THE INTERNATIONAL REC STANDARD

Country Assessment Report

Country/Region Name- Honduras:

Honduras is situated in Central America; bordered by Guatemala, El Salvador and Nicaragua. It has a population over 9.5 million and GDP worth $24 billion, with a growth rate of 3.7%.

(World Bank 2018)

Economic structure and activity:

Honduras has a mixed-economic system, which combines centralised economic planning and state regulation with emerging market freedom. The service sector accounts for 57.11% of GDP. Industry contributes 26.8% and is centred around the manufacturing of textiles, in which most products are exported to the US. The agricultural sector accounts for 11.79% of GDP and mainly produces coffee, fruit, vegetables, palm oil and livestock.

Top private companies with RE commitments:

Generation and demand: (e.g. type, MW, TWh)

Renewable energy resources account for 62% of the installed power capacity in Honduras. Hydropower dominates the renewable mix, accounting for a quarter of the nation's installed capacity. Actual generation of hydroelectricity is 10% higher, with the effective capacity of PV solar dropping 8 points compared to its installed capacity. Overall, renewable energy contributes 60% of Honduras' power needs.

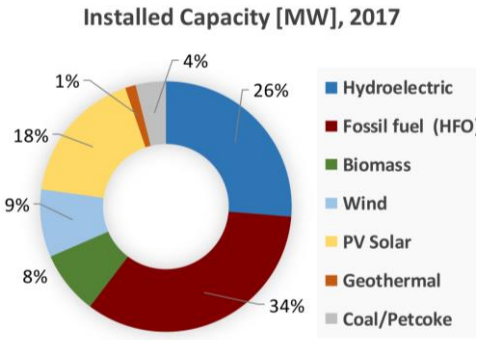
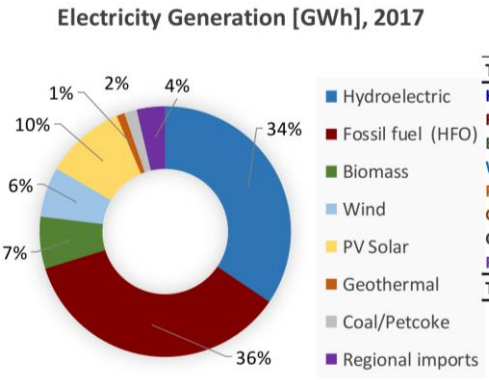


Figure 1. Share of installed power capacity (MW) per technology (IRENA 2018).

Technology	Installed Capacity [MW]
Hydroelectric	675,8
Fossil fuel (HFO)	875,1
Biomass	209,7
Wind	225,0
PV Solar	450,9
Geothermal	35,0
Coal/Petcoke	99,8
Total Capacity	**2571,3**

Table 1. Installed capacity of electricity per technology (IRENA 2018).



Technology	Electricity Generation [GWh]
Hydroelectric	3086,7
Fossil fuel (HFO)	3203,9
Biomass	599,7
Wind	578,1
PV Solar	923,7
Geothermal	92,6
Coal/Petcoke	144,6
Regional imports	328,6
Total generation	**8957,8**

Figure 2. Electricity generation per fuel type (IRENA 2018).

In 2017, peak power demand in Honduras reached 1560 MW (IRENA 2018).

Electrical Interconnection and import/export:

Honduras is part of the Central American Electrical Interconnected System (SIEPAC) and is connected to El Salvador, Guatemala and Nicaragua by 269km of transmission lines. SIEPAC has a total extension of 1799km. Honduras is a net importer in the regional market.

In 2016, Honduras imported 195,000 MWh of electricity and did not export any power (Worldometers 2016).

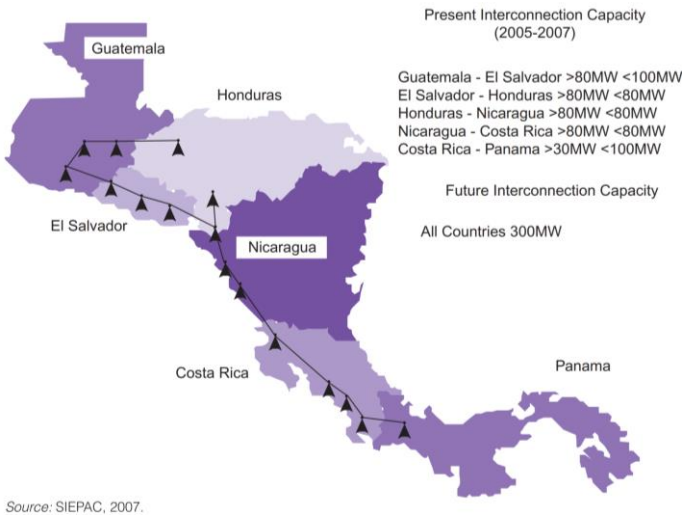


Figure 3. Interconnection capacity between SIEPAC countries (ESMAP 2010).

Market Structure:

The state-owned utility Empresa Nacional de Energia Eléctrica (ENEE) is responsible for the generation, transmission and distribution of power. The sector is going through a period of transition after the approval of a new electricity law in 2014, which will end ENEE's monopoly on power generation. The law also enacted the independent regulatory commission Comisión Reguladora de Energía (CREE). This legislation was the result of the state-owned company's high level of debt (1.8% of the country's $18.6bn GDP in 2013) given power subsidies, late payments and power losses.

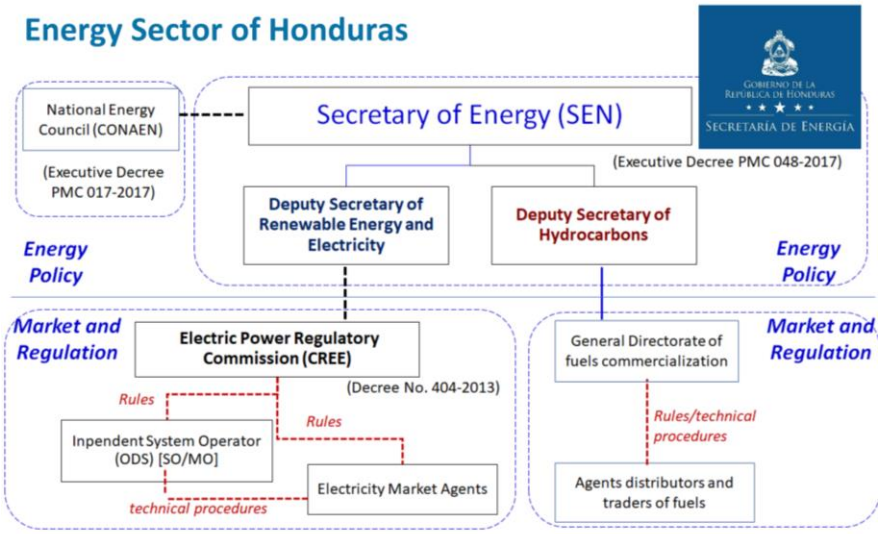


Figure 2. Market structure of Honduras' power sector (IRENA 2018).

Responsible Government Department: (include key contacts)

The Energy Cabinet constitutes the most authoritative power in the electricity subsector and its formulation of policy. Its functions include:

- order the preparation of comparative studies of the relative prices of different energies with the purpose of promoting the rational use of energy and preventing or correcting distortions;
- establish the evaluation criteria and procedures for the management and development of multipurpose projects;
- decide at the request of the CNE when to move forward with greater market liberalization;
- approve expansion programs for the sector;
- make the rules for efficient electricity use.

The Secretariat of Environment and Natural Resources (SERNA) is a government agency charged with the formulation, coordination and evaluation of policies related to the protection of and taking advantage of water resources, renewable energy, energy generation and transmission, as well as the mining of hydrocarbons.

The National Energy Commission (CNE) is a decentralised agency of SERNA and is responsible for regulating the power sector.

(ESMAP 2010)

Existing/Planned Energy Legislation: (is there a CPO)

Decree 70, published in June 2007, is the main legislation on incentives to renewable energy. It establishes a 10% price premium to clean energy projects for the first 15 years of operation. It also grants import, income and sales tax exemption to renewable generators.

A feed-in tariff scheme is offering contracts of $180/MWh for the first 300MW of PV that get commissioned by June 2015. After this date, the projects would receive $150/MWh. A total of 412MW of PV projects are in the pipeline hoping to meet the June timeline. The feed-in tariff scheme exists in parallel with the country's national targets for renewables, but there are no

explicit rules, regulations or quota system in place for how the two policies should interact. As such, the generators do not lose the right to sell any renewable attributes from generation plants while receiving the FIT.

Honduras also uses auctions to contract new power capacity. In 2010, ENEE held a clean energy-only tender, which contracted a total of 250MW of capacity from 39 hydro, biomass, cogeneration and geothermal projects. The diagram below shows the latest levelised electricity prices for the Americas and Honduras with costs around US$150/MWh for solar photovoltaic in the country

Environmental Legislation for RE:

Existing/Planned Certificate Systems: (purpose, extent)

In Latin America, Chile is the only country with a pure renewable energy certificate system, while Mexico has a "clean energy" certificate system with the first year of compliance set to start from 2018. From studies on the region's energy strategy, it does not seem that certificates will play a significant role in Latin America's near future policies for promoting renewable electricity. In Honduras, there is no such system in place and there are no current plans of developing such system.

RE market potential:

Although a substantial amount of Honduras' hydropower potential has been installed, a large degree remains untapped, particularly micro-medium sized plants. Table 2 lists an array of hydropower projects to be commissioned in the coming years. Solar energy is another viable renewable for Honduras, with the south west presenting the most potential. Average solar irradiation in this part of the country reaches between 5.6 and 6 kWh/m2 per day (World Bank 2019). Solar serves as a practical solution for supplying energy-isolated communities in rural Honduras, who mostly need power for lighting. The south is also exposed to very high wind speeds (up to 9.5 m/s) and is suitable for turbine deployment.

Project	Expected income year	Central type	Power Capacity [MW]	Units	Av. Energy generation per year [GWh]	Estimated investment cost [MUSD$]	Cost UDS$/MW-inst
Patuca III (Piedras Amarillas)	2019	*Dam*	104	2	340	455,8	4,4
Patuca II (Valencia)	2026	*Dam*	270	3	1337	768,0	2,8
Patuca II-A (La Terrosa)	2026	*Dam*	150	3	691-800	682,1	4,5
Los Llanitos	2023	*Dam*	98,2	2	370,4	566,7	5,8
Jicatuyo	2024	*Dam*	172,9	4	667,2	584,4	3,4
El Tablón	2022	*Run-of-river*	20	2	991,1	164,4	8,2

Table 2. Planned renewable energy projects (IRENA 2018).

(ESMAP 2010)

Market risks and challenges:

Extent of Engagement with Government: (brief summary of any contact already made with the national government regarding certification in general and I-REC)

Expected response from Government:

Current Environmental Reporting in Energy:

Any other Relevant Information:

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Preparation Date	