use of renewable energy sources, thus contributing to meeting the challenges of climate change mitigation, and securing various benefits for the country's development, such as energy security, reduced local air pollution, new economic opportunities for development —in terms of employment generation in productive sectors and poverty reduction—, better quality of life, and higher gender equality, particularly in rural areas.

Program Description and Physical Targets

22. The Investment Plan proposed for SREP support is thus structured around three main components that have been designed to address the above mentioned barriers and achieve a transformative impact:

- Component 1 - Strengthening the RE Policy and Regulatory Framework (*Fortalecimiento del Marco de Políticas e Institucional para Energías Renovables - FOMPIER*),
- Component 2 - Grid-Connected RE Development Support (*Apoyo al Desarrollo de las Energías Renovables en Conexión con la Red - ADERC*), and
- Component 3: Sustainable Rural Energization (*Energización Rural Sostenible - ERUS*).

Component 1 - Strengthening the RE Policy and Regulatory Framework (FOMPIER)

23. The objective of the FOMPIER component is to support the development and implementation of policies, laws, regulations, rules, standards and incentive schemes aimed at improving the integration of renewable energy in the energy sector by reducing risks and transaction costs and encouraging investment in renewable energy.

24. In particular, FOMPIER will support the elaboration of a long-term energy policy to promote a higher mix of RE and a low-carbon development strategy; legislation and secondary regulations for promoting RE development; standards and specifications appropriate for each renewable technology; incentives model (including tariffs) for the effective development of each renewable technology, and which fully reflects their associated benefits; technical standards for renewable energy technologies; guidelines for obtaining construction, operation and supply permits; definition of intra and inter-agency responsibilities, and development of capacities of governmental and nongovernmental agencies to allow for future expansion of mitigation activities, including renewable energy.

Component 2 - Grid-Connected RE Development Support (ADERC)

25. The ADERC component is aimed at supporting a first portfolio of projects, which will lower risk by means of demonstration and by means of the training and experience provided to stakeholders in the market —developers, financial institutions and communities— to create a catalytic transformation in the sector. In particular, ADERC will use the SREP funds for three purposes: (i) provide capacity building and technical assistance to projects and local banks; (ii) catalyze and maximize the amount of finance available from MDBs and other partners, as well as commercial financing available for investment in grid-connected RE-projects, and (iii) finance the extension of the transmission and distribution system to connect the RE projects supported by ADERC and its partners.

26. To catalyze commercial financing, a fund will be created under ADERC with resources from SREP and multilateral banks (with the possible involvement of other sources including pension funds, private investors and/or commercial banks), which will provide temporary financial support, including in the form of equity, to projects to enhance their bankability.

27. ADERC intends to achieve the following physical targets:

- 60 MW of additional installed capacity of grid-connected RE power generation, through 12 to 15 new projects.
- 208 MW of RE generation potential newly accessible through the expansion of transmission infrastructure.

Component 3: Sustainable Rural Energization (ERUS)

28. The main objective of the ERUS component is to develop sustainable models of large-scale, off-grid rural electrification based on renewable energy and to scale-up access to clean energy for cooking, drawing on experiences from other programs implemented in the country and abroad. The technologies to be considered in the component are photovoltaic solar, small-hydroelectricity, windmills and improved cooking stoves. By developing new business models and regulatory environment, ERUS will have a transformational effect, in particular by attracting private sector resources and expertise that will fuel the scaling-up of access to off-grid RE-based rural electrification and to clean and efficient cooking stoves. ERUS will build on existing social networks —especially NGOs— to ensure local appropriation, reduce the costs of intervention and maximize gender-related benefits.

29. ERUS will support capacity building activities, studies and investment projects to disseminate off-grid RE-based rural electrification systems and improved cooking stoves.

30. ERUS intends to achieve the following physical targets:

- Increase by 1.5% the electricity coverage in the country by giving access to electricity services to around 100,000 people located in isolated rural areas, in particular in indigenous and Afro-Honduran communities.
- Provide 50,000 people clean and efficient cooking stoves, thus delivering the above mentioned benefits associated to this technology, including a reduction in their firewood consumption by up to 70%.

Financing Plan and Instruments

Executive Summary Table 1: Summary of Investment Plan for Honduras (USD million)

Component	Private/ local investors	SREP Grants	Other SREP-con-cessional finance	MDBs	Bank loans	NGOs	ICAs	GoH	Total (MUSD)
General preparation and operation expenses									
IP Preparation Grant		0.375							**0.375**
Operation expenses for in-vestment implementation (5yrs)		1.025						0.2	**1.225**
Component 1: Strengthening the RE Policy and Regulatory Framework (FOMPIER)									
RE Policy		0.3					0.1	0.1*	**0.5**
Law & Regulations		0.3					0.1	0.1*	**0.5**
Energy Control Standards		0.3					0.1	0.1*	**0.5**
Capacity Building		0.8					0.1		**0.9**
Sub-total		*1.7*					*0.4*	*0.3*	***2.4***
Component 2: Grid-Connected RE Development Support (ADERC)									
Component Preparation		0.3							**0.3**
Pre-investment/equity	20.0								**20.0**
Risk Capital Fund			10.0	10.0					**20.0**
RE Projects Debt				60.0	60.0				**120.0**
Access infrastructure to RE potential		4.0		50.0				2.5	**56.5**
Studies/consultancies		1.2					0.1	0.1	**1.4**
Capacity building		1.2					0.2		**1.4**
Fiscal Support[§]								14.5	**14.5**
Sub-total	*20.0*	*6.7*	*10.0*	*120.0*	*60.0*		*0.3*	*17.1*	***234.6***
Component 3: Sustainable Rural Energization (ERUS)									
Component preparation		0.3							**0.3**
RE systems for isolated communities	6.0	6.0		6.0			4.0	2.0[‡]	**24.0**
Sustainable and efficient firewood use	2.0	2.0				1.0	2.0	0.5[‡]	**7.5**
Studies/technical designs/consultancies		0.95					0.5	0.1*	**1.55**
Capacity building		0.95					0.5		**1.45**
Sub-total	*8.0*	*10.2*		*6.0*		*1.0*	*7.0*	*2.6*	***34.8***
Total (SREP Stage 1)	**28.0**	**20.0**	**10.0**	**126.0**	**60.0**	**1.0**	**7.7**	**20.2**	**272.9**

Notes: * GoH contributions in kind and labor. [‡] GoH contributions in kind and labor and contributions by local governments. [§] Fiscal support includes USD 6M in tax exemptions and USD 8.5 M in incentives given to renewable energy tariffs, provided by ENEE

Executive Summary Table 2: Framework for Monitoring and Evaluation Results

Results	Indicators	Unit	Baseline	Target	Collection Respon-sibility	Data source
Direct project outputs and outcomes						
1. Increase in access to electricity	Number of rural beneficiaries with new access to electricity (coming from renewable sources[3])	# of people	100,000	200,000	ENEE	National Coverage Report
2. Increase in RE generation capacity and supply	RE generation capacity	MW	40[4]	100	ENEE	Electrical Statistics
3. Expansion of transmission infrastructure (to ensure access to RE generation potential)	New transmission capacity	km trans-mission lines and # of sub-stations		7 existing substations to be expanded, 4 new substations, and 207 km of new transmission lines	ENEE	Expansion Planning
4.Reduction in expenses for energy services	Marginal cost of electricity (grid)	USD/ MWh	107	TBD[5]	ENEE	ENEE
	Expenses for firewood purchase: a) rural, b) urban	HNL[6]	a) 14,560, b) 23,660	a) 5,824, b) 9,464[7]	SERNA	ICF/ SERNA
5. Increase in access to lower cost-lower emission energy technologies	New access to efficient cook stoves	# of additional cookstoves		50,000	SERNA	ICF/ SERNA
6. Reduction of GHG emissions	a) Tons of CO_2e emissions avoided – Grid connected generation	Tons CO_2e / year		152,424[8]	SERNA	SERNA
	b) Tons of CO_2e emissions avoided – efficient cook stoves	Tons CO_2e		TBD[9]	SERNA	SERNA/ ICF
7. New and additional funds for projects related to renewable energies	SREP funding leverage factor	ratio		1:9	SEFIN	SEFIN
Catalyzing and replication effect						
1. Increase in investments in renewable energy	a) RE investment of total investment in generation in the energy sector	%	TBD[10]	TBD[11]	SERNA/ SEFIN	SERNA/ ENEE
	b) Rate of new investment in RE generation capacity	USDM/ year	20[12]	50[13]	SERNA/ SEFIN	SERNA/ ENEE

3 Excludes large-hydro

4 This baseline generation capacity corresponds to the current small-hydro installed capacity, given that this is the technology that is expected to receive most of the SREP investment and financing of the grid connected generation (ADERC) component given the cost-effectiveness and readiness criteria to be applied.

5 The expected effect of new, lower-cost RE on marginal cost in the grid will be estimated during project preparation phase, or early in the implementation phase (once solid forecasts on new RE supply into the grid can be completed).

6 HNL: Honduran Lempiras. At the exchange rate of 1 USD = 19.11 HNL, equivalent baselines values in USD are a) USD 762, and b) 1,238. Targets are a) USD 305 and b) USD 496.

7 Baseline minus 60% (based on expected efficiency gains from efficiency cookstoves)

8 This initial estimate has been based on the target of 60MW of new small-hydro generation capacity, an expected capacity factor of 50%, and a grid emission factor of 0.58 (this grid emission factor will be confirmed upon adoption of an adequate methodology) .

9 This will be determined upon adoption of an adequate methodology. The calculation will be based on the average emissions from traditional open fires and the expected reductions in the consumption of wood from the use of efficient cookstoves.

10 Further research will be done during project preparation phase to determine average investment in generation in the energy sector in past years.

11 Will be determined during project preparation phase.

12 This baseline of investment in RE generation capacity corresponds to the estimated investment in small-hydro, given that this is the technology that is expected to receive most of the SREP investment and financing of the grid connected generation (ADERC) component given the cost-effectiveness and readiness criteria to be applied.

13 This target investment will include expected catalytic effect (investment on other small-hydro projects beyond those which the program will finance directly).

2. Improving the conditions favorable for production and use of renewable energy	b) enactment of policies, laws and regulations for renewable energy	Policies, Laws, Regulations		Long-term energy policy developed and enacted	SERNA /CNE	SERNA/ CNE
				Regulations and adaptations of promotion policies adequate to each RE technology	SERNA/ CNE	SERNA/ CNE
				Standards and specifications for each RE technology	SERNA/ CNE	SERNA/ CNE
	c) development of guidelines			Guidelines for obtaining construction, operation and supply permits	SERNA/ CNE	SERNA/ CNE
3. Increased access infrastructure to RE generation sources	RE generation potential newly accessible through new transmission infrastructure	MW		208[14]	ENEE	Electrical Statistics
4. Increase in energy security	a) Proportion of total power from renewable sources	% of total GWh	48	TBD[15]	ENEE	Electrical Statistics
	b) Proportion of installed capacity from renewable sources	%	38	56[16]	ENEE	Electrical Statistics
Transformative Impact						
Transformation of supply and use of energy by poor women and men in low income developing countries, with low levels of low carbon emission	a) % of energy services from modern sources, renewable with low carbon emission levels	%	51.0	TBD[17]	DGE/ SERNA	BEN
	b) proportion of population with access to electricity	%	81.3	85.0[18]	ENEE	National Coverage Report
	c) per capita energy consumption	BOE per capita	3.52	TBD[19]	SERNA	BEN/ INE
	d) per capita electricity consumption	kWh per capita	643	TBD[20]	No	BEN/ INE
	e) Time dedicated to the collection of firewood for use in cook stoves by i) women, and ii) men		TBD[21]	TBD	TBD	TBD
	g) Reduced deforestation pressure	Annual rate of defores-tation	TBD[22]	TBD	TBD	TBD

[14] This figure represents the amount of RE generation potential identified in previous studies and that –if the corresponding RE plants were built- the new transmission lines would be able to connect into the grid.

[15] Will be determined during project preparation phase.

[16] By 2015, from ENEE's Expansion Plan.

[17] Will be determined during project preparation phase.

[18] Target by 2015.

[19] Will be determined during project preparation phase.

[20] Will be determined during project preparation phase.

[21] Baseline and target numbers will be determined in the preparation phase (or early stages if program implementation), after adequate studies have been conducted.

[22] Baseline and target numbers will be determined in the preparation phase (or early stages if program implementation), after adequate studies have been conducted.

COUNTRY CONTEXT

General Socio-economic Context

31. The Republic of Honduras is the second largest country by area in Central America with 112,492 km² (see Figure 1). In May 2010 its total population reached 8,041,654, with a population growth rate of 2.1% and a per capita GDP of USD 1,900. Members of indigenous and Afro-Honduran groups represent 12% of the total. Honduras' system of government is democratic with presidential elections every four years. Its economically active population accounts for 42.1% of the nation's total, of which 96.0% are employed, 54.1% live in rural areas and 45.9% in urban areas. Women make up 51% of the population, and are the heads of 26% of households. Forty percent of women are employed, as compared to 80% of the male population.

Figure 1: Honduras Map and Location

32. In relation to climate change, Honduras was classified in 2004 by the United Nations among the top 20 most vulnerable countries in the world in terms of flooding, and it ranked as the most vulnerable to hurricanes. Severe flooding and landslides occur with every passage of a tropical storm or hurricane, with consequential losses of human lifes and property, demonstrating the country's vulnerability.

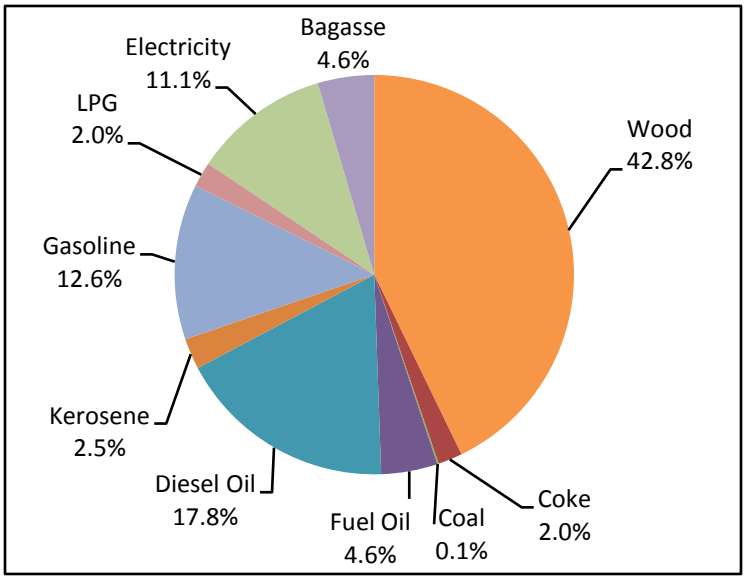
33. Over the past two decades, the Government of Honduras has made great efforts in promoting and protecting women's rights through the approval of legislation to ensure equal rights for men and women. However, living conditions for Honduran women are still complicated. Honduran legislation grants women the same ownership rights as men, yet women own only one-quarter of the land in the country because there still exist socio-cultural norms that recognize men as the landowners. Honduras has taken steps to strengthen the protection of women's physical integrity, but violence against them remains a common problem.

Energy Sector Context

National Energy Balance

34. Honduras is a country that possesses an energy matrix with a high consumption of oil products. Because it is not a hydrocarbon producer, Honduras has a resulting dependence on oil product imports. This energy dependence (which also produces GHG emissions) in 2009 represented 41.6% of total energy consumption, estimated at 28.35 million barrels of oil equivalent (BOE) (see diesel oil, fuel oil, coal, kerosene, gasoline, LPG and coke in Figure 2). According to the National Energy Balance[23] the remaining energy requirements were covered 43% by firewood[24], 11% by hydropower and 4.6% by sugar cane bagasse.

Figure 2: Honduras Energy Balance 2009



35. This heavy dependence on oil causes serious problems in the Honduran economy, jeopardizing investment in the Government's social programs (mainly in education, health and public safety). In 2001, hydrocarbon imports represented 15.73% of total exports when the average price of a barrel of WTI oil was USD25.29, but this ratio increased to 22% in 2010, after the average price per barrel rose to USD79.43 per barrel. As a result, the national oil bill jumped from USD395.1 M in 2001 to USD1.487 B in 2010. In 2008 per capita spending on hydrocarbons (oil and other products) was USD252.0 and spending on hydrocarbons accounted for 14% of GDP, the highest in the Central American region according to figures from ECLAC[25]. In addition, in 2008, Honduras had the highest consumption of oil products for electricity production in the Central American region, with 31% of the region's total, estimated at 17,878 bpd. Table 3 summarizes the trend of the country's energy indicators between 1980 and 2006.

[23] Prepared by the Directorate General of Energy (DGE), a department of the Ministry of Environment and Natural Resources (SERNA).

[24] Of which firewood represented 87% and charcoal and other biomass waste 13%.

[25] The Economic Commission for Latin America and the Caribbean, a UN agency

Table 3: Energy Indicators in Honduras

	1980	1985	1990	1995	2000	2004	2006
Energy consumption per capita (BOE/capita-year)	3.58	3,36	3.43	3.28	3.20	3.33	3.34
Final consumption of oil fuels (BOE/capita-year)	0.88	0.83	8.1	1.13	1.24	1.54	1.32
Firewood consumption (BOE/capita-year)	2.20	2.5	1.97	1.74	1.38	1.11	1.43
Electricity consumption per capita (kWh/capita-year)	237.8	289	395.7	497.3	644.2	784.8	844.5

Source: ECLAC 2007

36. Volatility in the world oil markets can push crude prices up, causing an increase in local energy prices. Higher costs of energy affect the country's productive sectors and generate higher prices in the basic basket of consumer goods, which has a negative impact primarily on the country's most vulnerable classes. Table 4 shows the significant difference between the purchase prices of thermal and renewable generation in Honduras, with the tariff structure shown by consumption sector. The country finds itself compelled to buy energy from fossil-fuel fired power plants, at an average price of 27 USD¢, while electricity can be generated from renewable energy at a far lower cost (7.7 to 12.4 USD¢/kWh).

Table 4: ENEE's Purchase Costs and Selling Prices of Electricity by Sector (May 2011)

Purchase cost of electricity		Selling price of electricity by sector			
Technology	Average cost ¢USD/kWh	Tariff	Sector	Unit price ¢USD/kWh	Maximum demand load price (USD/kw)
Thermal (fossil fuel)	27.28	A	Residential	16.35	N/A
Hydropower < 10 MW	7.43	B	Commercial	19.61	N/A
Hydropower > 10 MW	8.84	P	Small industrial	12.36	5.86
Biomass	7.8	D	Large consumers	11.57	7.72
Wind	12.43	E	Government	19.66	N/A
		F	Municipal < 2500 kWh/month	18.03	N/A
		G	Municipal > 2500 kWh/month	19.30	N/A
		H	Industries in priority areas	9.62	6.43
		1	Interruptible	9.62	6.43

Source: ENEE

37. In this area, the Government of Honduras aims to reconfigure the energy matrix to support lower carbon emissions and sustainable use of firewood.

Structure, Capacity and Electricity Generation

38. The Electricity Subsector Framework Law (LMSE) passed in 1994 defines an institutional structure and organization of the electric power industry which contains the basic elements of the standard model used virtually worldwide to promote the sustainable development of an efficient energy supply able to meet expected demand. The model introduced competition into segments of the industry where this was possible, economic regulation of segments which are natural monopolies; separation of the roles of policy making, regulation and provision of the service; and provision of electricity services by private agents.

39. The LMSE Law promotes competition in the wholesale energy market through vertical separation of generation, transmission/dispatch and distribution, free entry to all activities in the sector, open access to transmission networks and distribution, and the freedom of large consumers to choose their energy supplier. It also establishes energy transactions in a wholesale market. The monopolistic segments — transmission and distribution— are subject to price regulation based on economic costs.

40. The LMSE Law defined an institutional structure and an organization of the electricity sub-sector with role separation, in which policy making is the responsibility of an Energy Cabinet chaired by the president of the Republic, with the Ministry of Natural Resources and Environment (SERNA) as Cabinet Secretary and Coordinator; regulation activity is in the hands of the National Energy Commission (CNE). Empresa Nacional de Energía Eléctrica (ENEE) as a vertically integrated company is the sole distributor served by the transmission grid, and controlling all generation facilities, either as owner or through the respective Power Purchase Agreements (PPAs).

41. Although the Law established that the distribution grid must be privatized, the privatization was not completed. As a result, ENEE became the sole buyer for the entire system, besides being responsible for the operation of the National Interconnected System (SIN) and the Load Dispatch Center (CDC); thus it maintained its dominant presence in the sector. In the case of rural electrification, ENEE shares this function with municipalities, private investors and other institutions.

42. The bidding and direct purchase processes through which the contracts for electric power produced by private investors were awarded have given preference to fossil fuel-based thermal plants because, during the 1990s and early this century, the low price of oil and other fossil fuels, coupled with lower cost and installation time for power plant construction, meant that new private investors preferred installation of thermal plants.

43. An analysis of the trend in electricity generation in Honduras during the 1990 to 2010 period (Table 5) show how the country changed from having a generating capacity based entirely on renewable sources (almost 100% of electricity generation in 1990) to one dominated by thermal plants (52% in 2010).

Table 5: Net Electricity Generation in GWh

Year	Total	Hydro*	Diesel	Gas	Coal	Cogeneration
1990	**2,273.6**	2,278.6	5.0	0.0	0.0	0.0
1995	**2,797.6**	1,675.9	882.3	239.4	0.0	0.0
2000	**3,738.9**	2,262.3	1,440.6	35.5	0.0	0.5
2005	**5,624.8**	1,718.2	376.3	27.1	0.0	115.1
2006	**6,020.4**	2,070.1	3,840.8	9.5	0.0	100.0
2007	**6,333.6**	2,213.5	4,006.5	4.2	0.0	109.4
2008	**6,547.0**	2,290.2	4,007.8	57.0	6.9	185.2
2009	**6,591.8**	2,796.7	3,486.3	55.9	44.4	208.6
2010	**6,721.8**	3,080.2	3,441.1	11.9	46.5	142.1

* In 2009-2010, small and large-scale hydro accounted for 8% (39.9 MW) and 92% (486.5 MW) of total hydropower installed capacity, respectively. ENEE owns 88% and the private sector the remaining 12%.
Source: ECLAC

44. The construction of hydropower generation projects, including the large hydropower plants whose development was included in the power generation Master Plan, has been left at a virtual standstill since the start up in the early 1980s of the Francisco Morazan hydropower dam (El Cajón).

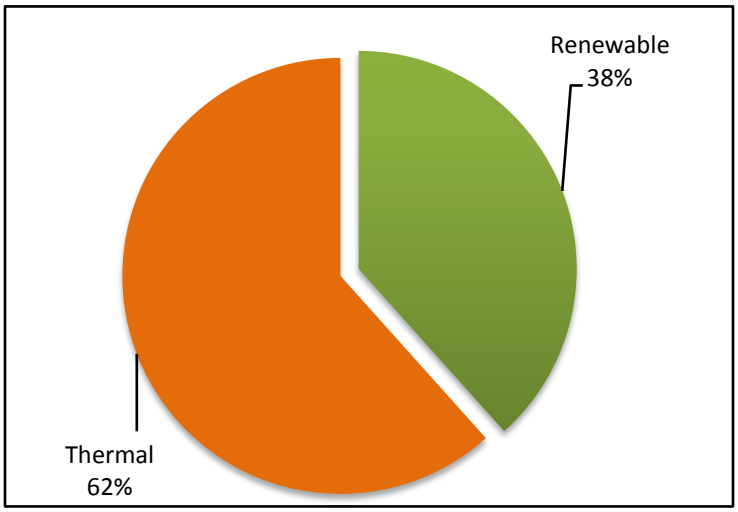
45. As Table 6 shows, since 2005 there has been a small increase in renewable energy capacity, following the incorporation of a total of 23 plants by the private sector, including 13 small hydropower run-of-the-river plants and 10 plants using biomass waste from the sugar mills by means of cogeneration systems based on sugar-cane bagasse and from African palm oil processing plants by means of methane capture systems (see Table 7). These projects were stimulated by fiscal and economic incentives contained in a law to promote renewable energy sources passed in 1998, with the aim of encouraging private participation in renewable generation and reversing the trend towards generation of thermal energy which existed at that time (see below, p. 15).

Table 6: Installed Capacity in MW

Year	Total	Hydro*	Diesel	Gas	Coal	Cogene-ration
1990	**532.6**	431.0	86.6	15.0	0.0	0.0
1995	**755.9**	434.2	205.7	116.0	0.0	0.0
2000	**919.8**	435.2	382.1	102.5	0.0	30.0
2005	**1,526.8**	479.1	915.4	72.5	0.0	59.8
2006	**1,588.0**	502.9	952.8	72.5	0.0	59.8
2007	**1,572.8**	519.7	912.8	72.5	0.0	67.8
2008	**1,597.1**	522.0	912.8	72.5	8.0	81.8
2009	**1,610.4**	526.4	912.0	72.5	8.0	91.5
2010	**1,610.4**	526.4	912.0	72.5	8.0	91.5

* See note under Table 5
Source: ECLAC

Figure 3: Share of Installed Capacity by Source, 2010



Source: ENEE

Table 7: Installed Renewable Capacity in Honduras by Private Producers, 2008 (in MW)

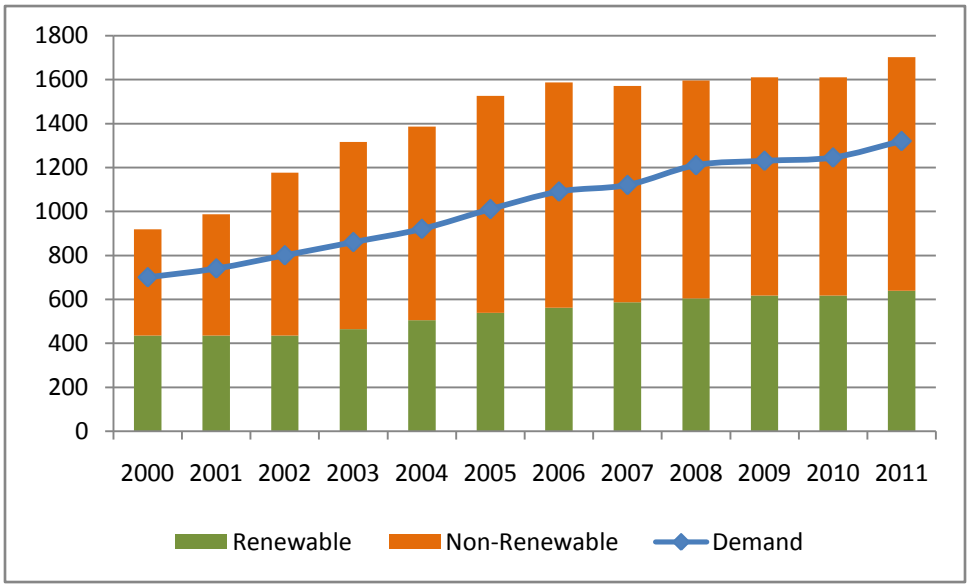
Technology	Project	Capacity
Run-of-the-river hydropower plants	La Nieve	0.48
	Zacapa	0.50
	La Esperanza	12.76
	Babilonia	4.00
	Yojoa	0.63
	Río Blanco	5.00
	Cececapa	2.86
	Cuyamapa	12.2
	Cuyamel	7.80
	Cortecito	3.19
	San Carlos	2.26
	Coronado	4.00
	La Gloria	5.80
	Subtotal	**61.48**
Sugarcane bagasse	AYSA	8.00
	La Grecia	12.00
	CAHSA	25.75
	AZUNOSA	4.00
	Tres Valles	7.80
	Chumbagua	14.00
	CELSUR	16.65
	Subtotal	**88.20**
Biomass from methane capture	Lean	0.50
	Ecopalsa	1.00
	Aguan	0.50
	Subtotal	**2.00**
GRAND TOTAL		***151.68***

Source: Based on government figures

46. In 2007, these private electricity generating projects using renewable sources supplied 1.81% of the total generation mix, but by 2008 they represented 7.19% of total electricity generation in the country.

47. The growth in electricity demand over the last decade has remained between 6% and 8% a year, with no growth in 2009 following the impact of the international financial crisis on the economy and the internal political crisis in that year. In the 2010 to 2011 period, ENEE estimated that demand would grow 3.5% (see Figure 4).

Figure 4: Electricity Supply and Demand (MW) (2000-2011)



Source: ENEE

48. Although energy procurement processes have had difficulties, the single buyer model has been successful in attracting private investment to expand generating capacity, and in recent years the development of renewable energy projects has been stimulated by a new Incentives Law for Renewable Energy enacted in 2007.

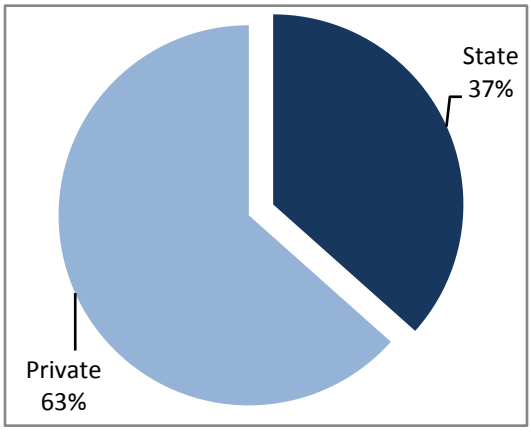
49. Since 1994, private investors have invested USD600 million in about 800 MW in medium speed diesel capacity and gas turbines. Additionally, until 2008 they had also invested USD210 million in the installation of 151 MW in small hydropower and biomass waste plants. As a result, private financing is now the norm for expansion of generating capacity. Figure 5 shows the (percentage) share of the private sector in the power generation sector in December 2010.

Electricity Coverage in Rural Areas

50. Following the crisis caused by Hurricane Mitch in October 1998, Honduras began a process of national reconstruction and transformation. With the help of the international community and participation of civil society, the country laid the base for a long-term partnership to contribute to the development and implementation of the Poverty Reduction Strategy (ERP). For the power sector the ERP defined a target of 85% electricity coverage[26] by 2015.

[26] Percentage electricity coverage, an indicator of the degree of the country's electricity development defined as "the ratio expressed by the number of households with access to electricity and the total housing stock."

Figure 5: Private and State Generation (2010)



Source: ENEE

51. Since in 1998 electricity supply has covered barely half the Honduran population, and the increase of 35 percentage points over a period of just over 15 years was seen as ambitious in terms of the enormous resources required. This requirement is not met by national resources. The Social Fund for Electricity Development (FOSODE), set up by the LMSE Law to finance electrification studies and works of social interest, is administered by ENEE and has an approved budget for 2010 of only HNL 25 million (just over USD 1 million).

52. In this context, ENEE, in its efforts to expand electricity coverage, has been engaging the assistance of friendly governments and national and international cooperation organizations to promote electrification of the country, especially rural areas. Thanks to a combination of domestic and external finance, investment in social electrification projects to extend the grid was USD463 million in the 1999-2010 period. Thus, as of December 2010, grid coverage reached 81.27%, with 99.94% in urban areas and 63.36% in rural areas.

Table 8: Changes in Electricity Supply

Year	Population ('000)	Inhabitants per household	Total households ('000)	Residential customers ('000)	Electrification rate (%)
1985	4,041	6.5	621.6	192.0	30.9
1990	4,758	6.5	732.0	286.1	39.1
1995	5,603	6.2	903.7	412.9	45.7
2000	6,363	5.9	1,069.4	588.9	55.1
2001.	6,530	5.9	1,106.8	649.4	58.7
2002	6,695	5.9	1,140.5	678.3	59.5
2003	6,861	5.8	1,174.8	718.9	61.2
2004	7,028	5.8	1,207.6	752.7	62.3
2005	7,197	5.8	1,240.9	809.8	65.3
2006	7,367	5.8	1,279.0	869.9	68.0
2007	7,538	5.8	1,308.7	953.6	72.9
2008	7,707	5.8	1,338.0	1,030.4	77.0
2009	7,877	5.8	1,367.5	1,101.2	80.5
2010	8,041	5.8	1,386.5	1,126.8	81.27

Source: ECLAC

53. Following the same strategy of electrification as in the past, the investment plans designed by ENEE to achieve 85% electricity coverage by 2015 only include projects to extend the electric grid. In contrast,

according to these plans, the 2011-2015 period requires not just an investment of USD138.5 million which would connect 168,000 homes to the grid, at a cost USD825/home connection, but also implies the additional investments required to upgrade the electricity distribution and transmission systems, as well as the additional generating capacity needed to meet the increased load in the SIN.

54. To calculate electricity coverage, ENEE only takes into account the homes served by the grid (SIN) and by isolated municipal or private systems with mini-grids, but does not include data on homes served by renewable energy technologies (RETs, including photovoltaic and micro hydropower plants) or by domestic gasoline or diesel generators (gensets). With a conservative estimate based on information from marketing companies and electrification programs using photovoltaic (PV) systems, the number of households served only by PV systems is currently about 14,000 (see Table 9), so the total electricity coverage reaches 82%.

Table 9: Approximate Assessment of Installed PV Systems

Implementer	Source of Finance	PV systems installed
Companies marketing PV systems	Beneficiaries by direct purchase	7,000
ProSol Program of the Ministry of the Honduran Social Investment Fund (FHIS)	Beneficiaries, Government of Honduras, World Bank, GEF	3,300
EnDev-HO Program, German Cooperation GIZ	Dutch Government and beneficiaries	3,700
Total		***14,000***

Source: Government figures compiled during public consultation

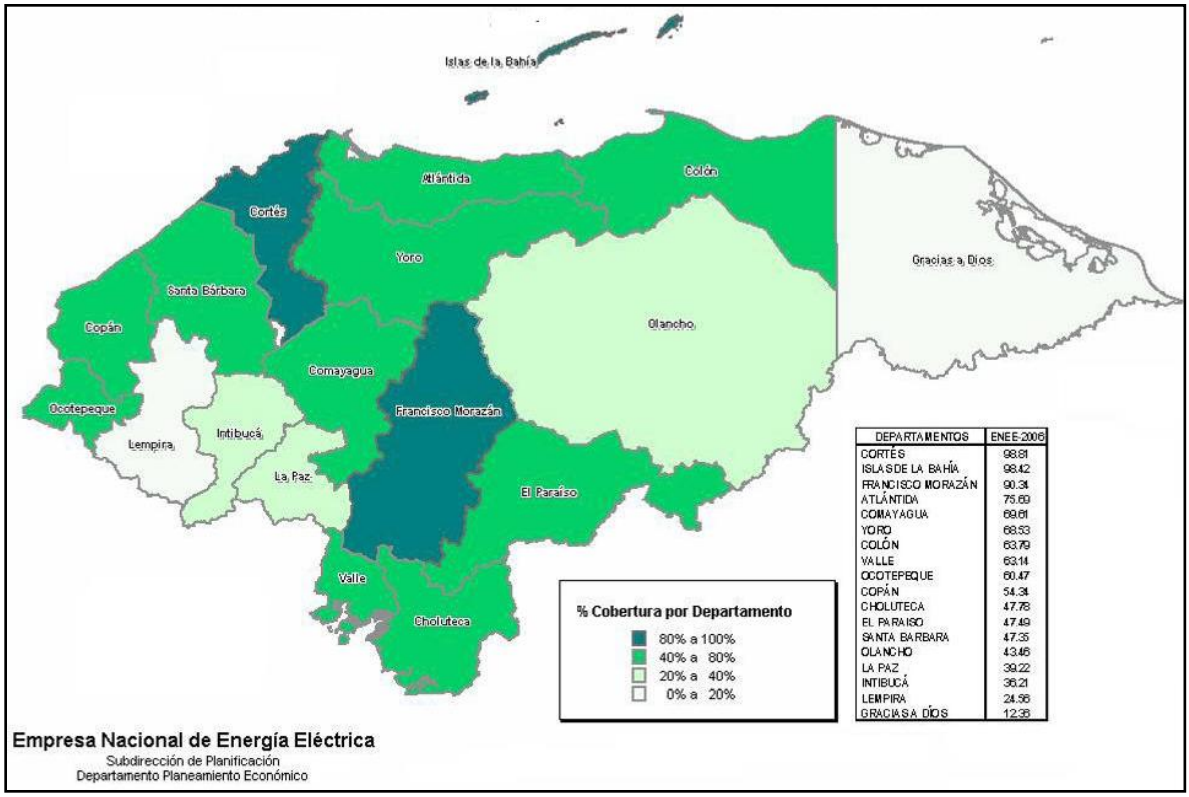
55. Of the total population of Honduras, an estimated 10% of rural households cannot be served by the grid for economic reasons due to the high level of isolation and dispersion of housing, difficult access and very low demand for domestic electricity. This represents a market of about 80,000 homes which will have to be served by these alternative solutions, i.e. photovoltaic or hydropower systems in pico, micro or mini scale, according to the supply of renewable energy at each site.

56. Because the ENEE investment plan does not include execution of off-grid decentralized projects, further investment is required to speed up electricity coverage in isolated rural areas, especially in indigenous and Afro-Honduran territories, and at same time to contribute to the economic development and improvement of the quality of life of these Hondurans, thanks to improved education, health, lighting and communication services, productivity applications, etc. afforded by electricity.

57. The availability of energy services has a distinct impact on the lives of poor people and women, especially in rural areas, where women have the responsibility for firewood collection, household cooking and subsistence activities for the family. Electricity can be used to provide essential services such as water pumping, lighting and food processing. Lack of energy services is correlated with many of the elements of poverty, such as low education levels, inadequate health care and limited employment possibilities.

58. Figure 6 shows the electricity coverage map for Honduras in 2006. As can be seen, *Gracias a Dios*, *Lempira*, *Intibucá*, *La Paz* and *Olancho* departments had the lowest coverage rates. These departments have the largest indigenous population.

Figure 6: Map of Electricity Coverage in Honduras, 2006.



DEPARTAMENTOS	ENEE-2006
CORTÉS	98.81
ISLAS DE LA BAHÍA	98.42
FRANCISCO MORAZÁN	90.31
ATLÁNTIDA	75.69
COMAYAGUA	69.61
YORO	68.53
COLÓN	63.79
VALLE	63.14
OCOTEPEQUE	60.47
COPÁN	54.31
CHOLUTECA	47.78
EL PARAISO	47.49
SANTA BARBARA	47.35
OLANCHO	43.46
LA PAZ	39.22
INTIBUCÁ	36.21
LEMPIRA	24.56
GRACIAS A DIOS	12.36

59. To ensure the sustainability of the systems, it is important to coordinate electrification projects with multi-sectoral strategies which lead to *sustainable rural energization.* These strategies include sustainable environmental management and aim to create opportunities offered by energy service that stimulate productive activities and communication by cell phone and the internet thereby promoting access to markets.

Energy for Cooking

60. In Honduras, firewood is an extremely important energy source, especially for rural households. The traditional stove (*fogón*) is used for cooking in both rural and urban areas. In particular, the preparation of maize tortillas and the cooking of beans —the two staple foods of the Honduran diet— are linked to cultural roots and are energy-intensive tasks.

61. The importance of firewood is such that many households with access to modern energy services still use wood as the main source of energy for cooking. In urban and peri-urban areas, 55% of homes use firewood, of which almost a quarter (21.3%) combine wood with other fuels. In rural areas firewood still dominates in about 81.5% of households, 59.2% as primary source and 21.8% mixed: either wood-electricity or wood-LPG. Table 10 shows fuel consumption by area.

Table 10: Combination of Energy Sources for Cooking by Area (Rural / Urban)

Energy Source	Urban	Rural	Total
Wood	33.7%	59.2%	46.8%
Wood + gas	8.9%	9.9%	9.4%
Wood + electricity	12.4%	11.8%	12.1%
Wood + other	0.0%	0.6%	0.3%
Do not use wood	45.0%	18.5%	31.4%
Total	***100%***	***100%***	***100%***

Source: Study of firewood consumption, April 2011, produced by SERNA, EAP and ECLAC, based on the results obtained in the National Survey of Firewood Consumption in Honduras.

62. According to the study on firewood consumption produced by SERNA, EAP and ECLAC (April 2011), per capita consumption is 5.2 kilograms per day, with minor variations between rural and urban areas and between households that use firewood as their only fuel and those that combine wood with another fuel source. Spending on firewood for use in traditional inefficient stoves (5% to 10% efficiency) has an impact on household economy. The cost of buying firewood in urban areas is at least two dollars a day.

63. Firewood is also used in micro-, small- and medium-sized enterprises (MSMEs), mainly in the production of tortillas for sale by women, salt extraction, brick production, bakeries, production of *panela* (sweet brown sugar) and coffee processing plants.

64. The use of firewood in traditional open stoves has negative effects on the health of the population, especially women and children. According to the World Health Organization (WHO), the use of biomass fuels in open stoves causes the premature deaths of approximately 1.6 million people every year around the world due to inhalation of pollutant gases and particulates[27]. In addition, the handling and transport of firewood leads to other health and social problems: child labor and physical burden of the firewood gathering transportation. Finally, the demand for firewood from urban centers contributes to deforestation.

Financial sector context

65. As of 2010, The Honduran financial system includes 16 commercial banks, 2 state-owned banks, 11 *sociedades financieras*, two 'second-floor' banks and three representation offices of foreign banks. Commercial banks in Honduras tend to run a negative cumulative liquidity gap, which is structural to the entire Honduran financial system. Recent tightening of liquidity regulation has limited the capacity of commercial banks running cumulative liquidity gaps to extend long-term financing typically required by renewable energy projects. To improve maturity levels, commercial banks tend to seek other funding from the market, primarily through IFIs and bond issuance.

66. More recently, the larger banks have started seeking and pursuing a more systematic approach to financing the RE sector, including through partnerships with IFIs. For instance, this year alone, IDB is in the process of disbursing over USD30 million in green lines with banks in Honduras. This type of involvement is likely to grow if projects presented are well capitalized, with the appropriate risk allocation in place.

67. It is not common for domestic commercial banks to provide equity to projects. They focus instead on lending and participate by financing projects that are well-capitalized. The equity capacity by private investors in Honduras is concentrated in the larger, fossil-fuel-fired energy projects, those with more predictable revenue streams, and smaller projects by new entrants in the market, including in particular RE projects, have limited capacity for capital investment. In addition, the smaller energy projects in this new sector present more challenges, and higher risk, often limiting equity participation from other

[27] Incomplete combustion of firewood generates harmful gases such as methane, soot and carbon monoxide.

sponsors. Market research indicates however that given sound fundamentals (technical viability of project, good contracts, positive and adequate technical studies, competent sponsors) and a resulting reasonably low expectation of risk, there are abundant international equity investors and sovereign investors that would be interested in providing equity to Honduran RE projects.

RENEWABLE ENERGY CONTEXT

Power Sector Policies and Regulations for Renewable Energy

68. The Constitution of Honduras declares as a public priority and necessity the technical and rational exploitation of the Nation's natural resources. In this context, the General Law for the Environment provides an adequate framework for rational and sustainable exploitation of natural resources. The LMSE Law sets up the legal regime for the activities of the electricity sector, promotes the use of renewable natural resources for energy, and guarantees protection of the environment in the activities of the sector.

69. Due to the decline in the share of renewable sources in the electricity generation mix in the 1990s due to the price bidding system, and in order to avoid future energy crises, the Honduran National Congress granted by Decree 267 of 1998 a series of tax incentives to promote electricity generation from renewable energy systems and cogeneration with capacity not exceeding 50 MW:

- **During project construction:** Exemption from 12% sales tax on any equipment, materials and services to be used in the installation of generating plants.
- **During the study and construction period:** Exemption from all taxes, fees and import duties, on any equipment, spare parts and components related to installation of generating plants from other countries.
- **During commercial operation:** Exemption from income tax during the first five years from the date of commercial operation.

70. In addition to granting tax incentives, Decree 267-98 gave generating companies the following options for the sale of electricity:

- Sign long-term electricity sales contracts (up to 20 years) with ENEE with no need for a public bidding process.
- Sell directly to a large consumer[28] and pay wheeling charges to the utility.

71. Because the wheeling charges were not well defined in the operating rules of the electricity system, generators chose the option of signing contracts with ENEE. According to the provisions of Decree 267-98, if the sale was initiated by the generating company, ENEE paid a maximum price equal to the Short-Term Marginal Cost (STMC) in force at the date of signing the contracts[29]. In projects not exceeding 50 MW generation, the purchase price had an additional 10% benefit over the short-term marginal cost. The same benefit was granted to hydropower projects with a direct impact on flood control.

72. Since Decree 267-98 came into force, Honduras has experienced a surge in applications to SERNA for the study and later construction of renewable energy projects, especially hydropower. However, just over two years later, and having completed the necessary feasibility studies, the promoters of renewable energy projects were faced with the difficulty of agreeing with ENEE on the terms for purchase of electricity. As a result, the National Congress, after the necessary consultations, passed Decree Law 9-2001 which guaranteed the purchase of all the power from the projects under Decree 267-98.

[28] Consumers served at a voltage of 34.5 kV minimum with maximum demand of at least 1,000 kW.

[29] The STMC is calculated by ENEE and reviewed by the CNE, which submits it to SERNA for approval and publication in the Official Gazette and a national newspaper during the first 15 days of each year.

73. To speed up development of renewable energy National Congress in 2007 issued through Decree 70-2007, a new law to promote electricity generation from renewable resources was passed, with the following provisions:

- Changes in the permit issuing processes to expedite the study and construction of new renewable energy plants.
- Exemption from income tax, the temporary solidarity contribution, tax on net assets, and all taxes related to income for a period of 10 years from start of commercial operation of the plant, for projects with installed capacity up to 50 MW.
- Granting of a 10% surcharge over the base price for the first 15 years of commercial operation of the plant, for projects under 50 MW.
- Extension of duration of power supply contracts signed with ENEE, which will be for a maximum of 20 years for renewable plants with installed capacity up to 50 MW, and 30 years for plants over 50 MW or hydropower plants which have an effect on flood control. These periods may be changed by mutual agreement between the parties up to the maximum term of the Operating Agreement signed with SERNA (which can be up to 50 years).
- Projects that sign a power purchase agreement (PPA) with ENEE have the right to enter into an Agreement to Support the Compliance of the PPA with the State of Honduras through the Attorney General's Office.
- Exemption during the study and construction period from import duties and taxes, as well as sales tax on equipment, accessories and spare parts.

74. Another significant advance came in 2010 when for the first time ENEE held a public bidding process to purchase electricity from renewable energy sources. Forty-eight projects were awarded for a total of 708 MW of renewable energy and an estimated investment of about USD2.50 billion. Already in 2008, ENEE had signed a contract for installation of a 100 MW wind generating plant which will start operations at the end of this year (2011).

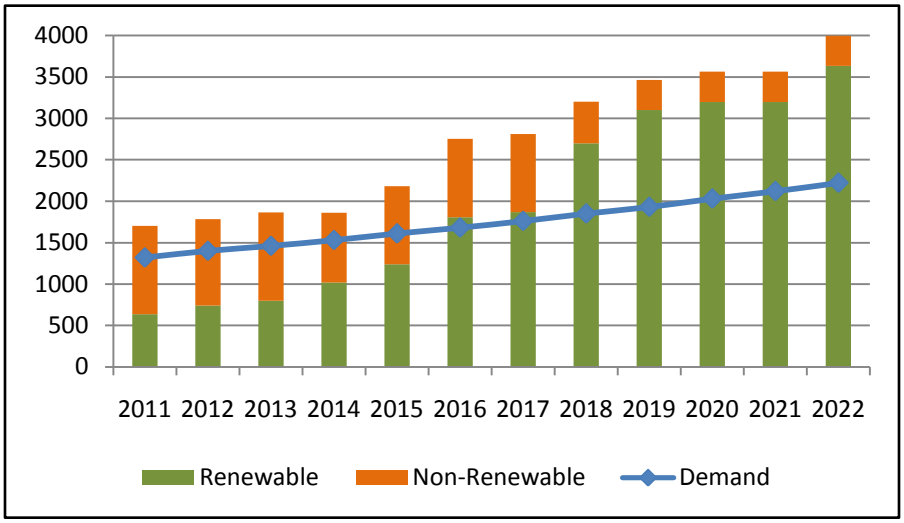
75. With all these initiatives, together with the large-scale hydropower projects currently being promoted by the Government of Honduras (see Table 11), it is expected that the structure of the Honduran electricity sector (see Figure 7) will be reversed by 2022 to a ratio of 60% renewable and 40%, fossil; thus complying with the provisions of the Country Vision and National Plan Law constituted into State Policy by Decree No. 286-2009 of National Congress.

76. As mentioned before, according to the Country Vision and National Plan Law, one of the country's goals is to achieve a productive Honduras, creating opportunities and employment, sustainably exploiting its resources and reducing environmental vulnerability. The 3.3 target of the Country Vision (2010-2038) would increase the share of renewable energy in the country's electricity generation matrix to 80%.

Table 11: Large-scale Hydropower Projects Promoted by GoH

Hydropower Projects	Capacity (MW)
Patuca I, II and III	524
Jicatuyo	173
Los Llanitos	98
El Tablón	20
Expected total	***815***

Figure 7: Projected Electricity Supply and Demand (2011-2022) (MW)



Source: ENEE

77. ENEE is responsible for developing the expansion plan for the National Interconnected System (SIN), including both **transmission and distribution capacity**. To achieve this, various factors must be taken into consideration, which enable ensuring grid stability and the adequate system operation. Due to critical economic conditions and high debt with the state, ENEE faces difficulties in the execution of its expansion plans. These factors force ENEE to focus on grid stabilization projects, leaving behind expansion projects aimed at incorporating RE.

78. ENEE is responsible for conducting studies which determine the best method for the interconnection of RE projects, based on location, distance to transmission lines and substations. ENEE has been gathering and studying information to identify potential interconnection zones for both State and private RE projects. Considering the previous information, six areas of high RE potential have been identified and are presented on Table 12 below.

Table 12: High Potential RE Zones and Estimated Investment Cost for Transmission Infrastructure

Phase	Zone	District	Total Power (MW)	Design	Cost (USD million)
Phase 1	Masca	Cortés	20	Yes	24.32
	Suyapa de Lean	Atlántida	38	Yes	7.43
	La Entrada	Copán	150	Yes	25.83
Phase 2	Valle de Aguan	Yoro	345	No	TBD
	Chinchayote	Choluteca	305	No	TBD
	La Esperanza	Intibucá	120	No	TBD

Source: ENEE

Potential Renewable Resources

79. Due to its tropical climate, Honduras has abundant rainfall, biomass, solar radiation and some sites with good potential for wind energy.

Hydropower Potential

80. In Honduras, the most important autochthonous energy source for generating electricity is hydropower. According to information from ENEE and the DGE, the country's gross and net hydropower

potential is 5,000 MW and 2,651 MW, respectively. The latter figure includes the installed capacity, in addition to the capacity that has been either verified or is currently under implementation. Small-scale hydro accounts for approximately 14.5% (385 MW) of net potential capacity. Currently, the total hydropower installed capacity is 526.4 MW from both large and small hydropower plants, of which 464.4 MW comes from seven hydropower plants owned by ENEE (the largest is the 300 MW Francisco Morazán dam), 25 MW from 2 privately owned plants with capacities above 10 MW, and 37 MW from 11 privately owned plants with capacities under 10 MW.

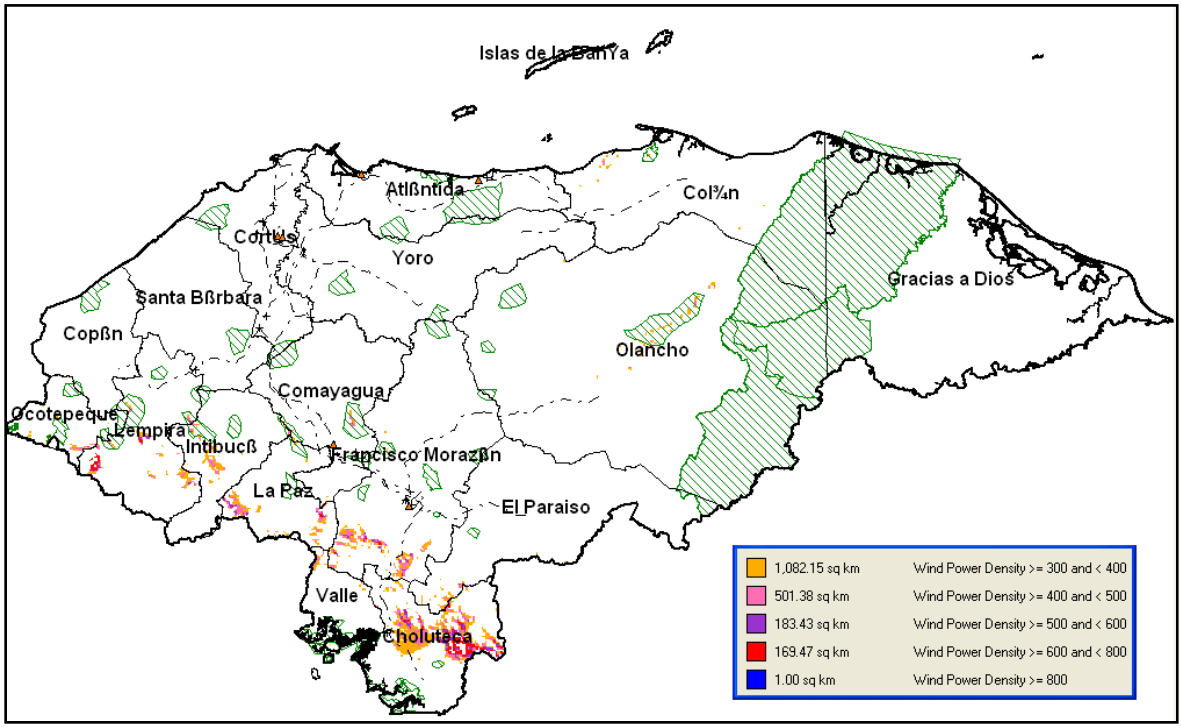
81. Several large and small scale hydropower plants are currently under construction by the private sector, totaling 142.9 MW, while ENEE has recently started construction of the 104 MW Patuca III plant at a cost of USD350 million. Of the estimated hydropower potential, approximately 300 MW is being studied by the private sector and 700 MW by the Government through ENEE.

Wind and Solar Potential

82. The Ministry of Natural Resources and Environment (SERNA) with the support of the Solar and Wind Energy Resource Assessment project (SWERA[30]) produced high-resolution maps of wind and solar resources in 2004 to remove information barriers in the way of promoting investment in projects to reduce the greenhouse gas (GHG) emissions associated with the energy sector. The SWERA project also produced a system of geographical information to increase the decision-making capability of energy planners.

83. According to the SWERA assessment, the potential available for study would be 3,680 MW wind class 4 or higher (see Table 13 for more information on ranking of wind systems), and about 1,200 MW for wind class 5 or higher. This does not include the wind potential available in non-forest or protected areas, but does include some areas with problems of access to electricity grids and roads.

Figure 8: Map of Wind Resources in Non-forested Areas.



[30] The SWERA project was financed by the Global Environment Facility (GEF) and administered by the United Nations Program for the Environment.

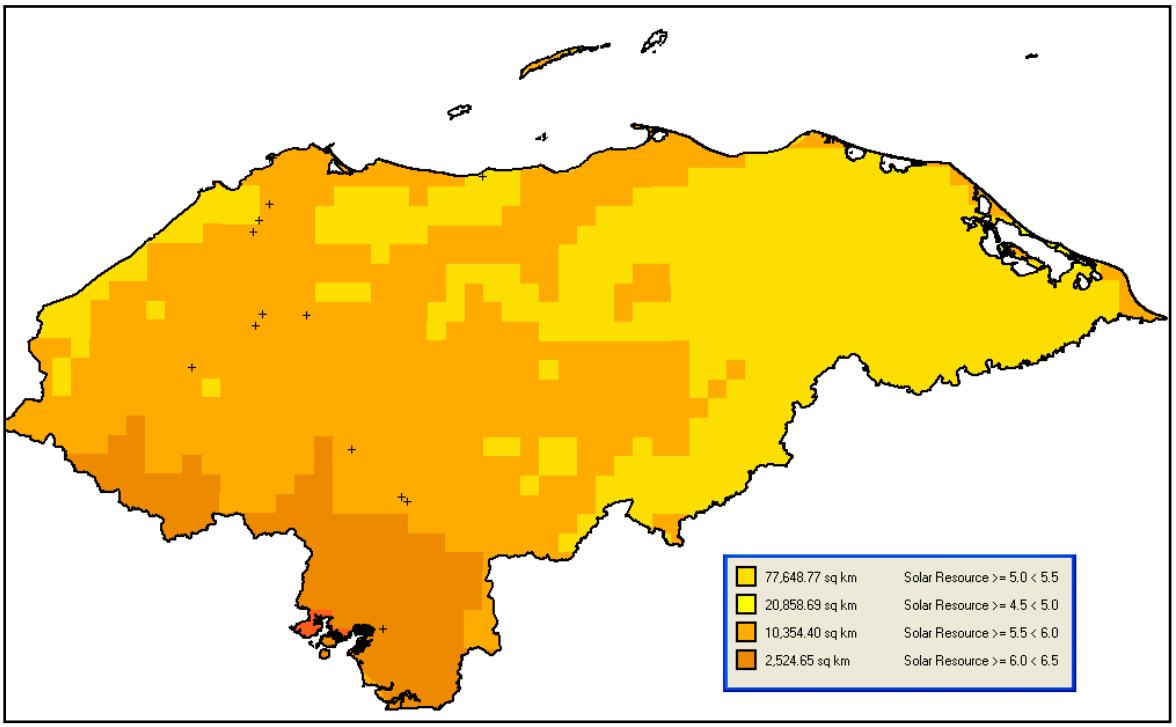
Table 13: Classification of Winds and Wind Potential

Class of wind	Resource potential	Wind power density at 50 m (W/m^2)	Wind speed at 50 m
1	Poor	0-200	0-5.6
2	Marginal	200-300	5.6-6.4
3	Moderate	300-400	6.4-7.0
4	Good	400-500	7.0-7.5
5	Excellent	500-600	7.5-8.0
6		600-800	8.0-8.8
7		+ than 800	+ than 8.8

84. Of the potential identified, 100 MW are installed in the Cerro de Hula area, 20 km south of the city of Tegucigalpa, which will come into commercial operation in late 2011, and 56 MW under study to be installed in the areas of San Marcos de Colón, Choluteca (8 MW) and in Yamaranguila, Intibucá (48 MW).

85. The solar resource potential assessed by SWERA is shown in Figure 9. On average, solar potential is calculated at 5.2 kWh/m²/day. With the active participation of the private sector in Honduras since 1993, photovoltaic systems have been provided for residential service, and to meet needs in health, educational and productive sectors. In the domestic sector it is estimated that over 14,000 families have been served by photovoltaic systems, while social and productive applications range from water pumping systems for human and animal consumption or irrigation, to applications in telecommunications, refrigeration and communications centers. The total installed capacity of photovoltaic systems is estimated at a minimum of 1,000 kW.

Figure 9: Annual Solar PV Potential



Source: SWERA

Biomass Potential

86. Biomass is another resource available in the country for electricity generation, especially through the use of waste generated by of agribusiness activities, including sugar mills, African oil palm producers and lumber mills. The estimated potential resource of biomass waste is 300 MW, according to a report of the Bariloche Foundation commissioned by SERNA

87. With respect to power generation from burning sugarcane bagasse in boilers, seven sugar mills in the country have made investments to generate steam and surplus electricity during the harvest period (four to seven months) to sell to the grid. In late 2009, sugar mills had a combined installed capacity of 88.2 MW and produced surplus electricity for sale to the grid totaling 156.1 GWh, representing 2.4% of the total generated in the country. Export opportunities associated with the Central America Free Trade Agreement (CAFTA) and the good experiences of these cogeneration systems are stimulating additional investments in the sugar industry in even more efficient systems which will double existing installed capacity.

88. The other biomass energy which is currently used is methane generated in the treatment ponds used in palm oil production. Aside from generating electricity with the oil-producing plants for their own consumption, perhaps the greatest benefit of these systems has been environmental due to the mitigation of GHG emissions into the atmosphere (not to mention elimination of bad odors which affected communities neighboring the water treatment plants). This type of system which uses biomass waste for methane capture can be replicated in other agro-industrial activities or waste management, such as coffee processing plants, hog, poultry and livestock farms and landfills for urban solid waste. In the latter sector, several municipalities are studying the installation of a total of 64 MW.

Geothermal Potential

89. Although geothermal energy potential is limited in Honduras because the country is not in the volcano belt which crosses the other Central America countries, according to the General Directorate of Energy (DGE), potential resources are about 112.3 MW, on which studies are currently under way by private investors for exploitation of 37 MW in the Platanares sites in La Unión, Copán (35 MW) and in San Ignacio, Francisco Morazán (2 MW).

Electricity Generation in Isolated Systems

90. Because of the mountainous terrain and rainfall conditions in Honduras, installing pico, micro or mini hydropower plants to serve isolated systems is a possibility, and there are even experiences in the management, administration, construction and installation of this type of system with a participatory approach. Table 14 summarizes decentralized hydropower projects recently installed in Honduras.

Table 14: Rural Electrification Projects with Pico, Micro, and Mini Hydropower Plants in Honduras

Department	Project	Installed capacity (kW)	Donors	Beneficiaries (households)
Atlántida	El Recreo	12.5	EnDev-HO	n/a
Colón	El Satalite	7.5	EnDev-HO	n/a
Atlántida	La Muralla	7.5	EnDev-HO	n/a
Yoro	Chorroviento	10	EnDev-HO	n/a
Yoro	Guardaraya	15	EnDev-HO	n/a
Lempira	San Manuel Colohete	12	EnDev-HO	n/a
Colón	Quinito	10	EnDev-HO	n/a
Atlántida	Ni Duermes II	12	EnDev-HO	n/a
Colón	Plan Grande	12	EnDev-HO	n/a
Atlántida	Las Quebradas	12	EnDev-HO	n/a
Sub Total benefiting from En-Dev				***1,280***
Francisco Morazán	Los Lirios	0.7	GAUREE Project (EU + ENEE)	22
Comayagua	Yure	100	GAUREE Project (EU + ENEE) UNDP-GEF	706
Colón	Las Champas	80	PIR Project (BM+GEF+FHIS) GAUREE Project (EU+ENEE) UNDP-GEF	150
Lempira	Río Claro	100	GAUREE Project (EU+ENEE) UNDP-GEF	1,037
Olancho	Wampu	42	UNDP-GEF	450
Olancho	Paulaya	82	UNDP-GEF	730
Olancho	Río Negro	43	UNDP-GEF	2,629
Total installed capacity (Kw)		***558.2***	***Total beneficiary (households)***	***7,004***

91. The experience in electrification with hydropower plants has a long history. Before ENEE was set up in 1957, major population centers were served by small hydropower plants, which unfortunately were abandoned when these centers were reached by the national grid. Currently there is a national manufacturing capacity for pico and micro hydropower turbines[31], and some sites are identified for development of hydropower projects isolated from the grid (see Table 15).

Table 15: Potential Hydropower Sites for Isolated Communities

Name	Location	Potential beneficiaries (households)	Approximate cost (USD)	Estimated potential (kW)
Quinito	Colón dept	73	50,000	11
Plan Grande	Colón dept	86	50,000	13
Mocorón	La Moskitia, Gracias a Dios	300	1,500,000	300
Sico	Colón dept	365	1,500,000	300

92. The country's solar sector includes five companies involved in the design, marketing and installation of solar systems. These companies are credited with the fact that this technology is now well known and accepted not only by the rural population, but also by other users ranging from government institutions, international cooperation agencies to farmers, NGOs and telecommunications companies.

93. There are a number of business models for the delivery of PV solar home services: (i) direct sales (the most common, with prices varying according to the user's ability to pay), (ii) leasing with a purchase

[31] Provided by the Honduran Foundation for Agricultural Research (FHIA)

option; and (iii) bidding processes. Bidding processes can be organized by the government (such as the PROSOL Program financed by the World Bank and GEF); by international donors (such as the EnDev-HO Program funded by the Dutch Government and the German Cooperation Agency GIZ); or by telecommunications-related private companies. Aside from the population without the option of being served by the grid, the market for solar energy systems includes the commercial and agricultural sectors for residential electrification, pumping, heating and drying applications.

94. As a result, in addition to the valuable experiences learned from solar energy electrification programs undertaken in recent years by the Government and international partners, and the availability of a solar energy potential map which indicates the existence of a good resource, the conclusion is that the country is ready to speed up exploitation of solar energy on a larger scale as an alternative to contribute to local development and poverty reduction among the 80,000 families which cannot be covered by extension of the national grid.

95. Although there are no isolated rural electrification experiences with wind systems in the country, SWERA maps and preliminary studies indicate that in the isolated systems of the Bay Islands (Roatán and Utila) and Puerto Lempira in Gracias a Dios, there exists a potential wind resource which could be the basis for installing wind turbines and hybrid systems that work in conjunction with diesel plants. Since the electricity in these systems is costly because they rely entirely on thermal generation, renewable generation from wind would help substitute fuel consumption, thus cutting the cost of the electricity bill and carbon emissions into the atmosphere.

Energy for Cooking

96. As already mentioned, the country's energy matrix contains a high level of firewood consumption, which is mainly used in inefficient stoves. Due to cultural and economic aspects, a transition to cooking systems with LPG or electricity is not feasible in most cases. Therefore, the experience of the main institutional actors and international cooperation agencies shows that the problem is not so much the use of firewood, but the inadequacy of the traditional technology. Distribution of improved stoves is therefore the best option, since they use a local energy source and are built with local materials and labor. This issue has been so important that foreign universities and organizations have contributed, jointly with local NGOs and universities, to the technological development of the stoves with the aim of improving energy efficiency and proposing different models to meet users' needs.

97. In recent years, governmental and private institutions, international cooperation agencies and various NGOs have sponsored programs to create awareness among families about the damage to health and the environment caused by the use of traditional stoves, promoting the installation and use of improved models, which are at least 40% more efficient than traditional stoves[32]. The improved versions reduce both fuel consumption and damage to people's health. Although the new stoves have been well received by users, their introduction in Honduras has been limited; their current share is only 9.9% in rural areas and 2.9% in urban areas, so there are still about 800,000 traditional stoves in the country[33]. Table 16 shows distribution of stoves by area.

98. These isolated cook stove dissemination efforts have not led to the development of sustainable business models. The experience in Honduras shows that it would be particularly relevant to establish minimum technical performance and social acceptance standards and a certification scheme (building on the certification center currently operating at the El Zamorano University - EAP), as well as guidelines for the access to carbon markets (building on the experience of projects that are already mobilizing resources form the carbon markets).

[32] According to research by the Center for Certification of Improved Stoves at the University of Zamorano (EAP).

[33] Based on figures from the study of firewood consumption in Honduras by SERNA, EAP and ECLAC.

Table 16: Type of Stove in Use by Area (%)

Type of stove		Urban	Rural	Total
Wood-fired	Ground stove	0.6	1.9	1.3
	Traditional stove	39.8	63.6	52.0
	Improved stove "Justa tradicional"	2.3	6.9	4.6
	Improved stove "Justa 2x3"	0.6	3.0	1.8
	Other improved stoves (Lorena)	1.4	1.4	1.4
Non-wood-fired	Gas stove	23.6	12.4	17.9
	Electric stove	28.5	10.5	19.3
	Other	3.2	0.3	1.7
Total		***100***	***100***	***100***

Source: Study on firewood consumption, April 2011. Produced by SERNA, EAP and ECLAC

99. The objective of distributing improved stoves is to prevent respiratory and cardiopulmonary illnesses by eliminating indoor air pollution from harmful gases. They also help reducing deforestation and desertification, which improves water supply and reduces vulnerability to disaster risks.

100. The improved stove programs have been accompanied by interest from stakeholders involved in the energy and natural resources sectors in beginning to formulate policies and projects for the rational, efficient and sustainable use of firewood.

PROGRAM DESCRIPTION

101. Honduras is moving in the development of RETs in both the grid-connected and off-grid domains, but still faces a number of institutional, policy, financial, and knowledge barriers. Given the key development benefits that RE provides in these two domains, this IP proposes a comprehensive approach to scale-up development and to remove critical barriers in both of them, complemented by a third, minor component addressing the overall policy and institutional framework. The following sections describe in general terms these three components, including for each of them background, objectives, expected outputs, and expected outcomes). Annexes 5, 6, and 7 provide additional details.

Component 1: Strengthening the RE Policy and Regulatory Framework (FOMPIER)

Background

102. In the energy sector there is a need to further strengthen the policy and institutional regulation framework, which currently limits development of renewable energy generation by inhibiting investment in the sector. This in turn restricts the move towards a diversified energy matrix (with increased energy security) and low carbon emissions. In this respect, two types of barriers are identified, at the level of institutional framework and governance of the sector, and the availability of policies, regulations and incentives for renewable energy.

a) *Institutional Framework and Governance:* One of the aspects that needs attention in this area is the mechanism for setting electricity tariffs for renewable energy compensation. In practice, it is ENEE —not CNE, the regulatory agency— which has a more decisive role in this function. In this situation, there is a conflict of interest because ENEE has its own generating plants so its role in setting tariffs —which apply not only to its own generation but also to its competitors— has the potential to harm other generators of renewable energy by removing incentives. These problems of definition of responsibilities are also identified in the internal structure of some entities, which means that a better intra-institutional definition of roles is necessary. There is also the need to strengthen institutional capacity, in terms of availability of staff (SERNA and CNE, among others) and training.

b) *Policies, Regulations and Incentives for Renewable Energy:* In this area, despite the strategic definitions established in other documents, such as the target of a 80/20 mix (renewables/fossil) by 2034, and narrowing the rural electrification gap to 85% by 2015, the greatest need is for a long-term energy policy. Also, government actions in the energy area are not formally coordinated with a plan to mitigate climate change and/or a low carbon development strategy. At the same time, the laws that have been enacted have not been complemented by the necessary regulations and other supplementary legal instruments (such as standards and specifications) to adapt them to the special characteristics of the different technologies. In this respect, the existing regulations are considered fairly adequate for hydropower but not for the other technologies. For example, there is a need to draft model contracts for each technology, as well as design and operating standards. Another barrier is the absence of technical guidelines to inform developers of the procedures for obtaining building, operation and supply permits, among others. Furthermore, the method of determining marginal costs, tariffs and incentives does not reflect all the benefits that renewable generation provides to the country's electricity system (for example, voltage stabilization and reduction of transmission losses, when renewable generation projects are located near the end points of the grid).

Objectives

103. Support the development and implementation of policies, laws, regulations, rules, standards and incentive schemes aimed at improving the integration of renewables in the energy sector by reducing risks and transaction costs and encouraging investment in renewable energy.

Scope

104. The funds will support the holding of meetings and technical workshops, and consensus-building activities, studies, technical guides, training, materials development, among other activities.

105. Besides any activities focused on improving the regulatory framework for grid-connected RE generation, a detailed diagnosis will be undertaken to identify adjustments that should be designed and implemented in the current regulatory and legal framework of the power sector aimed at ensuring legal space and regulatory provisions for new business models for RE-based decentralized rural electrification to be implemented with private sector participation.

106. As an example of interventions which SREP will support, a study will be made of the current model of electricity sector governance, the functions and capabilities of each agency and possibilities of organizational and operational optimization. Another study will examine the existing tariff-setting system and its possibilities of optimization for a more effective use of tariff and non-tariff incentives to promote development of the energy sector (particularly renewable generation) in the direction set out by the long-term energy policy (also to be developed).

Expected Outputs

107. Long-term energy policy to promote a higher mix of RE and low carbon development strategy; legislation for promoting RE development adequately regulated; standards and specifications appropriate for each renewable technology; incentives model (including tariffs) for the effective development of each renewable technology to be promoted, which fully reflects the associated benefits of each; technical standards for renewable energy technologies; guidelines for obtaining construction, operation and supply permits; intra- and inter-agency responsibilities defined and duly observed; development of capacities of governmental and nongovernmental agencies to allow for future expansion of mitigation activities, including renewable energy.

Expected Outcomes

108. Strengthening the institutional capacity of government agencies will improve capabilities in the areas of policy making, planning, regulation and supervision of the sector and its linkage with a low carbon development strategy. Also, a better definition of responsibilities will contribute to a more efficient operation of the sector, also improving regulatory certainty and avoiding conflicts of interest (with a positive effect on investment). Establishing the long-term energy policy will improve the predictability of the evolution of the sector, helping to align work plans and increasing capacity for planning investments in renewable energy. Also, proper regulation of promotion laws and development of appropriate standards and specifications for each renewable energy technology will create the right incentives for effective development of each technology. An appropriate tariff model and other incentives will ensure the financial viability of projects whose economic benefits (including social and environmental) deserve prioritization. Finally, the development and adoption of standards for renewable energy technologies will increase technical confidence in renewable energy projects, reducing the perception of technological risk which at times hampers access to financing. It will also make the system more reliable by reducing the incidence of electricity supply problems.

Component 2: Grid-Connected RE Development Support (ADERC)

Background

109. Despite the existence of a portfolio of RE projects in Honduras which are in the fundraising stage, the existence of various interrelated barriers in the young RE market in Honduras —including risk and high costs of appraisal, lack of training, and financial, infrastructure and regulatory barriers— combine to prevent projects from reaching construction stage. Moreover, the weaknesses in the financial management capacity of some new developers which were awarded PPAs in the bidding process for RE, their limitations of risk capital for accessing loans, along with the incapacity of local financial institutions to analyze renewable energy projects affect the raising of funds for investment in renewable energy. Moreover, in some cases the infrastructure for access to potential RE is limited, poor or nonexistent.

Objectives

110. The Grid-Connected RE Development Support (ADERC) component aims to reduce the aforementioned interrelated barriers associated with risk, capability, finance, and infrastructure. ADERC's aims to support a first pilot portfolio of projects, which will lower risk by means of demonstration and by means of the training and experience provided to stakeholders in the market — developers, financial institutions and communities— to create a catalytic transformation in the sector.

Scope

111. This component will have several sub-components to support the sector and progress its transformation. The proposed sub-components are designed to overcome the barriers described above, and include:

- Knowledge transfer to developers and local banks to bridge the gap between projects and their financing
- Technical assistance for preparation of a first pilot portfolio of projects. The demonstration effect of these early projects, testing business models new to the market, will also lower the risk in the market, making it less expensive and more feasible to finance projects.
- Technical assistance with formulation of technical standards and information required for project financing.
- Support for setting up of a fund financed by SREP and the multilateral banks (with the possible involvement from other sources including pension institutes, private investors and/or commercial

banks) to provide temporary financial support for projects to increase their bankability by providing capital investment

- Financing assistance for extension of the transmission and distribution system to connect the RE projects financed by SREP and multilateral banks.

Project Selection Criteria

112. All projects will be screened against a basic eligibility criteria (see Table 26 in Annex 6), but prioritization for investment will be subject to additional considerations.

113. A fundamental aspect of SREP is its capacity to unlock finance, both from MDBs and private sector sources, for investments in RETs. The precise criteria for investment selection of the ADERC component will depend on the structure and governance of the capital support fund. They are expected to be based firstly on profitability, power purchase agreements, preparation and technical aspects, and as secondary considerations the extent to which the projects contribute to fulfilling the national goals for energy diversification --in particular on the national grid--, economic growth, and poverty reduction. Projects rated highly in terms of preparation and potential profitability in an initial market/pipeline study will be included in the ADERC capital fund portfolio, although some others may also receive assistance or investment from national banks.

114. In order to assist the projects to comply with eligibility requirements, the technical assistance subcomponent will help with preparing projects in order to ensure that the SREP investment proposals are based on sound financial and technical analyses

115. This technical support, which is expected to generate increased capacity in the future through learning and partnering with appropriate stakeholders, will also help reduce the costs of investment in electricity infrastructure, access renewable energy potential, and result in obtaining both private and public benefits.

Expected Outputs

116. The expected outputs of this component are:

- Increase RE generation capacity by 60 MW
- Expand transmission capacity by 207km
- Savings in GHG emissions —to be assessed during project preparation

Expected Outcomes

117. This component is expected to result in a series of development benefits:

a) At national level and in the area of competitiveness, increased efficiency in the economy and less fiscal spending at national level due to oil dependence (improvements in the balance of payments), and increased energy security. Improved investment climate and more competition in the sectors of: (i) renewable energy producers and the business sector in general; and (ii) the banking sector, strengthening its capability to provide project finance. Specifically, the component would support the economic development of energy SMEs and the micro-enterprises that also support the industry.

b) Improvement of energy infrastructure and therefore support for national development. In addition, new transmission lines may enable the electrification of rural areas that are currently off the grid.

c) In terms of rural development, the component would create employment in rural areas, support the 'base of the pyramid', and in particular facilitate access by women to employment and the benefits of clean energy. The new income would provide funds for investment in critical aspects

for remote communities, and improvements in their quality of life and health. It would also improve access to energy for remote areas.

d) There are also environmental benefits. As hydropower projects typically include a watershed management plan formulated at the developers' own initiative, they bring environmental co-benefits, for example reducing the deforestation rate, increasing reforestation and sources of water for human use, and protecting biodiversity. The reduction of emissions resulting from the component would be another overall benefit.

e) Improve local consultation process for RE projects and inclusion of MDB safeguard policies.

Component 3: Sustainable Rural Energization (ERUS)

Background

118. Limited access to sustainable energy services in rural areas, especially in indigenous and Afro-Honduran communities, affects the quality of life of the people and hinders a socioeconomic development in harmony with the environment. Moreover, the high level of inefficient and unsustainable firewood use to supply basic energy needs affects the health and economy primarily of women, and contributes to compromising the sustainability of forest resources.

119. The weakness of the institutional framework for the rural energy sector affects the quality and efficiency of efforts to develop rural electrification and massively expand efficient use of firewood. The main problem in this area is that Honduras does not have an integrated rural energy policy. The fact that a number of organizations are promoting rural electrification or distribution of improved stoves weakens the institutional framework and the incentives required to attract other participants, such as private investors, manufacturing and distribution companies, communities and NGOs.

120. As a result, a specific or detailed model of how to carry out an extensive sustainable rural energy or energization program which involves isolated rural electrification with renewable options under a multisectoral approach (domestic uses, productive uses, environmental services, community management) and distribution of improved stoves has not yet been designed. Other aspects such as financing constraints and opposition to the shift to renewable and cleaner alternatives due to lack of knowledge, hold back implementation of these sustainable rural energy programs.

Objectives

121. The main objective of ERUS is to develop sustainable models of large-scale, rural energization based on renewable energy (off-grid electrification and improved stoves), drawing on experiences from other programs implemented in the country and abroad.

Scope

122. The technologies to be considered in the component are photovoltaic solar, hydropower, wind, biomass and improved stoves for biomass (firewood). The SREP funds will be used to support studies, projects and capacity building activities, to develop and catalyze —in partnership with other stakeholders from the public and private sectors and international cooperation— the sustainable and efficient use of renewable resources for energizing rural communities, in particular those isolated from the national grid. The projects financed by SREP will increase the quality of life of residents, strengthen energy security, and reduce indoor air pollution and atmospheric pollution from carbon emissions, as well as pressure on natural resources.

123. The strategy will be based on the following principles:

- development of markets that are compatible with the ability to pay of beneficiaries;

- development of favorable frameworks for private sector participation (leverage of private sector resources);
- leveraging carbon market resources and establishing clear rules for the ownership of carbon credits;
- development of local capabilities for project design, implementation and management;
- implementation of South-South exchanges of technologies and implementation models;
- development of appropriate regulatory mechanisms;
- technology certification and development of standards;
- social participation from a gender perspective;
- maximization of development benefits through social and productive uses;
- maximization of cross-sectoral synergies;
- building on existing social networks —especially NGOs with a national or regional presence— to ensure local appropriation and reduce the costs of intervention;
- maximization of the adoption of technologies by providing training to users and by ensuring that the technologies are both socially acceptable and technically adequate, building on assessments of past experiences, and
- constantly monitoring and evaluating the energization process and its results.

Expected Outputs

124. The expected outputs of this component are:

- Increased access to electricity for 100,000 people
- Reduced consumption and costs of firewood supply for project beneficiaries by 60%
- Access to efficient cookstoves for 50,000 households
- Savings of GHG emissions —to be assessed during project preparation.

Expected Outcomes

125. The very existence of business models and an appropriate legal/regulatory framework creates conditions for large-scale replication by creating sectors of economic activity based on RE technology industries.

126. A change in the current rural electrification paradigm from primarily grid expansion (in some cases uneconomical) to one that includes renewable energy alternatives for isolated communities is a move toward a financially healthy electricity sector and reaching in the short term communities which otherwise would have waited decades for the arrival of the grid.

127. The proposed interventions will result in the following development impacts:

- Improved living conditions for poor people who live in isolated rural areas in aspects of lighting, access to information, strengthening of health and education systems, facilitation of recreational and community activities.
- Increased productivity and access to new productive activities, especially for the *base of the pyramid* facilitated by access to energy, resulting in creation of rural jobs and alleviation of the phenomenon of migration to large cities or the countries of North America, and in other cases prevention of illegal activities caused by insufficient job opportunities.

- With access to energy, communities will be able to have information platforms via Internet, giving rural producers direct connection with distant markets. The same applies to education, allowing children greater knowledge through Internet information resources.
- Implementation of interrelated strategies to prevent degradation of natural resources and carbon emissions (such as the link between development of hydropower plants and distribution of improved stoves) will contribute to adaptation to climate change, watershed conservation and promotion of environmental services.
- Social and environmental awareness in the relationship between people, their environment and natural resources.
- Health benefits, especially for women and children, by avoiding exposure to harmful gases from inefficient burning of firewood in traditional stoves.
- Reduced time spent on household chores such as firewood collection or food processing, so that women can use that time to work, attend school or participate more actively in the community.
- Increased women's health and safety, by reducing exposure to harmful fumes and gases, by reducing firewood carrying chores, and by providing lighting in the communities at night.
- Increased opportunities for young women to attend school and escape poverty more easily, due to the reduction of the time spent by their mothers on housework.
- When electricity is used to pump water, this avoids water carrying and improves hygiene and nutrition in the community.

PLAN SUMMARY: CONTRIBUTION TO NATIONAL ENERGY ROADMAP AND REGIONAL TARGETS

Contribution to the Country Plan

128. The SREP Investment Plan will support the three *Strategic Guidelines* of the National Plan (2010-2022) that influence the promotion of Renewable Energy:

- Regional Development, Natural Resources and Environment
- Productive Infrastructure as an Engine of Economic Activity
- Climate Change Adaptation and Mitigation.

129. The target 3.3 of the Country Vision (2010-2038) aims to increase to 80% the share of renewable energy in the country's electricity generation matrix. In addition the Country Plan projects that by 2022 public-private investments will have increased the share of renewable energy generating projects in the energy matrix to 60%. It projects that by 2034, investments in energy will have transformed the generation matrix into an 80% majority share of renewable energy.

130. The SREP Program's contribution to the Country Vision and National Plan will play an important role in reaching these targets, by providing financial assistance to the country for catalyzing processes which lead to a transformational change towards energy trajectories with low levels of carbon emissions by exploiting the potential of renewable instead fossil fuel-based energy.

131. This transformational change will take place through improved financial and market conditions, and increased confidence among market players whether financiers or investors. This will increase investment in renewable energy by public and private sectors, which are necessary for replication on a large scale, contributing to creation of employment and poverty alleviation.

132. The intervention of the SREP Investment Plan is expected to achieve installation of 55 MW of renewable capacity, raising a total of USD166.5 million, of which USD12.9 million will be the SREP

contribution. In addition to finance electricity infrastructure to access potential renewable resources, it is planned to place USD4 million which is expected to leverage extra funds of around USD50 million. Estimated investments required to access potential renewable resources are shown in Table 12.

Contribution to Achieving the Poverty Reduction Strategy

133. The Poverty Reduction Strategy (ERP) sets a target of 85% electricity coverage by 2015. By contributing USD6 million budgeted in the SREP Investment Plan and raising USD12 million more from other contributors in the private and public sectors and from international organizations, 100,000 people in the rural sector will benefit from RETs in isolated rural areas, especially indigenous and Afro-Honduran communities, a 1% expansion of national electricity coverage.

Contribution to the 2020 Central American Sustainable Energy Strategy

134. Given the sharp rise in oil prices in 2004, the ECLAC Subregional Headquarters in Mexico prepared for consideration by the General Secretariat of Central American Integration System (SG-SICA), a proposed emergency energy plan, reviewed and approved by the Central American Energy Ministers in May 2004 in Guatemala City, Guatemala, and the following month by the Heads of State and Government of Central America at the Guadalajara Summit in Mexico. This emergency plan included preparation of a sustainable energy strategy in Central America.

135. The *2020 Central American Sustainable Energy Strategy* was approved at the Meeting of Ministers of the Energy Sector held in Guatemala in 2007. The ministers agreed to work together to implement actions to guarantee the supply of energy in the required quantity and quality on conditions accessible to all the population and ensure appropriate use and preservation of natural resources. *The 2020 Strategy* provides a common vision of energy development and integration and sets targets for: a) reducing dependence on hydrocarbons; b) increasing the share of renewable sources; c) reducing GHG emissions; d) expanding electricity coverage; and e) increasing efficiency in energy supply and demand.

136. The SREP Investment Plan will facilitate implementation of the 2020 Sustainable Energy Strategy in Central America, by reducing the consumption of firewood for cooking through the use of more efficient stoves. The target is to install 50,000 improved stoves for which USD2 million have been budgeted (6.66% of the total SREP contribution), along with funds raised from other participants for about USD5 million.

137. Table 17 summarizes the SREP contributions to meeting the country plans and the Central America 2020 sustainable energy strategy.

Table 17: Summary of SREP Linkages with National and Regional Development Plans

Policy	Targets	SREP Contribution	How SREP contributes to achieving the targets
Country Vision National Plan	60% share of RE in the electricity generation matrix by 2022.	Yes	• Providing technical and financial assistance to overcome risk and knowledge barriers to unlock financing from MDBs, local commercial banks and the private sector for investment in installation of RE generation projects. • Providing finance to catalyze investments in electricity infrastructure to access potential RE currently difficult to access. • Supporting institutional capacity building • Supporting formulation of policies, laws and regulations for RE to improve organization and coordination of the energy sector.
	80% share of RE in electricity generation matrix by 2038	Yes	• Replicating experiences of models for financing RE projects promoted by SREP in pilot stage, to catalyze additional investments in RE sector in medium and long term.
Poverty Reduction Strategy (ERP)	85% electricity coverage by 2015	Yes	• Developing business models with potential for replication to bring electricity coverage through off-grid RE options to isolated communities • Financing RE projects in their various stages for isolated rural electrification in co-partnership with public and private sector actors, international cooperation agencies and NGOs. • Supporting institutional capacity building • Supporting formulation of policies, laws and regulations on RE to improve organization and coordination of the energy sector.
Central American Sustainable Energy Strategy 2020 (Central American Regional Energy Policy)	90% electricity coverage by 2020	Yes	• Experience of RE project financing models promoted by SREP in pilot stage will be replicated to catalyze additional financing for off-grid RE projects.
	10% of firewood consumption for cooking reduced by using more efficient stoves in one million rural households in Central America	Yes	• Developing models for mass distribution of improved stoves. The experiences learned in Honduras will be replicable in the other Central American countries. • Financing installation of improved stoves in partnership with public and private sector actors, international cooperation agencies and NGOs. • Supporting institutional capacity building • Supporting formulation of policies, laws and regulations on RE to improve organization and coordination of the energy sector
	Increase share of renewable sources in subregional electricity market by 11%, mainly by construction of hydropower plants	Yes	• Models for financing investments in RE projects in Honduras catalyzed by SREP will be replicable in the rest of the Central American region.
	20% reduction of GHG emissions from baseline scenario by 2020 to maximize application of carbon reduction certificates	Yes	• RE projects installed with SREP technical and financial assistance will help reduce GHG emissions, and the potential resulting credits can be placed on the carbon markets. • Supporting institutional capacity building.

IMPLEMENTATION POTENTIAL

138. Institutional arrangements have established that the overall design, implementation, and supervision of this investment plan are responsibility of an SREP Executive Committee. The mission of this committee is to provide guidance to ensure effective prioritization and allocation of resources in light of

the needs of the country. In particular, this committee will be responsible for approving SREP-funded project initiatives.

139. The composition of the SREP Executive Committee combines representatives from key public and private institutions in the energy sector. Presided by the Ministry of Finance (SEFIN), the SREP Executive Committee embraces representatives from the General Directorate of Energy (DGE-SERNA), National Energy Commission (CNE), and National Power Utility (ENEE), as well as from the Honduran Association of Small Renewable Energy Producers (AHPPER), representing the private sector.

140. Moreover, the newly established SREP Technical Committee, which is comprised by technical experts from the aforementioned institutions, will provide technical support to the SREP Executive Committee. This technical committee will facilitate technical advice and information sharing, as well as ensure that SREP funds are channeled to address various barriers that hinder the development of the RE sector in the country. The design phase of the Honduras IP has witnessed a dynamic interaction between both committees. However, a more thorough analysis will be required to set specific roles that each of these committees will have during the implementation of SREP-funded projects.

141. Experts from various entities will contribute to the execution of the SREP Program in Honduras. As head of the SREP Executive Committee, as well as active member of the SREP Technical Committee, SEFIN will play a major role in the overall management and execution of the SREP Program in Honduras. To ensure a more efficient and effective performance, SEFIN has been divided into different under-secretariats, directorates, units, and departments. These entities include the General Directorate of Public Credit (DGCP), the Unit for the Mobilization of Economic and Financial Resources for Climate Change, the General Directorate of Public Investment (GDPI), and the Project Management Unit (UAP). For instance, the General Directorate of Public Credit (DGCP) can contribute experience in the management and administration of public debt. The Climate Change Economic and Financial Management Unit, which is attached to DGCP, can contribute experience in the management of resources from various funds and international financial institutions aimed at financing programs to address the challenges posed by climate change. The General Directorate of Public Investment (DGPI) offers capacities for technical coordination for public investment. Likewise, the Project Management Unit (UAP) provides expertise associated with the execution and monitoring of international cooperation programs implemented by SEFIN. Details about these entities (e.g., structure, functions) are provided in Annex 9.

RISK ASSESSMENT

142. The overall implementation risk is assessed as low. This next section examines the institutional, environmental, social, financial, technological, and implementation risks involved.

Table 18: Risk Assessment of the SREP Investment Plan for Honduras

Risk	Description / mitigation	Residual risk
Institutional (risks related to the regulatory and legal environment and/or institutional capacity)	Although there are barriers at the level of institutional framework and governance of the sector, as well as limitations on availability of policies and regulations, GoH has the political will and the relevant stakeholders have the degree of organization and institutional capacity needed to develop, implement and monitor the program. The passage of RE incentive laws, the holding of a bidding process for renewable energy and the target set in the National Plan of a 80/20 mix (renewable/thermal) by 2034, reveal the political will to continue improving institutional conditions and governance in the sector, taking advantage of the opportunities offered by SREP.	Low
Environmental (risks related to environmental impacts)	The country has an Environment General Law, regulations and agencies involved in environmental appraisal of energy projects, for which the National Environmental Evaluation System (SINEIA) has been set up. The many RE projects developed in the country have produced experiences on environmental control measures which need to be taken into account for the construction and operation of projects. In order to assist the RE projects to be more climate resilient, in the face of increasing climate change impacts in Honduras, ADERC will support the execution of hydrologic or other resource studies that consider long-term climate forecasts, as well as climate change adaptation projects such as watershed management plans for hydro projects. Strengthening SINEIA and the actors involved in the control and monitoring of environmental mitigation measures would be a means of mitigating the environmental risks in the development of RE projects.	Low
Social (risks related to social issues)	Development of RE projects in many cases leads to social conflicts caused by misinformation, political ideologies, gender inequality, socialization processes, inadequate and occasionally lack of commitments offered by the project developers. To mitigate this risk, the IP for SREP envisages strengthening the capacities of all stakeholders in the projects, promoting information campaigns and participatory processes of socialization of the projects, as well as monitoring the commitments made by the project developers. The program has included specific components to address these issues.	Moderate
Financial (risks related to the financial viability of the sector or entities)	Although the financial situation of the public company with which the project developers enter into energy supply contracts (ENEE) is weak, these contracts are backed by a sovereign guarantee from the State of Honduras. ENEE's financial situation hinders access to funds for investment in the sector, mainly to extend electricity coverage and strengthen its distribution and transmission systems. SREP will contribute strengthening political processes in favor of the transformation processes in ENEE and provide funds for new models of rural electrification. The ADERC program is based on the financial support of a diversified set of investors, and aims to reduce risk and increase capacity in the market so as to lower the cost of capital and thereby increase attractiveness to said investors. This diversification should reduce financial risks, and the involvement of domestic financial entities is expected to slightly decrease sensitivity to country risk.	Moderate
Technological (risks associated with technological complexity)	The country has wide ranging experience in developing renewable energy technologies, both for applications in the rural sector and in grid connected systems. These include experiences and technological advances in improved stoves; implementation of photovoltaic systems for domestic, productive, educational and health applications; installation of wind farms; use of biomass waste such as application of methane capture systems for power generation and reducing environmental pollution; and installation and operation of hydropower plants with a range of capacities.	Low
Execution (risks related to implementation capacity)	A SREP Executive Committee has been set up by decree, formed by the public and private sectors, which will approve initiatives financed under the program. There will also be an intergovernmental technical support team (SREP Technical Committee), to facilitate inter-institutional coordination, which will review and prepare initiatives, which has proven to be effective based on experiences in the preparation of the IP. In addition, SEFIN has guidelines and the appropriate structure for implementing SREP-funded activities.	Low

MONITORING AND EVALUATION (M&E)

143. In terms of M&E in the energy sector, the country generates primary information on supply and consumption from the National Energy Balance (BEN) produced by DGE-SERNA; electricity statistics are produced by ENEE. The National Statistics Institute (INE) also produces some valuable information on energy use and consumption patterns. Likewise, the Honduran Association of Small Renewable Energy Producers (AHPPER) collects information associated with private-sector companies.

144. However, as Table 19 shows, there are limitations on the processing of additional information which contributes to improving M&E in the energy sector, especially information disaggregated by gender, energy and poverty, quantification of investment and job creation, among others.

145. In this respect it is important for SREP to provide technical assistance for capacity building in the institutions that manage the information related to the energy sector, in an effort to create reliable and organized systems which meet international M&E reporting standards for the energy sector. This technical assistance is included in the operating expenses for preparation of investments in the investment plan budget. The M&E executed for the SREP program will be implemented by national entities instead of temporary entities in order to build capacity in a long-term and catalytic manner.

146. SERNA as the leading entity in the energy sector is the institution responsible for providing the baseline information on the energy sector to help the SEFIN manage the M&E in the SREP investment plan. CNE will also provide information, as established in article 4 of the LMSE Law.

147. Table 19 below presents the M&E results framework.

Table 19: Framework for Monitoring and Evaluation Results

Results	Indicators	Unit	Baseline	Target	Collection Respon-sibility	Data source
Direct project outputs and outcomes						
1. Increase in access to electricity	Number of rural beneficiaries with new access to electricity (coming from renewable sources[34])	# of people	100,000	200,000	ENEE	National Coverage Report
2. Increase in RE generation capacity and supply	RE generation capacity	MW	40[35]	100	ENEE	Electrical Statistics
3. Expansion of transmission infrastructure (to ensure access to RE generation potential)	New transmission capacity	km of transmission lines and # of sub-stations		7 existing substations to be expanded, 4 new substations, and 207 km of new transmission lines	ENEE	Expan-sion Planning
4.Reduction in expenses for energy services	Marginal cost of electricity (grid)	USD/ MWh	107	TBD[36]	ENEE	ENEE
	Expenses for firewood purchase: a) rural, b) urban	HNL[37]	a) 14,560, b) 23,660	a) 5,824, b) 9,464[38]	SERNA	ICF/ SERNA

[34] Excludes large-hydro

[35] This baseline generation capacity corresponds to the current small-hydro installed capacity, given that this is the technology that is expected to receive most of the SREP investment and financing of the grid connected generation (ADERC) component given the cost-effectiveness and readiness criteria to be applied.

[36] The expected effect of new, lower-cost RE on marginal cost in the grid will be estimated during project preparation phase, or early in the implementation phase (once solid forecasts on new RE supply into the grid can be completed).

[37] HNL: Honduran Lempiras. At the exchange rate of 1 USD = 19.11 HNL, equivalent baselines values in USD are a) USD 762, and b) 1,238. Targets are a) USD 305 and b) USD 496.

[38] Baseline minus 60% (based on expected efficiency gains from efficiency cookstoves)

5. Increase in access to lower cost-lower emission energy technologies	New access to efficient cook stoves	# of additional cook-stoves		50,000	SERNA	ICF/ SERNA
6. Reduction of GHG emissions	a) Tons of CO_2e emissions avoided – Grid connected generation	Tons CO_2e / year		152,424[39]	SERNA	SERNA
	b) Tons of CO_2e emissions avoided – efficient cook stoves	Tons CO_2e		TBD[40]	SERNA	SERNA/ ICF
7. New and additional funds for projects related to renewable energies	SREP funding leverage factor	ratio		1:9	SEFIN	SEFIN
Catalyzing and replication effect						
1. Increase in investments in renewable energy	a) RE investment of total investment in generation in the energy sector	%	TBD[41]	TBD[42]	SERNA/ SEFIN	SERNA/ ENEE
	b) Rate of new investment in RE generation capacity	USDM/ year	20[43]	50[44]	SERNA/ SEFIN	SERNA/ ENEE
2. Improving the conditions favorable for production and use of renewable energy	b) enactment of policies, laws and regulations for renewable energy	Policies, Laws, Regula-tions		Long-term energy policy developed and enacted	SERNA /CNE	SERNA/ CNE
				Regulations and adaptations of promotion policies adequate to each RE technology	SERNA/ CNE	SERNA/ CNE
				Standards and specifications for each RE technology	SERNA/ CNE	SERNA/ CNE
	c) development of guidelines			Guidelines for obtaining construction, operation and supply permits	SERNA/ CNE	SERNA/ CNE
3. Increased access infrastructure to RE generation sources	RE generation potential newly accessible through new transmission infrastructure	MW		208[45]	ENEE	Electrical Statistics
4. Increase in energy security	a) Proportion of total power from renewable sources	% of total GWh	48	TBD[46]	ENEE	Electrical Statistics

[39] This initial estimate has been based on the target of 60MW of new small-hydro generation capacity, an expected capacity factor of 50%, and a grid emission factor of 0.58 (this grid emission factor will be confirmed upon adoption of an adequate methodology) .

[40] This will be determined upon adoption of an adequate methodology. The calculation will be based on the average emissions from traditional open fires and the expected reductions in the consumption of wood from the use of efficient cookstoves.

[41] Further research will be done during project preparation phase to determine average investment in generation in the energy sector in past years.

[42] Will be determined during project preparation phase.

[43] This baseline of investment in RE generation capacity corresponds to the estimated investment in small-hydro, given that this is the technology that is expected to receive most of the SREP investment and financing of the grid connected generation (ADERC) component given the cost-effectiveness and readiness criteria to be applied.

[44] This target investment will include expected catalytic effect (investment on other small-hydro projects beyond those which the program will finance directly).

[45] This figure represents the amount of RE generation potential identified in previous studies and that –if the corresponding RE plants were built- the new transmission lines would be able to connect into the grid.

[46] Will be determined during project preparation phase.

	b) Proportion of installed capacity from renewable sources	%	38	56[47]	ENEE	Electrical Statistics
Transformative Impact						
Transformation of supply and use of energy by poor women and men in low income developing countries, with low levels of low carbon emission	a) percentage (%) of energy services from modern sources, renewable with low carbon emission levels	%	51.0	TBD[48]	DGE/ SERNA	BEN
	b) proportion of population with access to electricity	%	81.3	85.0[49]	ENEE	National Coverage Report
	c) per capita energy consumption	BOE per capita	3.52	TBD[50]	SERNA	BEN/ INE
	d) per capita electricity consumption	kWh per capita	643	TBD[51]	No	BEN/ INE
	e) Time dedicated to the collection of firewood for use in cook stoves by i) women, and ii) men		TBD[52]	TBD	TBD	TBD
	g) Reduced deforestation pressure	Annual rate of defores-tation	TBD[53]	TBD	TBD	TBD

47 By 2015, from ENEE's Expansion Plan.

48 Will be determined during project preparation phase.

49 Target by 2015.

50 Will be determined during project preparation phase.

51 Will be determined during project preparation phase.

52 Baseline and target numbers will be determined in the preparation phase (or early stages if program implementation), after adequate studies have been conducted.

53 Baseline and target numbers will be determined in the preparation phase (or early stages if program implementation), after adequate studies have been conducted.

FINANCING PLAN AND INSTRUMENTS

Table 20: Summary of Investment Plan for Honduras (USD million)

Component	Private/ local investors	SREP Grants	Other SREP-con-cessional finance	MDBs	Bank loans	NGOs	ICAs	GoH	Total (MUSD)
General preparation and operation expenses									
IP Preparation Grant		0.375							**0.375**
Operation expenses for in-vestment implementation (5yrs)		1.025						0.2	**1.225**
Component 1: Strengthening the RE Policy and Regulatory Framework (FOMPIER)									
RE Policy		0.3					0.1	0.1*	**0.5**
Law & Regulations		0.3					0.1	0.1*	**0.5**
Energy Control Standards		0.3					0.1	0.1*	**0.5**
Capacity Building		0.8					0.1		**0.9**
Sub-total		*1.7*					*0.4*	*0.3*	***2.4***
Component 2: Grid-Connected RE Development Support (ADERC)									
Component Preparation		0.3							**0.3**
Pre-investment/equity	20.0								**20.0**
Risk Capital Fund			10.0	10.0					**20.0**
RE Projects Debt				60.0	60.0				**120.0**
Access infrastructure to RE potential		4.0		50.0				2.5	**56.5**
Studies/consultancies		1.2					0.1	0.1	**1.4**
Capacity building		1.2					0.2		**1.4**
Fiscal Support[§]								14.5	**14.5**
Sub-total	*20.0*	*6.7*	*10.0*	*120.0*	*60.0*		*0.3*	*17.1*	***234.6***
Component 3: Sustainable Rural Energization (ERUS)									
Component preparation		0.3							**0.3**
RE systems for isolated communities	6.0	6.0		6.0			4.0	2.0[‡]	**24.0**
Sustainable and efficient firewood use	2.0	2.0				1.0	2.0	0.5[‡]	**7.5**
Studies/technical designs/consultancies		0.95					0.5	0.1*	**1.55**
Capacity building		0.95					0.5		**1.45**
Sub-total	*8.0*	*10.2*		*6.0*		*1.0*	*7.0*	*2.6*	***34.8***
Total (SREP Stage 1)	**28.0**	**20.0**	**10.0**	**126.0**	**60.0**	**1.0**	**7.7**	**20.2**	**272.9**

Notes

* GoH contributions in kind and labor

‡ GoH contributions in kind and labor and contributions by local governments

§ Fiscal support includes USD 6M in tax exemptions and USD 8.5 M in incentives given to renewable energy tariffs, provided by ENEE

Annex 1: Assessment of the Country's Absorptive Capacity

ECONOMIC PERFORMANCE

1. In 2010, the Honduran economy reversed a previous trend of shrinkage, and grew 2.8%, a trend consistent with the recovery of the world economy which on average expanded 5.0%, driven by the recovery in emerging economies —which grew 7.1%— and to a lesser extent by growth in developed countries —where the United States expanded 2.9%. This upturn in global economic activity stimulated the performance of the Honduran economy, which expanded in 2010 in contrast to the 2.1% contraction during the same period a year before. Growth occurred in domestic and external demand, contributing to a large extent to reactivation of foreign trade, strengthened by improved prices of the primary products exported by Honduras.

2. Normalization of bilateral and multilateral relations with friendly governments and international organizations since February 2010 has returned financial and capital flows to normal, which is generating an increase in both domestic and foreign investment thus resuming the path of growth. The improvement in economic activity reflects the vigorous growth of the productive sectors, especially: communications, manufacturing, commerce, transport, financial intermediation and agriculture, livestock, forestry, hunting and fishing.

3. The role played by the external sector in 2010 was instrumental in improving the country's economic activity, closely tied to the reactivation of the U.S. economy which is Honduras's main trading partner, as well as the economies of its regional partners. This improvement in foreign trade is the result of significant growth in exports (FOB) which reached 19.0%, while imports (FOB) also expanded 17.1%. The trend in family remittances was also positive trend, rising 5.1% from USD2.469 billion to USD2.594 billion, representing 16.8% of GDP. This trade reactivation and improvement in transfers has resulted in a current account deficit of 6.2% of GDP (USD954.8 million), which is consistent with the historical trend of this indicator for Honduras. The Balance of Payments closed with a positive balance of USD568.6 million, which strengthened the foreign assets held by the Central Bank of Honduras.

ECONOMIC OUTLOOK 2011

4. The global economic recovery in 2010 was slower than expected. Latent risks were still present, especially in some European economies, which could affect external conditions in 2011. In the domestic area, monetary and fiscal stabilization in 2010 continued to favor a stable macroeconomic framework which will stimulate growth of the Honduran economy in 2011.

5. It is expected that the inflation for 2011 will be similar to 2010 (6.5%), although it is still subject to fluctuations in international oil and food prices. In the medium term the inflation target focuses on converging to a level similar as the average inflation in the major trading partners.

6. Growth of economic activity could continue with the recovery that began in 2010, reflecting an increase in GDP of 3% to 4%. The sectors which make the most important contribution to growth are likely to be communications, manufacturing, agriculture and commerce; while the increase in exports and consumption will be the main source of this growth on the expenditure side.

7. In the external sector, the current account deficit in the balance of payments is expected to be higher than 6% of GDP, essentially due to growth of exports and imports of goods associated with the increased international and domestic economic activity. Family remittances will continue to finance much of the gap in balance of goods and services. Also, financial flows will be stimulated by an increase in Foreign

Direct Investment (FDI), an important flow of foreign financing. This results in a balance of reserves in the Central Bank which will cover three months or more of imports of goods and services.

8. The objective of fiscal policy is to improve the quality of public spending, reduce the overall public sector deficit to 2.0% of GDP over the medium term, and maintain the debt/GDP ratio below 30%. In line with these targets, the overall deficit of the consolidated public sector by the end of 2011 will not exceed 3.1% of GDP.

9. In April 2010, Congress passed a comprehensive tax reform which is expected to boost revenue to 2.5% of GDP (on an annual basis). In June 2010, a process of verification of employment began in the education and health sectors (which account for most of the government wage bill), subsidies were eliminated for all users with electricity consumption above 150 kWh per month, the way energy subsidies are provided to the poor was improved, and public companies adjusted their rates to better reflect their operating costs.

10. The target of the 2011 budget is an overall Central Government fiscal deficit of 3.4% of GDP, in line with the overall consolidated public sector deficit of 3.1%. The budget envisages increased spending in priority areas, especially poverty reduction and public investment. To achieve this, it is considered that the tax reforms passed in April 2010 will generate the expected results, combined with strict control of public sector current expenditure, especially wages.

DEBT SUSTAINABILITY

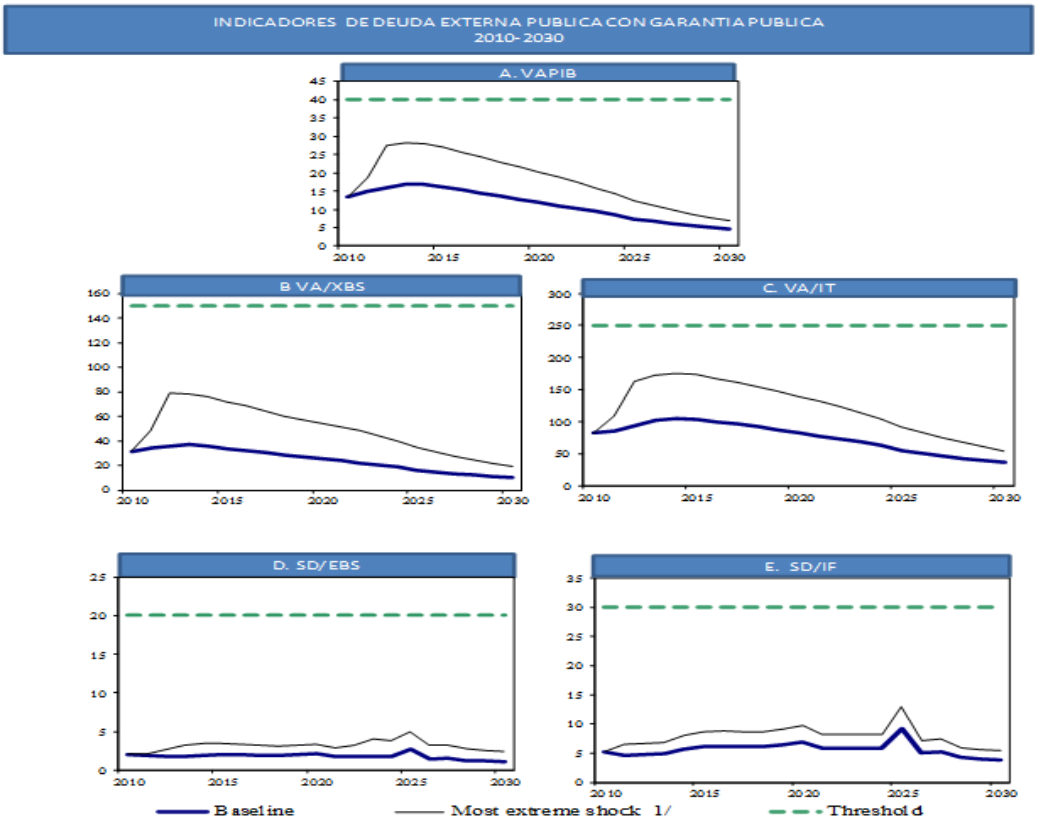
11. In the case of Honduras an analysis of the sustainability of external public debt[54] in relation to the solvency indicators (Present Value of Debt[55] PVD/GDP, PVD/Fiscal Revenue (FR), PV/Exports of Goods and Services (XGS)), as well as the liquidity indicators (Total Debt Service (TDS)/FR and TDS/XGS) shows that during all the analysis period (2011-2030) the indicators remain below the internationally established thresholds for Honduras[56]. According to the methodology of the Debt Sustainability Framework (DSF) the medium and long term risk of the public debt becoming unsustainable is low (see Table 21).

[54] This analysis of sustainability is from November 2010.

[55] Present Value of Debt is calculated on a discount rate of 4%

[56] According to the performance categories (strong, medium, poor) determined by the level of the CPIA indicator (Country Policy and Institutional Assessment) prepared by the World Bank, the 2007-2009 average is 3.69 placing the country at middle level.

Table 21: External Public Debt Indicators with Sovereign Guarantee



Annex 2. Stakeholder Consultations

1. To prepare an investment plan to identify barriers and propose solutions that will help in the short and medium term to create a transformative effect on the energy sector, a series of activities were undertaken, including: (a) Identification Mission with the related Multilateral Development Banks and government institutions; (b) individual meetings with relevant stakeholders such as partners linked to renewable energy, civil society, representatives of commercial banks and project developers; (c) Joint Mission with Multilateral Development Banks, with participation of important stakeholders linked to the renewable energy sector; and (d) continuous socialization process of the Investment Plan and fluid communication with the actors identified.

2. Importantly, a positive contribution was made to the preparation and supply of information on the Investment Plan by the formation of a SREP technical committee with representatives of the Ministry of State for the Office of the Presidency (SDP), Ministry of State for Finance (SEFIN), Ministry of State for Natural Resources and Environment (SERNA), National Energy Commission (CNE), Empresa Nacional de Energía Eléctrica (ENEE), and a representative of the private sector from the Honduran Association of Renewable Energy Producers (AHPPER).

EXPLORATORY MISSION

3. A mission of the multilateral development banks (Inter-American Development Bank, International Finance Corporation (IFC) and World Bank) visited Tegucigalpa, Honduras, from February 2 to 4, 2011 to discuss with representatives of the Government of Honduras, civil society, private sector and international agencies the process of preparation for the Investment Plan for the Program for Scaling up Renewable Energy Sources (SREP).

4. The overall objective of the mission was to make an initial contact between the authorities and national institutions and the Multilateral Development Banks (MDBs) to establish general guidelines for preparation of the Investment Plan.

INDIVIDUAL INTERVIEWS WITH KEY STAKEHOLDERS

5. During August 2011 a series of interviews were scheduled with key stakeholders involved with renewable energy with the main objective of getting in-depth knowledge of the positive experiences and problems identified by each of them, strengthening the socialization process of the SREP Investment Plan and establishing the synergies necessary for the Program to have supplementary and stimulating effects.

6. Meetings were held with Government Institutions (SAG, SERNA, PRONADERS), with representatives of international cooperation agencies (UNDP, USAID, GIZ, EU), with the private sector (AHPPER and executives from the national commercial banks) and discussions with project developers. The meetings were very positive in identifying the main challenges that the Investment Plan will have to address.

JOINT MISSION

7. The joint mission of the Multilateral Development Banks (MDBs) in support of the SREP program in Honduras took place in Tegucigalpa from August 29 to 2 September 2011. The main objective of the mission was to move forward with finalization of the Investment Plan for the Program. The mission included the government's SREP technical team with representatives from: SDP, SEFIN, SERNA, CNE, and had the support of the National Banking and Insurance Commission (CNBS). Other participants

included the international cooperation agencies such as: United Nations Development Program (UNDP), European Union (EU), German Cooperation Agency (GIZ/EnDev-Ho), and the Japanese International Cooperation Agency (JICA), private sector organizations (AHPPER, Honduran Council of Private Enterprise (COHEP), private banks, the Central American Bank for Economic Integration (BCIE), and NGOs involved in issues relevant to the program.

8. The mission contributed a better view of the barriers to developing sustainable renewable energy projects (especially financial and grid connection) and explored gender issues, the potential benefits of the use of efficient stoves for health and the local and global environment, and the challenges of bringing renewable energy-based electricity services to rural populations, among others. The discussion emphasized the most appropriate instruments to be used in the context of SREP.

9. The technical meetings detailed the activities to be supported by the SREP program aimed at meeting the targets for renewable energy use, and prepared a document with the detailed guidelines to be adopted by the Honduras Investment Plan for the SREP Program.

PUBLIC CONSULTATIONS

10. The budget structure and Investment Plan were reviewed and discussed with key stakeholders at different stages. In a first stage, an initial draft of the IP was developed based on the identification of problems and barriers faced by RE. For the preparation of this situational analysis consultations with stakeholders with experience in the ER were carried out, and further consultations were conducted addressing the issue of gender.

11. In a second stage, during the MDB joint mission, the draft proposal of the IP was socialized with various stakeholders, including relevant government agencies, international cooperation agencies (JICA, EU, GIZ and UNDP), NGOs working in this area (CARE International, World Vision Honduras, CRS, VIDA MEJOR Program and the Honduran Association for Development -AHDESA), private sector stakeholders (commercial banks, the Honduran Council of Private Enterprise -COHEP) and Multilateral Development Banks (including the Central American Bank for Economic Integration -BCIE). Besides socializing the proposed PI, these sessions allowed for valuable contributions from these stakeholders to enrich the PI.

12. Finally, based on the inputs collected from the two previous stages of diagnosis and socialization with relevant stakeholders and representatives of the MDBs that participated in the joint mission, the final draft of the program's Investment Plan was developed and published on September 27, 2011 on the website of the Ministry of State for Finance (www.sefin.gob.hn). This event was notified by e-mail to key stakeholders, asking them to provide any additional feedback to SEFIN's Climate Change Unit for final consideration. As a result, one additional comment was received via email, which was taken into account in the formulation of this PI.

Annex 3: Co-benefits

1. The Honduras SREP Investment Plan has been conceived to maximize its development co-benefits. These are expected to occur at two levels:

GRID-CONNECTED PROJECTS

2. The most relevant impacts of grid-connected projects are expected to occur at the level of the national economy and the electricity system, due to the reduction in the use of fossil fuels, as compared to a reference scenario without RE projects:

- Reduction of the impacts of fuel imports on Honduras' economy
- Reduction of the exposure to fuel price volatility risks for the electricity system
- Reduction of the emission of local pollutants in fossil fuel-fired power plants

3. Other benefits at the national level include:

- Creation of direct (RE industry) and indirect jobs due to the more labor-intensive nature of RE technologies; creation of SMEs.
- Competitiveness of the RE industry
- Strengthening of the capacity of the banking system to provide project finance
- Better climate for investments in the country

4. Finally, RE projects provide benefits for the neighboring communities:

- Development benefits provided by RE power plant operators as a result of compensation agreements
- In some cases, electrification due to the construction of new transmission and distribution infrastructure

RURAL ENERGIZATION

5. Off-grid rural electrification projects generate a number of development co-benefits in the communities where the projects take place, including:

- Better life conditions due to the access to better lighting and communication services
- Better health and education due to the access to essential energy services
- New community activities
- Higher productivity due to the access to better energy services
- New productive activities due to the access to new business opportunities

6. Improved biomass cook-stoves produce significant benefits as well, including

- Reduction in the negative impacts of indoor air pollution on health (notably respiratory and eye diseases), especially among women and small children, as well as burns
- Reduction in firewood harvesting time or firewood purchase expenditure
- Forest, soil and water conservation

Annex 4: Existing Activities in the Field of Renewable Energy in Honduras

1. Table 22 summarizes existing activities related to renewable energy

Table 22: Summary of Existing RE Initiatives

	Organization	Projects	Interest	Budget (estimated)
1	**US-AID**	Proparque	RE in 10 protected areas Support for the legal framework (permits, EIA)	USD1,500,000 USD500, 000
		Access (USD50M)	Small grants for integrated family support e.g. eco-stoves	USD2,000,000
		Mérida-Carsie Program	Support for insecurity prevention initiatives e.g. studies, small projects	≤ USD120, 000/ project.
		Various	Support for small RE projects initiative (micro hydros, PVs)	≤ USD50,000/ project
2	**GIZ**	EnDEV HO	8,000 justa stoves (42m pp) 3,000 PV systems (25m pp) 10 micro hydros (110.5kW 6,400 pp)	€3,000,000
		Program 4E (regional)	Technical Assistance for RE and EE	€5,000,000
		Continuation Prorrena (2014)	Technical assistance:	€5,000,000
3	**EU**	MOSEF Forestry sector modernization	Distribution of eco-stoves	€21.5 million (all)
		FORCUENCAS 2nd. phase	Eco-stoves, PV systems	€8 million (all)
		New project	Interest in eco-stoves, RE systems	± €47 million (all)
4	**UNDP**	PPD, other grants	2 Mini hydros in Paulaya Sico area. Pre-feasibility CH TOMAL (13 MW) GEF Project formulation ± USD1,500,000 AT in firewood and biogas studies	
5	**ENEE**	GAUREE II	M1 Electrification with RE (PV, micro hydros)	€6.68 million (all)
6	**KfW**	Green MSMEs (regional)	Financing for EE and RE projects ≤ 5 MW	Up to USD5 million per project
		LC	Financial support to BCIE for RE	€64.5 million
7	**GEF-BCIE-UNDP**	Areca (regional)	Partial credit Guarantee Fund for RE (<10 MW)	USD5 million

Annex 5: Component 1 – Strengthening the RE Policy and Institutional Framework (FOMPIER)

PROBLEM STATEMENT

1. In the energy sector of Honduras there is a need to strengthen the policy, regulatory, and institutional framework, which currently limits development of renewable energy generation by inhibiting investment in the sector. There are barriers at the level of the institutional framework and governance of the sector, and the absence of policies, regulations and incentives for renewable energy. Among the former, the main need is to develop a long-term energy policy which is coordinated with a plan to mitigate climate change and/or a low carbon development strategy. At the same time, the legislation for promotion of RE has not been tailored to the characteristics of each technology. Among other things, it is necessary to design basic-type contracts for each one, as well as design and operating standards.

2. Another barrier is the fact that the method of determining marginal costs, tariffs and incentive systems does not reflect all the benefits that renewable generation offers to the country's electricity system. A related problem of definition of responsibilities for setting electricity tariffs has also been identified. In practice, it is ENEE —not CNE, the regulatory agency— which plays a more decisive role in this function. There is a conflict of interest in this situation because ENEE has its own generating plants and its role in setting rates has the potential to harm —and thus remove— incentives from the other renewable energy generators. These problems of definition of responsibilities can also be identified in the internal structure of some entities. At the same time, there is also a need to build institutional capacity in terms of staff availability and training.

PROPOSED CONTRIBUTION TO INITIATING TRANSFORMATION

3. SREP funds will be used to support development and implementation of policies, laws, regulations, rules, standards and incentive schemes aimed at improving the integration of renewable energy in the energy sector by reducing risks, transaction costs and encouraging investment in renewable energy.

4. The funds will be used to support meetings and technical workshops, consensus-building, studies, technical guides, training, materials development, among other instruments, in order to achieve the following outputs:

- Long-term energy policy and low carbon development strategy
- Adequately regulated promotion legislation
- Appropriate standards and specifications for different renewable technologies
- Incentives model (including tariff) appropriate for effective development of each renewable technology to be promoted, which reflects their benefits
- Standards for renewable energy technologies
- Guidelines for obtaining construction, operation and supply permit
- Intra- and inter-agency responsibilities defined and duly observed.
- Capacity building of governmental and nongovernmental agencies to allow for future expansion of mitigation activities, including renewable energy.
- Knowledge management activities.

IMPLEMENTATION READINESS

5. The important dimensions in the analysis of preparation for implementation of this component require the existence of political will and the organizational and institutional capacity of the relevant actors for preparing, implementing and supervising the program. Political will is high as is evidenced by the recent holding of a public bidding process for 250 MW of renewable energy, the target of the Country Vision to achieve a 80/20 mix by 2038, and the current government campaign to promote renewable energy, among others. It is also evident in the direct involvement of high level politicians (including the Lady Presidential Delegate) in the preparatory activity of the SREP program.

6. In terms of organization and institutional capacity, specific institutions and units have been assigned to SREP, along with the formation of a multidisciplinary National Technical Team, comprising officials from SEFIN, SDP, SERNA, CNE, ENEE and AHPPER. The assigned agencies have professionals with appropriate technical capability for promoting formulation of policies, regulations, incentives, etc. which are objectives of this component. The financial resources provided by SREP will strengthen this capacity, mainly through provision of funds for training and study.

7. Other conditions contribute to the high degree of preparation for developing the SREP program. As a result of the bidding process for renewables, 49 projects have been prepared with PPAs assigned. This portfolio also creates more interest by investors and the banking sector when they see growth potential in the sector. In addition, international agencies (e.g., BCIE, UNDP, EU, GIZ, USAID, JICA) are already working on projects, providing valuable institutional and technical capability to support this initiative.

RATIONALE FOR SREP FINANCING

8. The objectives of this component are focused on strengthening the regulatory, institutional and policy frameworks that facilitate development of renewable energies, in line with national development objectives (National Plan). The weaknesses in this area are one of the fundamental barriers to growth of the sector.

9. The financing required through the SREP program is important not only because of its alignment with the objectives of this program, but also because the proposed activities in this component do not have sufficient financing available from the public sector, and much less —despite a large potential— from the private sector. Consequently, the SREP investment covers a critical gap for the development of RE in the country.

10. Long-term energy policy will make the development of the sector more predictable, helping to align work plans and increasing capability for planning investments in renewable energy. Building the institutional capacity of government agencies will improve capabilities for policy formulation, planning, regulation and oversight of the sector. The appropriate regulation of the promotion laws for each renewable energy technology will provide the right incentives for effective development, creating the conditions for investment and its financing. The development and adoption of standards for renewable energy technologies will increase technical confidence in renewable energy projects, reducing the perception of technological risk which at times stands in the way of access to financing.

RESULTS INDICATORS

11. Table 23 shows the indicators for the FOMPIER Component:

Table 23: Results Indicators for FOMPIER Component

Results	Indicator	Targets
Improving the conditions for production and use of renewable energy	a) Development of low carbon development plan	Plan developed and implementation started
	b) enactment of policies, laws and regulations for renewable energy	Long-term energy policy developed and enacted; Regulations and adaptations of promotion policies adequate to each RE technology; Standards and specifications for each RE technology
	c) development of guidelines	Guidelines for obtaining construction, operation and supply permits

12. **Financing Plan (USD million)**

Table 24: Financing Plan for FOMPIER Component

Strengthening the RE Policy and Institutional Framework (FOMPIER)	SREP (grants)	ICAs	GoH	Total
RE Policy	0.3	0.1	0.1	0.5
Laws & Regulations	0.3	0.1	0.1	0.5
Energy Control Standards	0.3	0.1	0.1	0.5
Capacity Building	0.8	0.1	0.0	0.9
Sub-total	***1.7***	***0.4***	***0.3***	***2.4***

PREPARATION TIMETABLE

13. See Annex 8.

Annex 6: Component 2 – Grid-Connected RE Development Support (ADERC)

PROBLEM STATEMENT.

1. Despite the existence of a portfolio of RE projects in Honduras which are in the fundraising stage, various interrelated barriers in the young RE market in Honduras —including risk and high appraisal costs, lack of training, and financial, infrastructure and regulatory barriers— combine to prevent projects from reaching construction stage. The main barriers to RE development can be described as follows:

2. **Risk and high appraisal costs barriers.** Due to the relative immaturity of RETs, Honduran banks have difficulties in assessing the risk associated with these investments, which means that the cost of financing is higher for these technologies. The information required by banks to appraise RE investments can be greater than that required for conventional energy.

3. Moreover, the immature RE market in Honduras has many new developers not previously known to the banks. Creditors may impose additional costs on these less capitalized developers with limited track records, which do not submit traditional proposals suitable for qualifying for a 'traditional' loan (corporate finance based on the corporation and not the project itself). As a new industry, there is no consensus among the banks on information requirements or financing standards. So it is difficult for developers to prepare adequate proposals.

4. The problem of risk and information costs is exacerbated by the small scale of many projects, which means that the fixed costs of appraisal are relatively higher for RE and the gross returns lower. In this situation, creditors do not consider appraising these projects to be worthwhile, despite their potentially good intrinsic financial aspects.

5. **Sponsors and banks capacity barriers.** Many of the project sponsors in the market are new and lack preparation, experience, and technical expertise. This lack of capability creates a technical barrier — sponsors do not prepare the feasibility and engineering studies required by banks. And from the banks' point of view, the proposals submitted by them do not meet their technical or professional expectations.

6. Moreover, Honduran banks do not have the capability to appraise projects for project finance. Generally they only grant corporate finance and not project finance (based on the aspects and cash flows of a project).Using the banks' current criteria, new and small RE projects do not qualify for credit. The proposals submitted by the promoters often do not meet their technical or professional expectations, which is sometimes due to lack of capability or funds.

7. As a result of these gaps between project developers and banks, and the issues of risk and preparation previously mentioned, there is a lack of capital investment and credit for the projects which prevents their development.

8. **Financial barriers.** This section highlights three types of barriers. First is lack of equity investment. The low level of equity invested in the sector results from poor project preparation, and a high perceived risk because the industry is relatively new in Honduras. Lack of credit —to attract credit the project needs equity investment— if the equity is insufficient the project risk is too high. Lack of investment in projects and scarce resources on the part of promoters leads to an inadequate technical preparation of projects.

9. **Infrastructure barriers.** The proposed RE projects are located far from the grid and the transmission infrastructure needed to connect them is absent due to limitations in public investment (transmission is owned and operated by the State). As a result, building transmission lines is a financial cost which falls on the promoter or ENEE, but in reality the connection cost often falls on the sponsor as the party interested in developing the project, which increases the project's cost.

10. **Policy, social and environmental barriers.** RE projects also face a policy vacuum which results in lower investments in the sector. In addition, hydropower developments face the issue of obtaining the local acceptance from both the communities and organized groups, which in most cases are opposed to the construction and operation of this kind of RE projects. This opposition in many cases is caused by misinformation, political ideologies, inadequate socialization processes and/or environmental impact assessments, and occasionally lack of commitments offered by the project developers.

11. Overall, this component solves the barriers described above in the following ways:

Table 25: Barriers in the RE Market and Proposed Solutions in ADERC

Component	Financial	Know-how and Human Resources	Infrastructure
Access to infrastructure	Eliminates or reduces the connection cost for the developer; Supports ENEE's financial needs when installing electricity infrastructure		Solves grid connection problem
Technical assistance and knowledge management	Reduces risk for banks. Provides expertise to banks and financial institutions for supporting renewable energy projects	Provides training to sponsors to improve projects, and training to improve knowledge on project development and preparation including social and environmental issues	Improves the technical quality of projects
Capital support fund	Provides capital, which lowers project risk and permits provision of debt		
Debt	Completes the financial requirements for starting installation of projects		
Hedging instruments	Help facilitate funds and provide guarantees to cover financial and political risks		
Pre-investment capital	Projects need to start with capital, studies and preparation by the developer		

SUB-COMPONENTS

12. The ADERC component described in the Program Description section of this IP will include the following sub-components, some of which require SREP funds, and some of which do not.

13. The **infrastructure access sub-component** will finance the extension of the transmission and distribution system to connect the RE projects financed by SREP and multilateral banks. The contribution of a grant from SREP will help leverage loans from ENEE for the necessary electrical infrastructure for interconnection of the potential projects identified.

14. The **technical assistance and knowledge management sub-component** will help close the gap between projects and their financing, ADERC projects will have to receive training and technical assistance for project preparation. The first step in this sub-component will be to provide clear information on investment opportunities in the market. For this, a study will look at the potential bankability of candidate projects using uniform standards. The study will also reveal what type of support is needed to make each project bankable. The study will be delivered to banks and to a capital support fund, so the study will have to utilize the financing criteria of each financing source.

15. Banks also need capacity building. For participating local banks there will be training courses on project finance and possibly evaluation of their portfolio, along with support during the process of project

selection and investment. Project developers will receive training on preparing business plans and the professional, financial and technical local aspects of projects.

16. Another type of support will be financial assistance for the feasibility and engineering studies (final design) to meet the requirements of banks and investment funds with respect to maximum possible preparation of projects.

17. Technical assistance will also be provided to lower the risk of social inequality, misinformation on the RETs and to improve poor people's access to the benefits of RE projects. This will be achieved through stakeholders capacity building for supporting local consultation processes, educational activities, and training for communities including a gender-specific approach which will seek to maximize the potential involvement of the community with a gender perspective in RET projects and support their involvement in rural community decision making with respect to energy investments. Also, safeguard policies —as a regular procedures and standard in MDB programs— will be applied at the preparation phase. Finally, this sub-component will include knowledge management activities geared towards capturing lessons learned in the investment component in terms of the investment market. It will also seek to develop and disseminate training materials used in the capacity building sub-component.

18. The **capital support fund for RE projects sub-**component will be set up and financed by SREP and MDBs (with the possible involvement of other sources including pension funds, private investors and/or commercial banks) to give temporary financial support to projects to enhance their bankability. The goal would be to provide capital investment in the form of equity, since this would lower the project risk to the maximum extent, but the fund must have the flexibility to respond to opportunities and risks in the market and to provide various types of support such as quasi-equity, debt, etc, as well as the flexibility to invest in various types of RE, and the possibility of investing in systems not connected to the ENEE grid.

19. The fund would be managed by a professional manager with extensive experience in the market and fund operating structure. The precise fund structure would be defined during the feasibility study phase.

20. **Debt provision sub-component.** Both the capital support fund and technical assistance with project preparation will reduce the risk associated with RE projects, and thus activate demand for provision of credit for projects with funds from multilateral banks and national commercial banks. A type of agreement within the component is proposed whereby a pipeline of projects would pass directly from the capital fund to be reviewed by the participating local banks. It can be anticipated that direct loans from the MDBs could also supplement the loans from the Honduran financial market. This type of risk diversification would be desirable from a financial point of view. The support of the MDBs could also take the form of loans and/or guarantees for local banks, as appropriate, facilitating the supply of credit to the projects on the most appropriate terms.

21. The **risk hedging financial instruments sub-component** includes guarantee instruments such as partial risk guarantees issued by MDBs, and existing instruments such as the ARECA partial guarantee fund, which is the result of cooperation among GEF, UNDP, and BCIE. These instruments are designed to facilitate the provision of funds for financing projects by hedging certain risks, including market risk.

22. The **pre-investment capital sub-component**, which will be financed entirely by the project developers, is mentioned here to emphasize their participation, and the need for them to continue assuming risk. It includes technical and prefeasibility studies, business plans, environmental studies, licenses, government permits, land acquisition and other facilities, and counterpart capital, among others.

23. It is expected that SREP-funded projects will comply with a set of indicative eligibility criteria listed in Table 26 .

Table 26: Expected, Indicative Eligibility Criteria for the ADERC Component

Project Development Status	Feasibility Study
	Operation Contract
	Water Contract (for hydro only)
	Technical and engineering studies complete
	Environmental License
Country Development Plan	Compliance with National Development Plan Priorities
Public Benefits	Business Model: Quality as a pilot project to demonstrate new technologies
	support from local communities and benefits conveyed to them, with emphasis on gender and ethnic equality
Technical Quality	Positive results on feasibility and technical studies; resource studies
Financial Viability	Aspects such as expected net present value of the project, adequacy of capital investment by sponsors, potential for borrowing
	Previous development experience of the project company, and technical capacity
Legal Aspects	Land titling: ownership or right to use of land
Environmental Aspects	Environmental contributions, for instance reforestation and GHG reduction
Access to the Grid	Projects without access to the grid should apply for the non-grid connected component

PROPOSED CONTRIBUTION TO INITIATING TRANSFORMATION

24. ADERC uses several coordinated financial and technical sub-components to reduce the costs and risks associated with new renewable energy projects, enabling their financing and implementation.

25. SREP concessional funds will be provided to establish a capital fund, and grants will support capacity building. These sub-components are specifically designed to address the particular barriers hampering renewable energy project development and especially small projects. The provision of capital investment and concessional debt to the market is expected to lower the long term cost of capital for RE projects firstly through demonstration effect, which will lower the perceived risks for both equity investors (domestic and international) and debt providers (domestic and international) and secondly through increased capacity. It is likely that the market will continue to require some subsidy elements, but to a reduced degree in the future. Establishing a proven track record will help future project developers to better understand the market, see it as proven, and plan their financing. Improved capacity in the market will lead to lower risk.

26. Lowered risks will directly result in a lower cost of capital, and therefore greater market viability, having the virtuous effect of attracting ever greater levels of market-rate financing, and requiring decreased subsidy elements from the public sector.

27. The heavy focus on training and capacity building, always in partnership with local agencies in order to increase permanence in the market, will maximize the transfer of best practices and also the program's long-term transformative and catalytic effect. This infusion of capacity through training will be complemented by the learning gained by banks, project sponsors, technical consultants and communities through execution of the ADERC portfolio.

28. During the preparation of this component it will be necessary to develop a more detailed baseline in terms of history of RE projects financed and bank participation.

IMPLEMENTATION READINESS

29. There is a portfolio of 49 renewable energy projects which already have contracts (PPAs) awarded in competitive bidding for purchase of renewable energy promoted by the Government through ENEE,

many of which are potential recipients of the assistance which SREP can provide to overcome barriers of access to financing.

30. The Government has demonstrated a strong commitment to supporting development of RE projects by developing incentive laws and purchase of renewable energy through bidding processes[57]. There is also a very motivated group of developers that have invested heavily in their projects which are in the fundraising stage. Trained technical staff is also available to support the engineering, installation, maintenance etc. of the projects. On the financial side, discussions were held with investors and banks to assess the interest in participating in the pilot phase, as well as the related availability of resources. They confirmed that funds are available to invest in RE projects, as long as the risk profile of these projects is strengthened with a more solid capital structure and adequate risk reduction mechanisms. The estimated available funds amount to USD60 million (as a minimum) from local banks and USD100 million from local institutional investors (in particular pension funds).

31. Economic conditions and prices in the energy market are favorable for the entry of renewable energy; for example the purchase price based on fossil fuels is high (27cents/kWh). There are installed RE projects with experience in best development practices, which can be replicated as models. Finally, RE producer organizations, banks and civil society are willing to cooperate with the component, having already contributed to the preparation of this IP.

RATIONALE FOR SREP FINANCING

32. Concessional funds and grants to support this new industry in Honduras will be used to improve the risk/reward balance in several ways and lower costs and risk in this market in a catalytic and transformative way. Given the capacity and demonstration effect that the program will have, the expectation is that risks in the sector will decline in the future, projects will be better prepared in their financial, technical and professional aspects, and there will be a greater consensus on the financing standards to be followed. The banks have sufficient capital, and with improved knowledge of project finance and given the risk reduction, there will be an increase in submission of projects in anticipation of an unlocking of funds for investment in RE projects. These improvements will lead to a more financially sustainable situation in the future, with less need for subsidized funds.

RESULTS INDICATOR

33. Table 27 shows the indicators for the ADERC component:

Table 27: Results Indicator for ADERC Component

Results	Indicator	Targets
Increase in RE generation capacity and supply	RE generation capacity	Installation of 60 MW
Expansion of transmission infrastructure (to ensure access to RE generation potential)	New transmission capacity	7 existing substations to be expanded, 4 new substations, and 207 km of new transmission lines
Reduction of GHG emissions	Tons of CO_2e emissions avoided – Grid connected generation	152,424 Tons CO_2e / year
3. Increased access infrastructure to RE generation sources	RE generation potential newly accessible through new transmission infrastructure	208 MW

[57] Renewable Energy Incentives Law 70-2007, International Public Bidding Process No. 100-1293/2009 and National Plan.

FINANCING PLAN (USD MILLION)

Table 28: Financing Plan for ADERC Component

Support for grid-connected RE projects	Private/ Local Investors	SREP Grants	SREP-con-cessional finance	MDB	Banks Loans	ICAs	GoH	Total
Project Preparation		0.3						0.3
Pre-investment/equity	20.0							20.0
Risk Capital Fund			10.0	10.0				20.0
RE Projects Debt				60.0	60.0			120.0
Access infrastructure to RE potential		4.0		50.0			2.5	56.5
Studies/Consultancies		1.2				0.1	0.1	1.4
Capacity Building		1.2				0.2		1.4
Fiscal Support							14.5	14.5
Component total	***20.0***	***6.7***	***10.0***	***120.0***	***60.0***	***0.3***	***17.1***	***234.6***

PREPARATION TIMETABLE

34. See Annex 8.

REQUESTS FOR INVESTMENT PREPARATION FUNDING

35. The GoH is requesting a USD300,000 SREP grant for the preparation of this component.

Template for Project/Program Preparation Grant Request[58]

SREP PROGRAM **Project/Program Preparation Grant Request[59]**			
1. **Country/Region**:	Honduras	2. **CIF Project ID#**:	(Trustee will assign ID)
3. **Project/Program Title:**	Grid-Connected Renewable Energy Development Support (ADERC)		
4. **Tentative SREP Funding Request (in US million total) for Project[60] at the time of Investment Plan submission (concept stage):**:	Grant: $US 6,700,000	Loan: $US 10,000,000	
5. **Preparation Grant Request (in USD):**	$US 300,000	MDB: IADB	
6. **National Project Focal Point**:	Leonardo Matute		
7. **National Implementing Agency (project/program):**	Secretaría de Finanzas (Ministry of Finance)		
8. **MDB SREP Focal Point and Project/Program Task Team Leader (TTL)**:	Headquarters-SREP Focal Point: Claudio Alatorre	TTL: Gregory Watson	

[58] To be annexed to the Investment Plan.

[59] A separate template needs to be presented for each project and program preparation grant request listed in the Investment Plan.

[60] Including the preparation grant request.

9. **Description of activities covered by the preparation grant:**

ADERC aims to catalyze transformation of the grid-connected renewable energy (RE) power generation project market in Honduras through strategic support to the financing, project development, and transmission sectors. ADERC will use the SREP funds for three purposes: (i) provide capacity building and technical assistance to projects and local banks; (ii) catalyze and maximize the amount of finance available for investment in grid-connected RE-projects through the formation of an investment fund that will support a portfolio of grid connected RE projects, and (iii) finance the extension of the transmission and distribution system to connect the RE projects supported by ADERC and its partners. The program will partner with various financial and technical partners, especially national banks, even if they are not directly implementing the SREP financing. In order to best design the ADERC components and to inform investors in the market, the Honduras SREP team requires a better understanding of the Honduran RE project and finance market. Sources of finance include existing investors (local banks, private investors, MDBs) and potential future investors (institutional investors, international donors, equity investors).

The preparation grant will fund several Market and Feasibility Studies: (1) a Financial Market Study which will assess sources of financing and (2) a Renewable Energy Generation Market Study on the RE project pipeline that will be shared with potential lenders/investors, and (3) a Feasibility Study which will recommend a design for the ADERC components.

In the Capital Market Study, the Consultant will assess the supply of finance for RE projects in Honduras, assessing the actors in the market, and criteria (technical, rate of return, etc) of investors and lenders. It will assess the experience to date of national lenders, establishing a baseline for lending activities. It will assess their barriers (including regulatory or legal) to further lending, attempt to summarize their investment criteria including appetite for risk, and perform a capacity needs assessment. For equity, international donors and private investors, the Consultant will assess the availability an interest of these sorts of lenders, and their investment criteria. For both it will especially assess the sorts of risk and cost barriers faced by investors and lenders. This may include workshops with local banks.

In the Renewable Energy Generation Market Study (RE Market Study), the Consultant will do a pipeline assessment of grid-connected RE projects in Honduras, including projects possessing a PPA. It will assess the projects from a technical and investment standpoint, (which projects meet the required rates of return?) ranking their bankability according to a consistent set of technical, managerial, and financial (etc) criteria, to be derived from the Supply Market Study. As part of the ranking exercise it will also deliver a gap assessment, outlining the technical needs of the projects in the pipeline. The study will also assess barriers for implementation of projects, including legal and regulatory. This may include workshops with project developers/sponsors and local communities. This component will build upon relevant studies already completed in the market.

The Feasibility Study will build on the supply and demand needs identified in the Market Assessment studies to provide recommendations for the financial mechanisms to be utilized in the ADERC components. It will specifically discuss the viability of potential financial instruments for the Investment Fund, (which may focus on equity investment), and make a recommendation for how to best structure those instruments. It will also describe the sorts of technical assistance programs that should be provided in order to maximize the catalytic impact of the program, generally keeping with those envisaged in the Investment Plan.

The Consultant will also perform an Environmental and Social Study, examining the Social and Environmental aspects of ADERC needed to prepare a safeguards document, as well as studying social and gender impact issues in communities hosting RE projects, and assessing the technical assistance needs of those communities in order ensure their access to benefits of the projects.

Deliverable	**Timeline**
(a) Capital Market Study, including a summary of national lender investment criteria and needs assessment	5 to 6 months from approval of the Investment Plan
(b) RE Generation Market Study, including a ranking/catalogue of projects and a technical needs assessment	6 to 7 months from approval of Investment Plan
(c) Feasibility Study, including recommended design of financial and grant components of ADERC	6 to 7 months from market studies preparation
(d) Social and Environment Assessment for preparation of safeguards document	6 to 7 months from markets studies preparation
(e) Study on relevant gender aspects	2 to 3 months from market studies preparation
Budget (indicative):	
10. **Expenditures**[61]	
Consultants	US$260,000
Equipment	
Workshops/seminars	US$15,000
Travel/transportation	US$10,000
Others (admin costs/operational costs)	US$5,000
Contingencies (max. 10%)	US$10,000
Total Cost	US$**300,000**
Other contributions:	
Government	US$20,000 (in-kind)
• MDB	US$40,000
• Private Sector	
• Others (please specify)	
11. **Timeframe** (tentative) • Submission of pre-appraisal document for SREP Sub-Committee Approval: 12-15 months from approval of Investment Plan • Expected Board/MDB Management[62] approval date: N/A	
12. **Other Partners involved in project design and implementation**[63]: National Technical SREP Team, private banks in Honduras, local technical agencies (TBD, as partner in execution of capacity building), COHEP, AHPPER, CNBS, AHIBA, PNUD.	

[61] These expenditure categories may be adjusted during project preparation according to emerging needs.

[62] In some cases activities will not require MDB Board approval

[63] Other local, national and international partners expected to be involved in design and implementation of the project.

13. **If applicable, explanation for why the grant is MDB executed:** The Government of Honduras has asked IDB to execute the grant due to its capacity in handling the timely contractual preparation of such a consultancy.
14. **Implementation Arrangements** (incl. procurement of goods and services)**:** The IDB will hire a consultant which is located in Honduras (or a nearby country, in which case they will travel to Honduras) to do market and feasibility research, and to produce the Deliverables. They will be supervised jointly by the IDB and Government of Honduras and the IDB will arrange their contract and payment.

Annex 7: Component 3 – Sustainable Rural Energization (ERUS)

PROBLEM STATEMENT

1. Limited access to sustainable energy services in rural areas, especially in indigenous and Afro-Honduran communities, affects the quality of life of the people and hinders a socioeconomic development in harmony with the environment. Moreover, the high level of inefficient and unsustainable firewood use to supply basic energy needs affects the health of women and children and the economy of the family. It also contributes to compromising the sustainability of forest resources.

2. The National Social Electrification Plan (PLANES) implemented by the ENEE Social Fund for Electricity Development (FOSODE) was designed and structured using comprehensive data from the rural areas of Honduras, which identified customer consumption patterns and the needs for electric service. Although the grid expansion model applied by FOSODE in line with PLANES is effective in extending coverage by conventional means, it has performed poorly in promoting implementation of decentralized options through PV systems or micro/small hydropower stations, which can be more efficient and profitable because they do not depend on consumption of fossil fuel.

3. Although the Government of Honduras has shown a clear political will to move ahead with development of programs to meet the energy needs of the rural sector, the following barriers have been identified which still need to be overcome:

4. **Institutional barriers.** The weakness of the institutional framework for the rural energy sector affects the quality and efficiency of efforts to develop rural electrification and expand the efficient use of firewood. The main problem in this area is that Honduras does not have an integrated rural energy policy.

5. For the electricity sub-sector, it is evident that, while FOSODE has the resources to implement grid extension projects selected by the PLANES methodology, other institutions such as SERNA, the Forest Conservation Institute (ICF) and the Honduran Social Investment Fund (FHIS), which use finance from international cooperation, are simultaneously —and sometimes uncoordinatedly— promoting some renewable energy projects even though they do not have a mandate for electrification. The fact that several organizations are promoting electrification programs simultaneously weakens the institutional framework and the incentives required to attract other participants, such as private investors, communities and NGOs.

6. In other cases, political-party processes negatively affect expansion of coverage by disregarding economic criteria, national priorities and national response plans.

7. **Technical barriers.** Although there are experiences in developing electrification programs and projects for isolated communities with renewable sources, a specific or detailed **sustainable model** of how to implement mass electrification with renewable options has yet to be designed. This is partly because the experiences of rural renewable energy projects have not been systematized and disseminated. What has existed is a proliferation of grid extension projects implemented by PLANES and, also, promotion of renewable energy with no planning or coordination between actors.

8. The situation is similar in the firewood sector, where there is no inter-institutional coordination of efforts to reduce consumption of firewood by distributing eco- or improved stoves to replace traditional stoves. There is then currently what is known as the *Death Valley Effect*, which prevents scaling up to a sustainable mass rural energization program, with renewable and low-carbon options.

9. Other technical obstacles to the development of rural energy programs relate to:

- The complex logistics required to reach very remote localities, especially in areas of indigenous peoples in *La Moskitia* and the difficulty of serving dispersed populations.

- Lack of monitoring and tracking systems to guarantee the sustainability of RE systems.
- The technical capability of supporting organizations is insufficient for the challenge involved in rural energy projects.

10. **Financial barriers.** In electrification projects, the more remote and dispersed the community, the more difficult and costly is extending access. These isolated communities are generally the poorest with many unmet basic needs, surviving on subsistence agriculture; consequently, they have a low income and may require substantial subsidies.

11. The Government's policy has been to finance grid extension for rural communities, and resources for decentralized electrification solutions have been very limited. Grid connection is not a viable option due to technical or economic restrictions associated with their geographical location. The case is the same with the development of mass programs for the provision of improved stoves, where the lack of financial resources has also been a constraint. Other financial barriers are:

- Limited or no funding for pre-investment activities such as pre-feasibility studies or analysis of electrification alternatives in isolated communities.
- High financial, commercial and other risks limit private participation in isolated systems.
- The high transaction costs needed to finance small hydropower projects make these projects unviable.
- Lack of adequate instruments to channel finance to users.
- The scarce financial resources of communities prevent development of individual projects.
- Lack of mechanisms to internalize the global benefits (from GHG emission reduction) in order to provide an incentive to develop energization programs using renewable energy; high transaction costs of carbon markets.
- Difficulty for implementing micro-finance mechanisms due to the high risks and transaction costs.

12. **Cultural barriers.** In some cases, the beneficiaries may reject the renewable energy based electrification technologies. Therefore in all electrification strategies with renewable energy, it is fundamental to provide training to the beneficiaries in the management, operation and maintenance of the systems and to raise awareness about their benefits. In this regard it is important to guarantee the participation of women in the training sessions so that they can take part in all the management and decision-making processes. This would help to overcome the resistance to the use of renewable energy. It will be important to establish a good level of communication with the communities, in order to understand their particular needs, energy roles, and cultural patterns, so that energy technologies are socially acceptable.

13. Similarly, acceptance of improved stoves requires knowing the local cooking practices, providing adequate technological solutions, providing adequate awareness raising campaigns, and training the users in the use of the new technology. Lack of adoption occurs sometimes when there is a lack of awareness of the damage caused by traditional technologies (open stoves), and of the benefits of improved cookstoves.

PROPOSED CONTRIBUTION TO INITIATING TRANSFORMATION

14. This component will support preparatory activities and capacity building, technical studies on systematizing experiences of renewable energy projects for the rural sector, development of a sustainable model for the implementation of both decentralized electrification and distribution of improved stoves, and finally project implementation. The activities to be financed in this component include:

- Market research of RETs for rural electrification.
- Assessments of existing technological alternatives.

- Identification, analysis and transfer of experiences, especially South-South, to adapt and develop RETs in line with local conditions.
- Study financing mechanisms, including analysis of subsidies to finance investments and the opportunities offered by carbon markets.
- Identification of sites and analysis of electrification options (based on energy supply and demand) with RETs in isolated communities, by prioritizing the most cost-effective solutions. This analysis includes identifying possible benefits at multi-sectoral level (sustainable management of natural resources such as biomass and water; agricultural and livestock production; education and health), under a gender perspective and linking multi-sectoral strategic partners identified for the development of projects.
- Pre-feasibility and feasibility studies of RE projects for electrification of isolated communities.
- Certification of technologies and preparation of technical standards.
- Preparation of a proposal to strengthen the regulatory framework in order to improve the institutional framework for the development of rural energy projects, including local and national stakeholders.
- Build the capacity of institutions involved with the rural energy sector.
- Study on the impact of rural renewable energy projects with a gender perspective.
- Training, communication and promotion with a gender perspective on RET issues.
- Installation of renewable energy projects for isolated sustainable rural electrification.
- Distribution of improved stoves.
- Knowledge management activities.

IMPLEMENTATION READINESS

15. The National Social Electrification Plan (PLANES), developed by ENEE, has identified the extent of the current electricity coverage, in addition to the areas where the existing grid can be extended, and the areas the grid cannot reach for technical and economic reasons. PLANES gives guidelines for planning and supporting projects in remote areas of the grid. It covers the list of electrified and non-electrified communities, with their geographic coordinates; description of the existing grid, with its location and the technical characteristics of all its branches; socioeconomic data or indicators on the regions of the plan, and information on other development projects. Based on PLANES, a national electricity coverage map has been developed. The country also has solar and wind energy potential maps, and trained specialists with the expertise to make technical evaluations of potential water and biomass resources for a comprehensive analysis of the energy supply of the communities that have been studied.

16. The Government has an interest in harnessing the potential of RETs to supply energy, as evidenced by the implementation through the Honduran Social Investment Fund (FHIS), with international financial assistance, of electrification programs with solar and hydropower systems, and promotional campaigns on radio and television. The private sector has several marketing companies with extensive experience in developing projects, especially solar, along with micro-enterprises producing micro hydropower turbines and improved stoves, and specialized institutions in the microfinance sector. The country also has various NGOs with extensive local networks with capability and interest in accompanying RET projects initiatives for the rural sector in aspects of management and training, among others.

RATIONALE FOR SREP FINANCING

17. The objectives of this component focus on expanding access to energy through RE sources, thus obtaining low levels of carbon emissions. This results in more effective efforts to expand electricity coverage, which has a positive impact on the administration of the country's electricity system and produces common benefits from RE expansion.

18. This component has a direct link to promoting the productive use of energy, which will have a positive impact on economic development in a framework of social and environmental sustainability. The component also considers gender issues, as it is intended to encourage women's participation in decision-making and management of the systems. Women are also the greatest beneficiaries from distribution of improved stoves, and from the opportunities offered by energy to empower small businesses with a gender perspective (corner stores or small grocery stores, bakeries, tortilla sellers, etc.).

19. The SREP investment covers a critical gap in the development of renewable energy in the country, given the lack of sufficient financing from the public sector for these activities. The financing will require additional funds from the private sector, international cooperation partners and NGOs.

RESULTS INDICATORS

20. Table 29 shows the indicators for the ERUS component:

Table 29: Results Indicator for ERUS Component

Results	Indicator	Targets
Increase in access to electricity	Number of rural beneficiaries with new access to electricity (coming from renewable sources)	100,000 people
Reduction in expenses for energy services	Expenses for firewood purchase:	Reduction of 60% vis-à-vis the baseline
Increase in access to lower cost, lower emission energy technologies	New access to efficient cook stoves	50,000 additional cook stoves
Reduction of GHG emissions	Tons of CO_2e emissions avoided	TBD during project preparation

FINANCING PLAN (USD MILLION)

Table 30: Financing Plan for ERUS Component

Component 3: Sustainable Rural Energization (ERUS)	Private/local investors	SREP grants	MDB	NGOs	ICAs	GoH	Total
Project preparation		0.3					**0.3**
RE systems for isolated communities	6.0	6.0	6.0		4.0	2.0	**24.0**
Sustainable and efficient firewood use	2.0	2.0		1.0	2.0	0.5	**7.5**
Studies/technical design/consultancies		0.95			0.5	0.1	**1.55**
Capacity building		0.95			0.5		**1.45**
Sub-total	***8.0***	***10.2***	***6.0***	***1.0***	***7.0***	***2.6***	***34.8***

PREPARATION TIMETABLE

21. See Annex 8.

REQUESTS FOR INVESTMENT PREPARATION FUNDING

22. The GoH is requesting a USD300,000 SREP grant for the preparation of this component.

Template for Project/Program Preparation Grant Request[64]

SREP PROGRAM **Project/Program Preparation Grant Request[65]**			
15. **Country/Region**:	Honduras / LAC	16. **CIF Project ID#**:	(Trustee will assign ID)
17. **Project Title:**	Component 3 – Sustainable Rural Energization (ERUS)		
18. **Tentative SREP Funding Request (in US million total) for Project[66] at the time of Investment Plan submission (concept stage):**:	*Grant:* US$ 10.1 M	*Loan:* N/A	
19. **Preparation Grant Request (in USD):**	US$ 300,000	*MDB:*IBRD	
20. **National Project Focal Point**:	Leonardo Matute		
21. **National Implementing Agency (project/program):**	Secretaría de Finanzas (Ministry of Finance)		
22. **MDB SREP Focal Point and Project/Program Task Team Leader (TTL)**:	*Headquarters-SREP Focal Point:*Gevorg Sargsyan	*TTL:* Xiaoping Wang - Christophe de Gouvello	

[64] To be annexed to the Investment Plan.

[65] A separate template needs to be presented for each project and program preparation grant request listed in the Investment Plan.

[66] Including the preparation grant request.

23. **Description of activities covered by the preparation grant:**

The preparation grant will cover:

Preparation of safeguard documents and manual of operations for the program, as normally required in WB operations.

Preparation of studies needed to inform program design. They include:

1. Studies on national and international experience in a) rural off-grid electrification, and b) efficient cookstoves deployment, to help design sustainable delivery models to be promoted and supported. The latter will include a study of supply and demand.
2. Study on enabling regulatory conditions needed to promote rural off-grid electrification and increased use of efficient cookstoves. This will also help inform the design of component 1, focused on regulatory framework.
3. Study on gender aspects relevant to the program interventions.
4. Survey/study of social acceptance of efficient cookstoves and RE technologies for rural off-grid electrification.

Workshops for consultation and discussion of results of the above mentioned studies, and consensus building on program design, business models and implementation arrangements.

Another key activity to be undertaken during the preparation phase is the development of TORs and technical specifications for studies/equipment to be procured during both preparation (those mentioned above) and implementation phase of component 3 (rural off-grid electrification and efficient cookstoves) and related activities corresponding to component 1 (regulatory framework).

The funding required for the preparation of such TORs is expected to come from the unused portion of the $375,000 IP preparation grant.

In addition, and if necessary, training of government officers (or a consultant hired for this purpose) on WB procurement guidelines will be conducted to ensure adequate capacity for procurement activities during preparation and implementation phases.

Flexibility is expected in the final allocation of the funds of this preparation grant in case some of the costs initially expected to be covered by the previous IP preparation grant cannot be covered by those funds.

24. **Outputs:**

Deliverable	**Timeline**
Preparation of TORs for consulting services to be procured during preparation phase	3 months
Studies on national and international experience in both a) off-grid rural electrification, and b) efficient cookstoves deployment	6-8 months after TORs[67]
Study on enabling regulatory conditions (and related adjustments) needed to promote objectives of rural component	3 months after TORs
Study on relevant gender aspects	3 months after TORs
Survey/study of social acceptance of RE technologies for rural off-grid components.	4-6 months after TORs

[67] For all studies, this time is in addition to the time required to identify and select adequate experts.

Workshops for consultation and discussion of results of above mentioned, and consensus building on program design, business models and implementation arrangements.	2 months after completion of above mentioned studies (about 9-12 months from start)
Preparation of safeguards documents	2-3 months after workshops (12-15 months from start)
Preparation of Manual of Operations	2-3 months after workshops (12-15 months from start)
Preparation of TORs and technical specifications for consulting and non-consulting services, goods and works to be procured during implementation phase	2-3 months after workshops (12-15 months from start)
25. **Budget (indicative):**	
Expenditures[68]	**Amount (USD) -** estimates
Consultants	210,000 (additional funds required are expected to be covered with the unused portion of the IP preparation grant)
Equipment	To be covered with unused portion of IP preparation grant
Workshops/seminars	90,000
Travel/transportation	To be covered with unused portion of IP preparation grant
Others (admin costs/operational costs)	To be covered with unused portion of IP preparation grant
Contingencies (max. 10%)	To be covered with unused portion of IP preparation grant
Total Cost	**300,000**
Other contributions:	
• Government	20,000 (In-kind)
• MDB	
• Private Sector	
• Others (please specify)	
26. **Timeframe** (tentative) Submission of pre-appraisal document for SREP Sub-Committee Approval: 12-15 months Expected Board/MDB Management[69] approval date: 18-24 months	
27. **Other Partners involved in project design and implementation**[70]: National Technical SREP Team, local technical agencies, Small Renewable Energy Producer Association (AHPPER), and the various NGOs and International Cooperation Agencies working on rural off-grid electrification and efficient cookstoves mentioned in the IP.	
28. **If applicable, explanation for why the grant is MDB executed:**	
29. **Implementation Arrangements** (incl. procurement of goods and services)**:** Standard WB procurement guidelines will apply. A government officer (or a consultant hired for this purpose) will be trained on WB procurement guidelines to ensure adequate capacity and adherence to them.	

[68] These expenditure categories may be adjusted during project preparation according to emerging needs.

[69] In some cases activities will not require MDB Board approval

[70] Other local, national and international partners expected to be involved in design and implementation of the project.

Annex 8: MDB roles

1. The three Components of this Investment Plan will be executed in a collaborative manner by the Inter-American Development Bank (IDB) and by the World Bank Group (WBG) through the International Bank for Reconstruction and Development (IBRD) and the International Finance Corporation (IFC). Table 31 shows the proposed participation of the three institutions, based on their respective expertise. For operational purposes, the participation of the three MDBs will be carried out through four programs. Each program will address one or more components of the IP.

Table 31: MDB Roles for the Implementation of the Honduras SREP IP

Component	Subcomponent	IBRD	IFC	IDB public sector	IDB private sector
		(Program A)	(Program B)	(Program C)	(Program D)
Component 1. FOMPIER	Policy and inst. strengthening				
Component 2. ADERC	Generation projects				
	Transmission lines				
Component 3. ERUS	Rural electrification				
	Improved cookstoves				

Note: Shaded areas indicate components or subcomponents included in each MDB Program.

2. Table 32 shows the expected periods of time required for the preparation of the four programs (time between IP approval and program approval by the SREP Trust Fund Subcommittee).

Table 32: Expected Preparation Times for MDB Programs

IBRD	IFC	IDB public sector	IDB private sector
(Program A)	(Program B)	(Program C)	(Program D)
12 months	12 months	12 months	12 months

3. As shown on Table 31, three of the components or subcomponents (policy and institutional strengthening, the financing of generation projects, and the dissemination of improved cookstoves) will be executed jointly by two MDBs. In all these cases, the MDBs will seek to achieve the best allocation of resources in terms of building on each institution's strengths, learning from each other, minimizing transaction costs, and maximizing cost effectiveness.

4. This allocation of resources will be defined at component and program planning stage. For the moment, an indicative, preliminary resource allocation table is provided (see Table 33).

Table 33: Indicative, Preliminary Allocation of SREP Resources among MDBs (USD Million)

Component	IBRD	IFC	IDB public sector	IDB private sector	Total SREP Resources
	(Program A)	(Program B)	(Program C)	(Program D)	
General preparation and operation expenses					
IP Preparation grant			0.375		0.375
Operation expenses for investment implementation	0.513		0.512		1.025
Sub-total	*0.513*		*0.887*		*1.400*
Component 1: Strengthening the RE Policy and Regulatory Framework (FOMPIER)					
RE Policy	0.150		0.150		0.300
Law & Regulations	0.150		0.150		0.300
Energy Control Standards	0.150		0.150		0.300
Capacity Building	0.400		0.400		0.800
Sub-total	*0.850*		*0.850*		*1.700*
Component 2: Grid-Connected RE Development Support (ADERC)					
Component preparation				0.300	0.300
Risk Capital Fund		5.000		5.000	10.000
Access infrastructure to RE potential			4.000		4.000
Studies/consultancies		0.600		0.600	1.200
Capacity building		0.600		0.600	1.200
Sub-total		*6.200*	*4.000*	*6.500*	*16.700*
Component 3: Sustainable Rural Energization (ERUS)					
Component preparation	0.300				0.300
RE systems for isolated communities	6.000				6.000
Sustainable and efficient firewood use	1.000			1	2.000
Studies/technical designs/consultancies	0.712			0.238	0.950
Capacity building	0.713			0.237	0.950
Sub-total	*8.725*		*0*	*1.475*	*10.200*
Grand Total	***10.088***	***6.200***	***5.737***	***7.975***	***30.000***

SCALING UP RENEWABLE ENERGY PROGRAM IN LOW-INCOME COUNTRIES[71]

MDB Request for Payment of Implementation Services Costs

1. **Country/Region**:	Honduras / LAC	2. **CIF Project ID#**:	(Trustee will assign ID)
3. **Project Title:**	"Program A": Component 1-FOMPIER and Component 3-ERUS (IBRD)		
4. **Request for project funding (USDmill.)**[72]**:**	*At time of country program submission (tentative):* US$ 10.1 M	*At time of project approval:*	
5. **Estimated costs for MDB project implementation services (USDmill.)**[73]**:**	*Initial estimate - at time of Country program submission:* US$ 428,000 *Final estimate - at time of project approval:*	*MDB:* IBRD *Date:* October 10, 2011	
6. **Request for payment of MDB Implementation Services Costs (USD.mill.):**	X First tranche: US$ 214,000 ☐ Second tranche:		
7. **Project/program financing category:**	a - Investment financing - additional to ongoing MDB project ☐ b- Investment financing - blended with proposed MDB project X c - Investment financing - stand-alone ☐ d - Capacity building - stand alone ☐		
8. **Expected project duration** (no. of years):	5 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:*		
10. **Justification for proposed stand-alone financing in cases of above 6 c or d**[74]**:**			

[71] Pick one program and delete others that are not applicable.

[72] Including the preparation grant request

[73] If the final MDB cost estimate exceeds the relevant benchmark, it needs to be supported by (i) a breakdown of costs of inputs required (staff/consultant time, travel, number of missions, etc) and (ii) by an explanation of the particular aspects of project design and implementation that drive MDB costs to exceed the benchmark (Item 9 in template).

[74] The justification should include an explanation of (i) why no linkages to ongoing or planned MDB financing have been possible or pursued, and (ii) the expected effectiveness of the proposed stand-alone SCF project in addressing the objectives and priorities of the country investment plan/strategy; and a confirmation that the proposed project forms part of the MDB's agreed country assistance strategy.

SCALING UP RENEWABLE ENERGY PROGRAM IN LOW-INCOME COUNTRIES[75] **MDB Request for Payment of Implementation Services Costs**			
11. **Country/Region**:	Honduras	12. **CIF Project ID#**:	(Trustee will assign ID)
13. **Project Title:**	"Program C": Component 1-FOMPIER and Component 2-ADERC (IDB public sector)		
14. **Request for project funding (USD mill.)[76]:**	*At time of country program submission (tentative):* USD 5.362 million	*At time of project approval:*	
15. **Estimated costs for MDB project implementation services (USD mill.)[77]:**	*Initial estimate - at time of Country program submission:* USD 500,000 *Final estimate - at time of project approval:*	*MDB: IDB* *Date: October 10, 2011*	
16. **Request for payment of MDB Implementation Services Costs (USD.mill.):**	☑ First tranche: USD 250,000 ☐ Second tranche:		
17. **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 ☐		
18. **Expected project duration** (no. of years):	5 years		
19. **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:*		
20. **Justification for proposed stand-alone financing in cases of above 6 c or d[78]:**			

[75] Pick one program and delete others that are not applicable.

[76] Including the preparation grant request

[77] If the final MDB cost estimate exceeds the relevant benchmark, it needs to be supported by (i) a breakdown of costs of inputs required (staff/consultant time, travel, number of missions, etc) and (ii) by an explanation of the particular aspects of project design and implementation that drive MDB costs to exceed the benchmark (Item 9 in template).

[78] The justification should include an explanation of (i) why no linkages to ongoing or planned MDB financing have been possible or pursued, and (ii) the expected effectiveness of the proposed stand-alone SCF project in addressing the objectives and priorities of the country investment plan/strategy; and a confirmation that the proposed project forms part of the MDB's agreed country assistance strategy.

SCALING UP RENEWABLE ENERGY PROGRAM IN LOW-INCOME COUNTRIES[79]

MDB Request for Payment of Implementation Services Costs

21. **Country/Region**:	Honduras	22. **CIF Project ID#**:	(Trustee will assign ID)
23. **Project Title:**	"Program D": Component 2-ADERC and Component 3- ERUS (IDB Private Sector)		
24. **Request for project funding (USD mill.)**[80]**:**	*At time of country program submission (tentative):* USD 7.975 million	*At time of project approval:*	
25. **Estimated costs for MDB project implementation services (USD mill.)**[81]**:**	*Initial estimate - at time of Country program submission:* USD 442,000 *Final estimate - at time of project approval:*	*MDB: IDB* *Date: October 10, 2011*	
26. **Request for payment of MDB Implementation Services Costs (USD.mill.):**	☑ First tranche: USD 221,000 ☐ Second tranche:		
27. **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 ☐		
28. **Expected project duration** (no. of years):	5 years		
29. **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:*		
30. **Justification for proposed stand-alone financing in cases of above 6 c or d**[82]**:**			

[79] Pick one program and delete others that are not applicable.

[80] Including the preparation grant request

[81] If the final MDB cost estimate exceeds the relevant benchmark, it needs to be supported by (i) a breakdown of costs of inputs required (staff/consultant time, travel, number of missions, etc) and (ii) by an explanation of the particular aspects of project design and implementation that drive MDB costs to exceed the benchmark (Item 9 in template).

[82] The justification should include an explanation of (i) why no linkages to ongoing or planned MDB financing have been possible or pursued, and (ii) the expected effectiveness of the proposed stand-alone SCF project in addressing the objectives and priorities of the country investment plan/strategy; and a confirmation that the proposed project forms part of the MDB's agreed country assistance strategy.

Annex 9: Ministry of Finance (SEFIN) and Other Agencies

5. The Ministry of Finance (SEFIN) was established through Legislative Decree No.146-86, which was modified by Decree 218-96. According to the law its main purpose is to promote conditions that are favorable for national development, and seek to balance such actions with the rights and interests of individuals on the basis of social justice.

6. The *vision* of SEFIN is to consolidate its leadership through the innovative and effective management of public finances, within a framework of legality, justice and honesty that achieves a fair and transparent government, thereby encouraging sustainable development for all and each of the regions and municipalities of the Republic.

7. Its *mission* is to ensure the effective and honest procurement, administration and application of resources in a framework of legality and justice, with the participation and knowledge of society, in order to make viable the Government's programs for sustainable development of the state.

8. Its *objective* is to optimize the management of public finances within a framework of legality and justice to promote sustainable development of the country. It is to ensure sound, clear and transparent public finances, optimize decision making for efficient management of public finances, and improve the quality of service to the public.

9. In order to achieve the above mentioned goals SEFIN has been divided into different under-secretariats, directorates, units, departments, etc. to ensure a more efficient and effective performance. SEFIN is divided in two Under-Secretariats 1) the Finance and Budget office and 2) Credit and Public Investment, since the institution exercises mainly the steering system of the public sector financial management including the Public Credit Budget, Treasury and accounting subsystems as well as the mechanisms and elements of internal control system incorporated therein.

10. The following entities under SEFIN will contribute to the execution of the SREP Program:

THE PUBLIC CREDIT SUBSYSTEM

11. Within the Credit and Public Investment Under- secretariat operates the **General Directorate of Public Credit (DGCP),** the General Directorate of Public Investment (DGIP) and the General Directorate of Decentralized Institutions (DGID). The DGCP is an entity in charge of managing internal and external financial resources according to the state's capacity to acquire debt for productive investments or to address other issues of national interest.

12. The Organic Budget Law (Decree 83-2004) states the directorate's main purpose as well as its powers. According to article 64 of this law the DGCP is responsible for operations originating from: 1) short-term instruments to meet seasonal cash shortfalls due within the fiscal year, 2) loans from domestic or foreign institutions, multilateral organisms and other governments, 3) payments for works, projects and services that extend for more than one year, 4) the issuance and placement of medium and long term securities and 5) provision of guarantees, sureties and bonds duly approved and authorized in advance by SEFIN also covers derivative contracts and other contingent liabilities.

13. Article 73 of the Budget Organic Law states that negotiation of loans from the Public Sector corresponds to the Ministry of State for Finance, through the General Directorate of Public Credit.

14. Article 82 provides the DGCP the following functions: 1) To propose the financial criteria for the formulation of the Public Debt Policy in accordance with guidelines determined by the Commission of Public Credit, 2) organize an information system about the capital market, 3) coordinate funding proposals received from the Public Sector, 4) Process authorized requests to initiate public credit operations, 5) Standardize the procedures for issuing, placing and redemption of securities, bonds or public debt obligations, as well as negotiating, contracting and repayment of loans, of the Public Sector,

6) Lead the negotiation process of the public debt, support and guide entities involved in the process; 7) Supervise the funding obtained through public credit transactions that they are being applied for its specific purposes; 8) Maintain a record and updated control over public debt, properly integrated in the government accounting system, allowing it to require information from public sector entities; 9) Establish budget projections of public debt service, coordinating as appropriate with the General Directorate of Budget and the Treasury of the Republic (TGR), and 10) the other powers conferred by this Act and its regulations and established the Executive.

15. The General Directorate of Public Credit is organized in Front, Middle and Back Office according to the Best International Practices for Debt Management Offices. Each department has specific functions, some of them listed below:

- The Negotiation of External Financing Department is responsible of the formalization of loan agreements, donations and other external resources related contracts as stipulated in the National Legislation.
- The Monitoring of External Financing Department is responsible of the supervision of the financial execution of projects in compliance of the disbursement schedule, making recommendations on corrective actions required for the execution.
- The Securities Management Office is responsible for the issuance and placement of governmental securities in the domestic and foreign market, as well as for the negotiation and monitoring of trust funds, agrarian debt and agency loans.
- The Strategy and Risk Assessment Department makes analysis that contribute to the formulation of the Public Debt Strategy and Public Debt Policy, determining the Government´s internal and external levels of indebtedness, public debt risk levels and the minimum acceptable grant element for external funding loans, among others.
- The Operations Department is responsible of the payment of the debt service, the registration in the Integrated Financial Management System (SIAFI) and the Debt Management System (SIGADE) of daily public financing transactions, such as new loan agreements, modifications to existing agreements, disbursements, debt service, etc., in order to keep the databases up to date with reliable and exact information.
- The Quality Control Department verifies controls and corrects discrepancies in the registry of public financing transactions previously entered into the database by the Operations Department.

ECONOMIC AND FINANCIAL MANAGEMENT FOR CLIMATE CHANGE UNIT

16. On July 19, 2011 Decree PCM-048-2011 came into force which sets up the Unit for the Mobilization of Economic and Financial Resources for Climate Change (UGEFCC), attached to the General Directorate of Public Credit, in SEFIN.

17. UGEFCC will provide support for fund management to various funds or cooperation organizations for financing and implementing programs and/or projects to meet the challenges of climate change and will use the experience and capability of all departments of the Ministry of Finance to achieve the institutional objective and the good exercise of their functions.

GENERAL DIRECTORATE OF PUBLIC INVESTMENT

18. The National Public Investment System provides a broad and strong legal support in various laws, rules and guidelines. Starting with the reform of the General Law of Public Administration in Legislative Decree No. 218-96, this states that the Ministry of Finance, since January 1, 1997 assumes the duties

regarding investment programming, which conceptually and operatively is related to the functions of the National Public Investment System,.

19. For its part, the Organic Law Of the Budget, according to Legislative Decree No.83-04, Title III, Chapter II, Organization and Competition, Article No.58, assigns the Public Investment Office as the Technical Coordinator of the Public Investment Program and establishes as well, the Conceptual Framework of the Public Investment, organization and abilities, conferring the following mandates:

- To issue standards and guidelines for public investment program and project development.
- Update the Integrated Public Investment Project Bank (BIP) with the information provided by the executing units.
- Evaluate programs and public investment projects formulated by the institutions, before its incorporation in the Multiannual Program of Public Investment.
- Develop Multiannual Program of Public Investment and update it.
- Validate, at the request of the General Budget Office, the annual public investment programs contained in the Annual Operational Plans of the institutions for its incorporation in the budget for fiscal year.
- Advise the Ministries and other Public Sector institutions on methods and basic criteria for the identification and formulation of programs and public investment projects.
- Follow up the physical execution of the Annual Program of Public Investment in the relevant period.

20. The Organic Law of the Budget includes the Technical Rules of Public Investment, established in Ministerial Agreement No. 0321 of March 2006, which may be updated and constitute the institutional and technical framework of the National Public Investment System, defining the guidelines, tools and manuals that Public Institutions should follow and their roles and responsibilities in matter of public investment.

21. To carry out monitoring of the investment budget, the Public Investment Office has Dispositions related to the Public Investment, which can be found in the General Dispositions of the Budget of the relevant period.

PROJECT MANAGEMENT UNIT (UAP)

22. The UAP was created through Executive Agreement No. 0271 on April 29, 2004, in an effort to streamline human resources and material management and projects execution assigned to SEFIN, externally funded, whether they are investment loans, sector programs or grants.

23. Its main purpose is to implement a single central system to monitor programs and international cooperation projects that are being implemented by SEFIN, in order to optimize human, material and financial resources to achieve greater efficiency and effectiveness in their development, in accordance with the commitments established in the agreements signed with International Cooperation Agencies in order to replicate the good practices in other Ministries.

24. Specific objectives of UAP are:
   a) Increase the level of physical and financial execution of projects.
   b) To ensure transparency in the use and management of financial resources.
   c) Strengthen SEFIN's institutional capacity, and unify technical, administrative and financial processes aspects of externally funded projects.

25. The General Coordination of the UAP will be responsible for the management of the UAP and ensure the rational use of the technical, material and financial resources assigned to the projects. It is responsible for coordinating and monitoring the bidding process and award of goods and services of the

projects under its responsibility. Support the project coordinators in the development of the logical framework. Also present periodical reports to higher authorities of the Secretary of State of SEFIN, Technical Steering Committee (CDT) and International Cooperation Agencies concerned.

26. UAP has an administrative, financial and accounting area whose function is to coordinate, regulate and undertake the financial and accounting management of the programs and projects assigned to the UAP to guarantee its transparent use, incorporating a unique accounting-financial system. Also, the UAP has a Project Monitoring and Evaluation area whose main functions are the coordination and standardize monitoring and evaluation of technical and financial execution of the programs and projects, through the implementation of a single computer system based on the logical framework of each project.

Annex 10: Independent Quality Review

HONDURAS SREP INVESTMENT PLAN - EVALUATION BY INDEPENDENT REVIEWER OSCAR COTO – MATRIX OF COMMENTS AND RESPONSES

The matrix below presents the comments from Dr. Oscar Coto, following his review of the Honduras SREP Investment Plan, submitted to him on September 27, 2011. It also presents the responses offered by the Honduran SREP Technical Team, with clarifications as well as indication of adjustments made to the plan to address —where relevant— these observations.

Comments	Responses
Part I: General Criteria	
The Honduras SREP Investment Plan (IP) is written based on a thorough description of the current context situation both of the country and the energy sector, paying attention to describing both the grid connected and off grid rural contexts (regulatory and status of project development); also including a brief description of the rural energy for cooking situation, as well as including the description of the renewable energy endowment of the country. The proposed plan is also situated within the framework of aspirations of the country as related to the *Ley de Visión de País* and the *Plan de Nación*, both of which include specific aspirations for the inclusion and scaling up of the participation of renewable energies (RE) as well as to the improvement of access to energy services by the country´s population.	Agreed. Thank you.
The plan is also based on a discussion of perceived barriers that are restricting the current efforts related to the scaling up and mainstreaming of RE within grid and off-grid connected electricity. The proposed IP intents to include a set of diverse activities from a programmatic perspective by defining three (3) areas of involvement for SREP: (i) a series of activities aimed at improving the normative and regulatory framework in support of RE, (ii) a program for supporting the development of grid connected RE projects named PAPERC [now called ADERC] (which includes the development of financial mechanisms for project finance and the leveraging of monetary resources required to increase the transmission capacity required to evacuate RE into the grid), and (iii) a program for rural energy service provision based on development of RE linked to productive uses of energy, which is also inclusive of a component for improved cooking stoves dissemination in rural communities.	Agreed. Thank you.
According to the evaluation criteria for the technical review, the proposed Investment Plan:	
a. Complies with principles, objectives and criteria of SREP?	

The IP complies with the principles, objectives and criteria of the SREP program as specified in the DESIGN DOCUMENT FOR THE PROGRAM ON SCALING-UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES (SREP), A TARGETED PROGRAM UNDER THE STRATEGIC CLIMATE FUND. There is a link established in the IP on the complementarities of SREP funds to already on-going efforts, especially on the side of grid connected RE project development; although less clear for the third component of the proposed program.	Agreed. Thank you.
b. Takes into account in-country capacity to implement the plan?	
The IP clearly supports the aspirations of the country and the willingness to make every effort possible to properly implement the IP. An issue to be noted is that the proposed investment plan does not include any resources from the Government of Honduras except for operations expenses for investment preparation during 5 years. Such level of contribution is not discussed in the context of the overall disbursement plan and is not properly justified as adequate for the level of engagement required in order to move the IP into action.	Thanks. Indeed, the contribution of the Government of Honduras —which is significant— had not been made explicit. We have now incorporated part of it in the financial plan. We have included in component 2 (grid-connected generation) an estimation of the value of fiscal support offered by the government to RE, in the form of tax exemptions, tariff premiums and other incentives. In addition, we have added an estimation of the cost of the staff time (only for staff working directly in the projects) contributed by the government for the preparation, implementation and supervision of these projects. Through these contributions, the government provides 7.4% of the total IP funding. The government further contributes through other existing, complementary programs, promoting rural electrification, for example (we have not estimated the value of the contribution, though). Finally, we should note and remind that the financing provided by the MDBs in the form of loans must be repaid, therefore making the government of Honduras bear the cost of it (which should then also be considered its own contribution; if so, the government's contribution to the IP is 57%).
Moreover the IP is not requesting any SREP resources for investment preparation as per each program component detailed description in the relevant annexes 5, 6 and 7.	Agreed. Preparation resources had been planned, but not explicitly included in the Financial Plan. We have now included them explicitly. Moreover, MDBs are also filing their MPIS request, to help cover project preparation costs on their side.
c. Has been developed on sound technical basis?	
The IP seems to have been developed based on sound background and context information as well as by having assessed perceived barriers for the deployment of RE in the country in both target areas of the program. The context discussion lacks the inclusion of important areas such as the grid off take capacity for RE technologies as well as a discussion on the banking and financing sectors as they relate to important components of the proposed IP.	Thanks. We have added additional analysis of the banking and financial sector. Regarding off-take capacity of the grid, clear lack of transmission lines has been identify s a barrier. These issues will also be further studied in the preparation phase.
d. Demonstrates how will initiate transformative impact?	

The IP assumes rather than demonstrates how it will initiate transformative impact. This is especially true in the case of the component related to RE for sustainable rural energy service provision, where there is little clarity on the plan on issues related to targets and identification of key actions to enact movement (taking into account that it is solely dependent on SREP funds as well as ICAs, with no government counterparts).	Transformative impact is expected to be achieved by addressing related market failures. The program will aim to overcome information gaps (what are adequate technologies for each community, market volume and demand, regulations needed, among other) and help design a model —using international experience— that can be sustainable given local conditions. This will be reflected in main text (see main body, paragraphs. 125-127).
On the RE for grid connected component, the IP assumes the participation and competitiveness of the proposed financial arrangements to be developed, as well as the myriad of institutions and organizations involved, but there is little discussion and justification on the appropriateness of the implementation arrangements.	The ADERC Component, which is primarily aimed at improving the finance market for RE in Honduras, is based on an assessment of the country-specific barriers for the RE market in Honduras, especially those cited by banking institutions and RE industrial associations. Its financial interventions rest on principles of financing in which equity takes a higher risk position and allows the entry of debt financing. In response to barriers cited, it is also focused on building capacity of sponsors, and banks and provision of technical assistance in the form of studies. On a more conceptual level it can be summarized as addressing the barriers of cost and risk for early entrants into the RE market in Honduras. Please see enhanced discussion in the proposal for more discussion (see main body, paragraphs 109-117)
e. Provides for prioritization of investments, capture and dissemination of lessons learned, M&E and links to results framework?	
The IP assumes a prioritization of investments but lacks depth in supporting the proposed structure and how the selected one is relevant to create the transformative impact.	The proposal has been edited and restructured to make more evident the link between the analysis of context and barriers and the proposed interventions (and how they will achieve transformative impact).
The program results framework linked to M&E is very vague in most of the variables, where there is hardly any baseline and target information; therefore making the assessment of how investments will be linked to results themselves. Links from the description of each component of the program and their associated targeted indicators to the overall project monitoring framework seem to be weak, and in many cases important indicators do not seem to be carried into the overall monitoring and evaluation structure.	Agreed. The Results Framework has been adjusted to make the links with specific targets for each component more evident. Some of the indicators (originally adopted from those proposed by the SREP M&E Guideline document) have been adapted to make them more relevant to this proposal's content.
As per capture and dissemination of lessons learned the IP is not very clear (table 18 refers to lessons learned amongst countries, which does not seem to be applicable as well as referring to a PAAFRE program which is not defined anywhere).	Agreed. We have not defined at this point dissemination activities of lessons learned among other countries. We have however included knowledge management activities in each component. Further planning for this will be done at the project preparation phase.
f. Proposed with sufficient stakeholder consultation?	

The existence of an SREP in-country steering committee assures high level participation of key stakeholders during the formulation of the plan, and hopefully into the implementation of the plan. It is stated that during both the scoping and joint mission, interviews were conducted with relevant stakeholders in the country. Although the plan states in Annex 2 that there will public consultations to the plan, it is not clear if the web based consultation will happen after submission for final approval by SREP and how relevant inputs will be taken into account in due process.	Additional details on the public consultation process were added to Annex 2 to respond to this point.
g. Addresses social and environmental issues, including gender?	
Important aspects related to social and environmental issues seem not to be adequately discussed in the IP; for example the issue of acceptance of hydro electric development and its relation to local consultation processes may merit further discussion (especially in a country like Honduras with a weak current political situation and climate for stakeholder discussions and convergences).	Additional discussion of these issues and related activities has been added in paragraph 93 of the main body and in table 25. Communication, consultation and education activities will be included under component 2 to address this point. Also, although it is not mentioned in the proposal, safeguard policies —as a regular procedure and standard in MDBs programs— are always applied and monitored during MDB project preparation and supervision.
Another aspect that seems not to be addressed relates to the issue of RE technology acceptance considerations given in the formulation of relevant activities in the rural off-grid component of the plan (also related to the issue of improved cook stoves).	OK. We have included in paragraphs 99 of the main body and 12 of annex 3 the requirement that the RE technologies to be implemented be socially acceptable. Related activities will be detailed at the project preparation phase.
Although the IP mentions the importance of gender components, the issue is only linked to the monitoring of access to energy services by rural men/women; whereas there is ample experience in the energy-gender community that better and improve indicators need to be integrated into the plan.	Agreed. Gender-related indicators have been incorporated (along with a gender study, to supplement other previously included activities). More indicators will be considered for inclusion during project preparation, when more detailed analysis can be done in regards to the feasibility of properly monitor and report of some of them.
h. Supports new investments or funding additional to on-going/planned MDB investments?	
The IP considers involvement of MDB´s only in the component related to the program for supporting the development of grid connected RE projects. There is no description within the IP on the on-going/planned investments by MDB´s, therefore it is not possible to conclude on how the proposed plan supports new investments from MDB´s.	Agreed. This was due to the fact that additional discussions were still needed to define precise funding to be allocated for the program. An estimate of $6M for MDB contributions under component 3 has been added.

i. Accounts for institutional arrangements and coordination?	
The IP describes the structure of the Secretariat of Finance and its associated administrative offices including the denominated UGEFCC and the UAP. It also mentions that an SREP Executive Committee has been established by Decree (including public and private sector participants).The IP falls short in describing the actual arrangement for executing coordination amongst the myriad of stakeholders involved in a multi dimensional activity such as the one proposed, and the capacity of the proposed key organizational elements is assumed rather than discussed from the perspective of the implementation of the SREP supported program.	The GoH has already taken a series of measures to set-up an organizational institutional framework for the preparation and implementation of the SREP program, including a) the creation of both a Steering Committee and a National Technical Team for SREP and b) consultations with stakeholders from private sector and NGOs. Additional detail is provided in section "Implementation Readiness" of Annex 5. Further coordination mechanisms for each specific program will be detailed during the preparation phase.
j. Promotes poverty alleviation?	
The IP addresses poverty alleviation aspects for both components of the plan. At the grid connected level, it presupposes that the IP will contribute to RE related PYMES development, and at the rural development level there will be increased fluxes of resources for poverty reduction related infrastructures, although those are not clearly demonstrated within the plan.	Poverty alleviation expected outcomes are addressed in paragraphs 117 and 127 of the main body. More specific details will be developed during the preparation phase.
k. Considers cost effectiveness of investments?	
Except for the discussion on the PAPERC [now called ADERC] component of the IP (which is based on the on-going activities related to RE project development for grid connected in Honduras, which is likely to be responsive to cost effectiveness from small scale RE technologies as suppliers of electricity to the grid), there is no discussion on cost effectiveness of investments in the case of the rural off-grid component of the IP.	Agreed. The analysis of cost-effectiveness technologies for the off-grid component has not yet been done, because such determination will vary from community to community, depending on their resource endowment. Such community-specific analyses —which go beyond the possibilities of this IP development process phase— is indeed one of the studies planned to properly inform technology selection. This is explained in paragraph 14 of Annex 7.
An important issue that is not discussed is how the provision of concessional financing to project developers can contribute to lower the long term financing costs of project financing after the execution of the proposed plan, especially when MDB support is not a long term guarantee for scaling up and the local/international financing communities will need to fill in the financing needs required for scaling up (and taking into account the effect of country risk ratings).	We have clarified the discussion on lowering long-term financing costs; please see document. The transformative strategy of ADERC does not aim to lower country risk. However (1) the heavy participation of domestic banks in the program we believe lowers sensitivity to country risk (and political risk of PPAs) as it is not one of the main elements of concern that they report being most concerned about, as domestic banks are better suited than international financiers to bear country risk, and (2) the program is precisely designed to reduce the risk of the RE sector and increase its capacity, thereby making it more commercially viable and less dependent on public support.
Part II: Compliance with the investment criteria or business model of the relevant program	
According to the evaluation criteria for the technical review, the proposed Investment Plan:	

a. Catalyses increased investments in renewable energy in total investment?	
Current investment baselines for either component 2 and 3 of the IP are not discussed in the document, therefore making difficult to assess if SREP funds will sustain the attraction of other levels of financing and lead to replication. In the on-grid case, it is known that 49 projects have standing PPAs and are seeking financing, but no information apart from the discussion of the perceived barriers is submitted on the baseline of current success in financing terms.	Baseline information for investment in small-hydro generation has been included in the results framework table. It is thereby showed that the program aims to double in a few years the capacity that has been historically developed in the country. It also offers a baseline for estimated annual investment in small hydro, and aims to more than double it. More detailed baselines will be developed during the preparation of this component.
It will be very important to discuss the depth of the local banking community as well as the existing equity capacity in leveraging the proposed MDB financial package in order to properly assess the catalytic role of the SREP funding.	Discussions were held with investors and banks to confirm their willingness and availability for these investments, in the pilot phase. Such discussions have informed the expected contributions from them presented in the financial plan (and the resulting expected leverage). It is expected that such leverage will increase after the pilot investments as a result of the capacity building contributions and demonstration effect of the program.
At the level of the off-grid component of the IP, there is no indication on how the ICAs and private developers contributions will create the sustain investment required for scaling up such component.	Precisely, one of the objectives of the program is to study local conditions and international experience and develop a suitable commercially sustainable model (we don't pre-assume one, but will aim to design an adequate one).
Since the IP does not call for the attraction of any government financing, perhaps it is necessary to discuss how different scaling up risks will be managed through the implementation of the program, especially since the existing model is that of a single electricity buyer in the market.	The launch of SIEPAC (Central American Interconnected Electricity System) helps mitigate the single buyer risk. Other scale-up issues (like ensuring adequate transmission capacity) are discussed in other parts of the proposal.
b. Creates an enabling environment?	
The IP states the commitment of the country for promoting RE and energy access goals. The creation of an enabling environment is mostly dealt with in the normative and regulatory component of the IP. Several types of activities are envisioned as necessary, mostly all of them related to the on grid component of the program; leaving-off a sense of consideration for the creation of enabling environments for off-grid catalytic action.	Agreed. Considerations for the need of regulatory work to enable for off-grid RE generation have been added (paragraphs 123 of the main body and 14 of Annex 7). A detailed diagnosis will be undertaken as one of the project activities to identify adjustments should be designed and implemented in the current regulatory and legal framework of the power sector to ensure legal space and regulatory provisions for new business models for RE-based decentralized rural electrification (and other energies) to be implemented with private sector participation.
One issue to take notice is that the IP calls for the enacting of organizational transformations at the institutional level (ENEE and other institutions), but lacks the commitment on how those if required are going to be financed and implemented.	Agreed. Details on financing and implementation for institutional adjustments will be determined and provided in the preparation phase. This said, the government —through its active participation in this program, the creation of a Steering Committee and Technical Team and the goals set in the Country Plan (*Plan de País*) and other documents— has shown its strong commitment to pursue the objectives of SREP and invest, implement and effect change accordingly.

c. Increases energy access?	
It is anticipated that component 3 of the IP is clearly link to indicators of increased energy access, although the IP lacks to establish clear targets for its contribution and how that will modify the existing baseline.	As presented in paragraph 133 of the main body —and in the results framework—, there is a national target of increasing access to electricity from current 81.5% to 85% by 2015. As detailed in the same paragraph —and in an additional indicator included—, SREP is expected to contribute to such target by expanding power coverage to an additional 100,000 people in rural areas (approximately 1% of the population).
Component 2 of the IP assumes a contribution to increase energy access and proposes to monitor it, but in reality the PAPERC [now called ADERC] component description only deals with financing availability for project development and collateral financing for transmission for the off-take of RE capacity, being silent on the issue of mobilization of grid extension and distribution interconnection programs and fees.	Energy access is not a main goal of component 2, but rather a co-benefit for certain communities close to the distribution lines of the power plants.
d. Implementing capacities?	
The IP describes in different sections and at different depths the implementation capacity, perhaps it will be useful to have a more coherent and succinct description on the organizational mode, roles and responsibilities, and expected decision making interactions. The planned implementation approach including relevant offices at the Secretariat of Finance and the existence of an in-country SREP Steering Committee legally sanctioned by decree contributes to foster an enabling environment for stakeholder participation.	A high level coordination mechanism already exists. Text in relevant section (Implementation Readiness section in Annex 5 and Annex 9) has been enhanced to better explain. Program-specific coordination mechanisms will be established in the project preparation phase.
e. Improves the long term economic viability of the renewable energy sector?	
For the on grid RE, long term viability is related to how sound energy markets are created and how private power producers act within the enabling policy, regulatory and financing environment. The on-going single electricity buyer market model as well as the bidding procedures assures the environment for the targeted 49 projects with a 250+ MW capacity, but longer term viability of the sector merits a discussion in the IP on how sustainable is it to continue once the MDB lending program is achieved.	As discussed in the proposal, ADERC is targeted primarily at strengthening the financial and technical capacity aspects of the private producer energy market in Honduras, building on the policy framework of the single-electricity-buyer model currently in existence, and government-backed PPAs, as well as supportive policies achieved so far and discussed elsewhere in the proposal. ADERC seeks to lower risk in the financing market as well as catalyze technical capacity, as described in the enhanced IP ADERC section.
As per component 3 related to off grid energy service provision, further discussion may be needed on the issue of long term viability with an scenario of diminishing foreign aid and no commitments from the central government to foster public-private partnerships envisaged.	Please see above response to point d, Part 1, on goal of developing a sustainable model.

f. Transformative impact?	
The proposed IP considers transformative impacts in several dimensions mostly related to national scale outcomes of mobilization of key stakeholders in both components, with consideration given to the delivery of SREP aims and objectives. The transformative impact of the IP is more clearly addressed on the side of the grid connected component of the plan, where there is a model and an approach more clearly established and directly linked to the continuation of the single buyer model and promotion of access to financing by the MDBs in conjunction with the local banking community. The transformative impact discussion on the off-grid component of the program is not so well established in the proposed investment plan and merits further discussion.	Agreed. As mentioned before, as there are significant differences from community to community, a model of intervention that will ensure transformative impact will be community-specific and can only been properly designed once additional preparation work has been done. This will be accomplished during the project preparation phase.
There is an asymmetry of information related to the implementation timeline for the regulatory as well as for the off-grid component of the IP; since only the on grid connected implementation timeline is presented; creating a critical problem for the evaluation on transformative impacts.	Thanks. A timetable for project preparation and submission to the SREP Subcommittee for all components has been added. See Annex 8.
Part III: Recommendations	
The IP document was received with sections both written in Spanish and English, it is recommended that the text should be standardized to a one language.	Thanks. This has been done.
The IP´s Executive Summary will benefit with the inclusion of relevant information on the targeted program components, the overall proposed investment plan and the expected results framework (incorporating clearer baselines and targets of the program).	Thanks. The executive summary has been restructured and enhanced to include this.
With respect to social risks associated to the program, it is said that the mitigation activities will include training, promotional campaigns, socialization of stakeholder participations; it is recommended for the IP to call for the enactment of codes of conduct for the selection of beneficiary projects as well as the incorporation of criteria on social responsibility for project development.	Thanks. This has been discussed, and its inclusion will be considered in the project preparation phase.
The IP document includes a presentation of risk categories associated to the implementation of the program. The risk perceptions are not clearly supported and do not provide the reader with transparent valuation of the specific risks. With respect to environmental risks, it is stated that the strengthening of SINEIA will be a way of mitigating environmental risks, but no inclusion of such strengthening activities is included in the description of activities under any of the 3 program components submitted to SREP.	In the risk assessment matrix, in the environmental risk section, we have included the risk mitigation strategy to reduce the climate change impact risk. The technical assistance provided to the RE projects within ADERC will examine climate risks to energy infrastructure (market study), and will ensure best practices in hedging against these risks. For instance, it is anticipated that most of the projects supported will be hydro-based. Best practices in watershed maintenance will be supported with TA for these projects in order to increase resilience of the ecosystem services that provide hydrological feedstock to the hydro plants, thereby increasing their resiliency to climate changes. Details on the precise best practices will be considered during component development

With respect to financial risks, the IP assumes the depth of participation of the local banking community but does not provide confirming evidence of such participation so it is recommended to expand on such issues and mitigating actions in case the risk level increases due to general economic climate changes in the country.	In the risk assessment matrix, in the financial risk section, we have included additional analysis on financial risks. The strong component of local financing in ADERC should help hedge against the risk of losing international investment in case of mild economic or political turbulence. Local institutions are more familiar with the domestic economic and political situation and more able to take on such risk.
Taking into account the overall climate vulnerability of the country, it is suggested in this evaluation that the proponents should give consideration to climate vulnerability risks and how to mitigate those perceived risks if considered relevant.	The technical assistance provided to the RE projects within ADERC will examine climate risks to energy infrastructure (market study), and will ensure best practices in hedging against these risks. For instance, it is anticipated that most of the projects supported will be hydro-based. Best practices in watershed maintenance will be supported with TA for these projects in order to increase resilience of the ecosystem services that provide hydrological feedstock to the hydro plants, thereby increasing their resiliency to climate changes. Details on the precise best practices will be considered during component development
The IP could benefit from an improved description of the proposed structure for implementation of the program, description of specific roles and responsibilities of participating agencies and how leveraging of resource approaches are to be implemented. The existence of the Steering Committee for SREP implementation is mention in the text but is not only until an annex that there is full description of its membership, perhaps a description in the main text on the charter, membership, expected roles of the different players would contribute to enhance the implementation approach of the plan.	Membership of Steering Committee has been included in the main text, as suggested. A general explanation of the functions of various government agencies which will play a role in SREP is provided. More specific roles and responsibilities for implementation of each SREP project will be detailed in the projects documentation (normally under the implementation arrangements section) during the preparation phase.
Component 1 of the proposed IP does not discuss any enabling environment required for the scaling up of off-grid contributions from RE technologies and concentrates on the promotion of policies and institutions required for on-grid applications; issue that requires further discussion in the context and barrier identification sections of the document.	Please see above response to point b of Part II.
Both under the description of perceived risks as well as within Annex 5, there is mention to the need to support and enact organizational changes that are required for RE scaling up in the country, but there is no indicator in the monitoring framework linked to such an important endeavor.	At this point there wasn't enough detail of organizational changes to be enacted to properly develop a meaningful Indicator. This analysis will be done in further detail during project preparation phase for component 1, allowing the identification of adequate related targets and indicators to monitor performance on this area.

The poverty issue is an important issue to be acknowledged when discussing the implementation of innovative solutions for off-grid RE based energy service provision and as such should be discussed within the scope of component 3 of the off grid component of the IP; the IP could benefit from a more in depth discussion on the existing in-country lessons learned and model approaches to be used in the promotion and scaling up of this component (specially in public-private models for energy service provision in poor rural areas). The IP calls for the selection of appropriate and successful models in this component but it fails short from providing an ex-ante route map of the direction it intends to take (taking into account that the contributions and leverage only comes from the private sector and from ICAs).	The team agrees that a more in-depth analysis of in-country lessons learned will need to be done during the preparation phase, as will also be necessary to draw upon lessons from international experiences, to the extent that these experiences are relevant in the Honduras context.
A couple of issues seem to be needing further discussion and justification in the proposed plan with respect to component 2 related to on-grid connected RE technologies. The first one relates to the expressed need to use SREP resources for leveraging resources for extending transmission and distribution capacity for RE off-take by the utility, but no context information is provided in the IP on this subject making it very difficult to assess the logical framework for this intervention (understanding that the intended applications involve small scale renewable energy projects, the IP could benefit from a more detailed description on whether the intended approach will favor distributed/dispersed approaches for off-take or high voltage transmission line deployment).	As in many countries, the financing of the connection of RE projects to the transmission grid remains an unsolved problem as a kind of chicken-and-egg problem where the whole society needs the benefits of the RE-based projects and the these projects need the mutualization scheme for the investment needed to connect to a transmission grid which has not been designed to harvest efficiently the potential for RE-based generation. The project will contribute to solve that problem through component 1 and, in the short term provide the needed financing for building the necessary transmission lines to ensure that the energy generated by the proposed RE-projects can actually be used by customers; depending on the projects to be selected, either transmission or distribution grid related investment will be required.
The second issue relates to the perceived need for concessional and non-reimbursing capital in order to jumpstart catalytic financing for on-grid project development and complement risk profiles of the local banking community; this issue is assumed in the document but there is no presentation and discussion of the issue (taking into account that nearly 30% of the SREP funds are to be allocated to the investment facility, the IP could benefit from a more detailed discussion of the context situation on the lending by the local banking community as well as on plans by the MDB community in the country).	As stated in Annex 6, and based on consultations with local stakeholders, in particular local financial institutions, three are two financial barriers that the proposed investment facility is aimed at overcoming: First is lack of equity investment. The low level of equity invested in the sector results from poor project preparation and a high perceived risk because the industry is relatively new in Honduras. Second is Lack of credit —to attract credit the project needs equity investment— if the equity is insufficient the project risk is too high.
The IP could benefit by presenting implementation chronograms for all 3 components of the SREP program, and not only the one related to the PAPERC [now called ADERC] component; otherwise it is difficult to see the interactions and links between activities that are relevant to the achievement of the implementation framework.	Timelines for project preparation and submission to SREP Subcommittee have been added. More detailed timelines of implementation of specific activities upon project approval will be developed during the preparation phase.
The monitoring and evaluation section of the IP presents a table including a framework for the monitoring of the program. Such table could be restructured in order to start with the presentation of the project outcomes and output, followed by the monitoring framework of the catalytic replication and then the transformative impact of the program.	Agreed. Thanks. This has been restructured as recommended.

The IP does not include a description of the selected indicators for monitoring and there are several of those that do not come easy to figure out starting from the indicators that are presented for each of the components of the program that are presented in the relevant annexes 5 to 7. The monitoring and evaluation framework includes very few indicators that can be actually linked to the catalytic and replication components of the off-grid program. Several indicators required for the establishment of the baselines are not clearly defined and there is connectivity in the document to a schedule for the determinations and selection of them.	Thanks. Indicators have been revised to make the link to the program activities and expected outputs and outcomes more direct. More information on baselines has also been included.
The IP proposed is clearly supportive of action aimed at scaling up RE technologies in the country, although there is a tendency for it to be based on expected and anticipated outcomes. The IP document may benefit for more in depth discussion on implementation approaches that will create the right signals for the financing of on-grid projects as well as on how the program could scale up the off-grid components. The discussion of models for implementation must be done early-on in order not to jeopardize the overall outcome of the SREP program.	The team agrees that elaborating the models for implementation is a key barrier that needs to be addressed and as such will be supported by the proposed investment plan. However, this requires studies and TA that could not be done ahead of the expected SREP support.
Scaling up and replication contributions of each of the components of the plan need to be further discussed and emphasized in the document, in order to substantiate the road map ahead to the achievement of the country´s aspirations that are at the core value of this intervention.	The team agrees that Scaling up and replication contributions of each of the components should be sought and is an important aspect of the future implementation of the program. However, since the models will be elaborated with the support of SREP as part of the IP activities, it is not possible at this stage to elaborate a road-map for such future post-program scaling-up.

HONDURAS SREP INVESTMENT PLAN TECHNICAL REVIEW

1. **Title of Investment Plan:** PROGRAMA DE AUMENTO DEL APROVECHAMIENTO DE FUENTES DE ENERGIA RENOVABLE (SREP) / PLAN DE INVERSIONES DE HONDURAS. Completed Spanish version received on October 1st, 2011 at 09:49 a.m.

2. **Program under the SCF:** Scaling Up Renewable Energy Program in Low Income Countries (SREP)

3. **Name of the reviewer:** Oscar Coto

4. **Date of submission:** October 5th, 2011.

5. **Part I: General Criteria**

The Honduras SREP Investment Plan (IP) is written based on a thorough description of the current context situation both of the country and the energy sector, paying attention to describing both the grid connected and off grid rural contexts (regulatory and status of project development); also including a brief description of the rural energy for cooking situation, as well as including the description of the renewable energy endowment of the country. The proposed plan is also situated within the framework of aspirations of the country as related to the *Ley de Visión de País* and the *Plan de Nación*, both of which include specific aspirations for the inclusion and scaling up of the participation of renewable energies (RE) as well as to the improvement of access to energy services by the country´s population.

The plan is also based on a discussion of perceived barriers that are restricting the current efforts related to the scaling up and mainstreaming of RE within grid and off-grid connected electricity. The proposed IP intents to include a set of diverse activities from a programmatic perspective by defining three (3) areas of involvement for SREP: (i) a series of activities aimed at improving the normative and regulatory framework in support of RE, (ii) a program for supporting the development of grid connected RE projects named PAPERC (which includes the development of financial mechanisms for project finance and the leveraging of monetary resources required to increase the transmission capacity required to evacuate RE into the grid), and (iii) a program for rural energy service provision based on development of RE linked to productive uses of energy, which is also inclusive of a component for improved cooking stoves dissemination in rural communities.

According to the evaluation criteria for the technical review, the proposed Investment Plan:

a. Complies with principles, objectives and criteria of SREP? The IP complies with the principles, objectives and criteria of the SREP program as specified in the DESIGN DOCUMENT FOR THE PROGRAM ON SCALING-UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES (SREP), A TARGETED PROGRAM UNDER THE STRATEGIC CLIMATE FUND. There is a link established in the IP on the complementarities of SREP funds to already on-going efforts, especially on the side of grid connected RE project development; although less clear for the third component of the proposed program.

b. Takes into account in-country capacity to implement the plan? The IP clearly supports the aspirations of the country and the willingness to make every effort possible to properly implement the IP. An issue to be noted is that the proposed investment plan does not include any resources

from the Government of Honduras except for operations expenses for investment preparation during 5 years. Such level of contribution is not discussed in the context of the overall disbursement plan and is not properly justified as adequate for the level of engagement required in order to move the IP into action. Moreover the IP is not requesting any SREP resources for investment preparation as per each program component detailed description in the relevant annexes 5, 6 and 7.

c. Has been developed on sound technical basis? The IP seems to have been developed based on sound background and context information as well as by having assessed perceived barriers for the deployment of RE in the country in both target areas of the program. The context discussion lacks the inclusion of important areas such as the grid off take capacity for RE technologies as well as a discussion on the banking and financing sectors as they relate to important components of the proposed IP.

d. Demonstrates how will initiate transformative impact? The IP assumes rather than demonstrates how it will initiate transformative impact. This is especially true in the case of the component related to RE for sustainable rural energy service provision, where there is little clarity on the plan on issues related to targets and identification of key actions to enact movement (taking into account that it is solely dependent on SREP funds as well as ICAs, with no government counterparts). On the RE for grid connected component, the IP assumes the participation and competitiveness of the proposed financial arrangements to be developed, as well as the myriad of institutions and organizations involved, but there is little discussion and justification on the appropriateness of the implementation arrangements.

e. Provides for prioritization of investments, capture and dissemination of lessons learned, M&E and links to results framework? The IP assumes a prioritization of investments but lacks depth in supporting the proposed structure and how the selected one is relevant to create the transformative impact. The program results framework linked to M&E is very vague in most of the variables, where there is hardly any baseline and target information; therefore making the assessment of how investments will be linked to results themselves. As per capture and dissemination of lessons learned the IP is not very clear (table 18 refers to lessons learned amongst countries, which does not seem to be applicable as well as referring to a PAAFRE program which is not defined anywhere). Links from the description of each component of the program and their associated targeted indicators to the overall project monitoring framework seem to be weak, and in many cases important indicators do not seem to be carried into the overall monitoring and evaluation structure.

f. Proposed with sufficient stakeholder consultation? The existence of an SREP in-country steering committee assures high level participation of key stakeholders during the formulation of the plan, and hopefully into the implementation of the plan. It is stated that during both the scoping and joint mission, interviews were conducted with relevant stakeholders in the country. Although the plan states in Annex 2 that there will public consultations to the plan, it is not clear if the web based consultation will happen after submission for final approval by SREP and how relevant inputs will be taken into account in due process.

g. Addresses social and environmental issues, including gender? Important aspects related to social and environmental issues seem not to be adequately discussed in the IP; for example the issue of acceptance of hydro electric development and its relation to local consultation processes may merit further discussion (especially in a country like Honduras with a weak current political situation and climate for stakeholder discussions and convergences). Another aspect that seems not to be addressed relates to the issue of RE technology acceptance considerations given in the

formulation of relevant activities in the rural off-grid component of the plan (also related to the issue of improved cook stoves). Although the IP mentions the importance of gender components, the issue is only linked to the monitoring of access to energy services by rural men/women; whereas there is ample experience in the energy-gender community that better and improve indicators need to be integrated into the plan.

h. Supports new investments or funding additional to on-going/planned MDB investments? The IP considers involvement of MDB´s only in the component related to the program for supporting the development of grid connected RE projects. There is no description within the IP on the on-going/planned investments by MDB´s, therefore it is not possible to conclude on how the proposed plan supports new investments from MDB´s.

i. Accounts for institutional arrangements and coordination? The IP describes the structure of the Secretariat of Finance and its associated administrative offices including the denominated UGEFCC and the UAP. It also mentions that an SREP Executive Committee has been established by Decree (including public and private sector participants).The IP falls short in describing the actual arrangement for executing coordination amongst the myriad of stakeholders involved in a multi dimensional activity such as the one proposed, and the capacity of the proposed key organizational elements is assumed rather than discussed from the perspective of the implementation of the SREP supported program.

j. Promotes poverty alleviation? The IP addresses poverty alleviation aspects for both components of the plan. At the grid connected level, it presupposes that the IP will contribute to RE related PYMES development, and at the rural development level there will be increased fluxes of resources for poverty reduction related infrastructures, although those are not clearly demonstrated within the plan.

k. Considers cost effectiveness of investments? Except for the discussion on the PAPERC component of the IP (which is based on the on-going activities related to RE project development for grid connected in Honduras, which is likely to be responsive to cost effectiveness from small scale RE technologies as suppliers of electricity to the grid), there is no discussion on cost effectiveness of investments in the case of the rural off-grid component of the IP. An important issue that is not discussed is how the provision of concessional financing to project developers can contribute to lower the long term financing costs of project financing after the execution of the proposed plan, especially when MDB support is not a long term guarantee for scaling up and the local/international financing communities will need to fill in the financing needs required for scaling up (and taking into account the effect of country risk ratings).

6. Part II: Compliance with the investment criteria or business model of the relevant program

According to the evaluation criteria for the technical review, the proposed Investment Plan:

a. Catalyses increased investments in renewable energy in total investment? Current investment baselines for either component 2 and 3 of the IP are not discussed in the document, therefore making difficult to assess if SREP funds will sustain the attraction of other levels of financing and lead to replication. In the on-grid case, it is known that 49 projects have standing PPAs and are seeking financing, but no information apart from the discussion of the perceived barriers is submitted on the baseline of current success in financing terms. It will be very important to discuss the depth of the local banking community as well as the existing equity capacity in leveraging the proposed MDB financial package in order to properly assess the catalytic role of the SREP funding. At the level of the off-grid component of the IP, there is no indication on how

the ICAs and private developers contributions will create the sustain investment required for scaling up such component. Since the IP does not call for the attraction of any government financing, perhaps it is necessary to discuss how different scaling up risks will be managed through the implementation of the program, especially since the existing model is that of a single electricity buyer in the market.

b. Creates an enabling environment? The IP states the commitment of the country for promoting RE and energy access goals. The creation of an enabling environment is mostly dealt with in the normative and regulatory component of the IP. Several types of activities are envisioned as necessary, mostly all of them related to the on grid component of the program; leaving-off a sense of consideration for the creation of enabling environments for off-grid catalytic action. One issue to take notice is that the IP calls for the enacting of organizational transformations at the institutional level (ENEE and other institutions), but lacks the commitment on how those if required are going to be financed and implemented.

c. Increases energy access? It is anticipated that component 3 of the IP is clearly link to indicators of increased energy access, although the IP lacks to establish clear targets for its contribution and how that will modify the existing baseline. Component 2 of the IP assumes a contribution to increase energy access and proposes to monitor it, but in reality the PAPERC component description only deals with financing availability for project development and collateral financing for transmission for the off-take of RE capacity, being silent on the issue of mobilization of grid extension and distribution interconnection programs and fees.

d. Implementing capacities? The IP describes in different sections and at different depths the implementation capacity, perhaps it will be useful to have a more coherent and succinct description on the organizational mode, roles and responsibilities, and expected decision making interactions. The planned implementation approach including relevant offices at the Secretariat of Finance and the existence of an in-country SREP Steering Committee legally sanctioned by decree contributes to foster an enabling environment for stakeholder participation.

e. Improves the long term economic viability of the renewable energy sector? For the on grid RE, long term viability is related to how sound energy markets are created and how private power producers act within the enabling policy, regulatory and financing environment. The on-going single electricity buyer market model as well as the bidding procedures assures the environment for the targeted 49 projects with a 250+ MW capacity, but longer term viability of the sector merits a discussion in the IP on how sustainable is it to continue once the MDB lending program is achieved. As per component 3 related to off grid energy service provision, further discussion may be needed on the issue of long term viability with an scenario of diminishing foreign aid and no commitments from the central government to foster public-private partnerships envisaged.

f. Transformative impact? The proposed IP considers transformative impacts in several dimensions mostly related to national scale outcomes of mobilization of key stakeholders in both components, with consideration given to the delivery of SREP aims and objectives. The transformative impact of the IP is more clearly addressed on the side of the grid connected component of the plan, where there is a model and an approach more clearly established and directly linked to the continuation of the single buyer model and promotion of access to financing by the MDBs in conjunction with the local banking community. The transformative impact discussion on the off-grid component of the program is not so well established in the proposed investment plan and merits further discussion. There is an asymmetry of information related to the implementation timeline for the regulatory as well as for the off-grid component of the IP;

since only the on grid connected implementation timeline is presented; creating a critical problem for the evaluation on transformative impacts.

7. Part III: Recommendations

- The IP document was received with sections both written in Spanish and English, it is recommended that the text should be standardized to a one language.

- The IP´s Executive Summary will benefit with the inclusion of relevant information on the targeted program components, the overall proposed investment plan and the expected results framework (incorporating clearer baselines and targets of the program).

- The IP document includes a presentation of risk categories associated to the implementation of the program. The risk perceptions are not clearly supported and do not provide the reader with transparent valuation of the specific risks. With respect to environmental risks, it is stated that the strengthening of SINEIA will be a way of mitigating environmental risks, but no inclusion of such strengthening activities is included in the description of activities under any of the 3 program components submitted to SREP. With respect to social risks associated to the program, it is said that the mitigation activities will include training, promotional campaigns, socialization of stakeholder participations; it is recommended for the IP to call for the enactment of codes of conduct for the selection of beneficiary projects as well as the incorporation of criteria on social responsibility for project development. With respect to financial risks, the IP assumes the depth of participation of the local banking community but does not provide confirming evidence of such participation so it is recommended to expand on such issues and mitigating actions in case the risk level increases due to general economic climate changes in the country. Taking into account the overall climate vulnerability of the country, it is suggested in this evaluation that the proponents should give consideration to climate vulnerability risks and how to mitigate those perceived risks if considered relevant.

- The IP could benefit from an improved description of the proposed structure for implementation of the program, description of specific roles and responsibilities of participating agencies and how leveraging of resource approaches are to be implemented. The existence of the Steering Committee for SREP implementation is mention in the text but is not only until an annex that there is full description of its membership, perhaps a description in the main text on the charter, membership, expected roles of the different players would contribute to enhance the implementation approach of the plan.

- Component 1 of the proposed IP does not discuss any enabling environment required for the scaling up of off-grid contributions from RE technologies and concentrates on the promotion of policies and institutions required for on-grid applications; issue that requires further discussion in the context and barrier identification sections of the document. Both under the description of perceived risks as well as within Annex 5, there is mention to the need to support and enact organizational changes that are required for RE scaling up in the country, but there is no indicator in the monitoring framework linked to such an important endeavor.

- The poverty issue is an important issue to be acknowledged when discussing the implementation of innovative solutions for off-grid RE based energy service provision and as such should be discussed within the scope of component 3 of the off grid component of the IP; the IP could benefit from a more in depth discussion on the existing in-country lessons learned and model

approaches to be used in the promotion and scaling up of this component (specially in public-private models for energy service provision in poor rural areas). The IP calls for the selection of appropriate and successful models in this component but it fails short from providing an ex-ante route map of the direction it intends to take (taking into account that the contributions and leverage only comes from the private sector and from ICAs).

- A couple of issues seem to be needing further discussion and justification in the proposed plan with respect to component 2 related to on-grid connected RE technologies. The first one relates to the expressed need to use SREP resources for leveraging resources for extending transmission and distribution capacity for RE off-take by the utility, but no context information is provided in the IP on this subject making it very difficult to assess the logical framework for this intervention (understanding that the intended applications involve small scale renewable energy projects, the IP could benefit from a more detailed description on whether the intended approach will favor distributed/dispersed approaches for off-take or high voltage transmission line deployment). The second issue relates to the perceived need for concessional and non-reimbursing capital in order to jumpstart catalytic financing for on-grid project development and complement risk profiles of the local banking community; this issue is assumed in the document but there is no presentation and discussion of the issue (taking into account that nearly 30% of the SREP funds are to be allocated to the investment facility, the IP could benefit from a more detailed discussion of the context situation on the lending by the local banking community as well as on plans by the MDB community in the country).

- The IP could benefit by presenting implementation chronograms for all 3 components of the SREP program, and not only the one related to the PAPERC component; otherwise it is difficult to see the interactions and links between activities that are relevant to the achievement of the implementation framework.

- The monitoring and evaluation section of the IP presents a table including a framework for the monitoring of the program. Such table could be restructured in order to start with the presentation of the project outcomes and output, followed by the monitoring framework of the catalytic replication and then the transformative impact of the program. The IP does not include a description of the selected indicators for monitoring and there are several of those that do not come easy to figure out starting from the indicators that are presented for each of the components of the program that are presented in the relevant annexes 5 to 7. The monitoring and evaluation framework includes very few indicators that can be actually linked to the catalytic and replication components of the off-grid program. Several indicators required for the establishment of the baselines are not clearly defined and there is connectivity in the document to a schedule for the determinations and selection of them.

- The IP proposed is clearly supportive of action aimed at scaling up RE technologies in the country, although there is a tendency for it to be based on expected and anticipated outcomes. The IP document may benefit for more in depth discussion on implementation approaches that will create the right signals for the financing of on-grid projects as well as on how the program could scale up the off-grid components. The discussion of models for implementation must be done early-on in order not to jeopardize the overall outcome of the SREP program.

- Scaling up and replication contributions of each of the components of the plan need to be further discussed and emphasized in the document, in order to substantiate the road map ahead to the achievement of the country´s aspirations that are at the core value of this intervention.