



Ministerio  
de **Electricidad y**  
**Energía Renovable**

# Strategies for supporting Rural Electrification with Renewable Energy in Ecuador

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INTERNATIONAL OFF-GRID RENEWABLE ENERGY CONFERENCE & EXHIBITION  
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## ENERGY PROFILE (2010)

# ECUADOR



Population: **14.5 million** – Area: **230.000 km<sup>2</sup>**

Primary Energy Supply: 475.3 PJ - Renewables: 59.0 PJ (**12.4%**)

Electricity generation: 17.2 TWh –  
Renewables: 9.6 TWh (**55.6%**)

Electrical capacity: 4,939 MW –  
Renewables: 2,162 MW (**43.8%**)

Electricity use per capita: 1,115 kWh

Electricity access rate: **92.2%** Urban:94%  
Rural:88%

Share of population using solid fuels: **< 5%**





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## 2 examples of successful Off-Grid Renewable Energy Projects



## SUCCESS #1: Zero Fossil Fuel Galápagos

### Facts

- Created in **2007**.
- To avoid **oil spills** and **expensive fuel transportation costs**.
- 4 Islands with **HYBRID SYSTEMS**: Wind, PV and Thermoelectric (Jatropha).
- **100% RE Minigrids**.
- Financed by Ecuadorean Government and International Cooperation





## SUCCESS #1: Zero Fossil Fuel Galápagos



35kW



138 kW



2.4MW





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## SUCCESS #2: EURO SOLAR – RENEWABLE ENERGY FOR DEVELOPMENT



1.1 KWp PV



INFOCENTER



Community  
Refrigeration

<http://www.energia.gob.ec>





## ECUADORIAN STRATEGY FOR SUPPORTING RURAL OFF-GRID ELECTRIFICATION

### 3 COMPONENT STRATEGY







## COMPONENT 1: REGULATORY FRAMEWORK

### Ecuadorian Constitution

National  
Plan for  
Good Living

Electric Sector Law

Electrification Master  
Plan 2012-2021

National Electricity Council  
Regulations

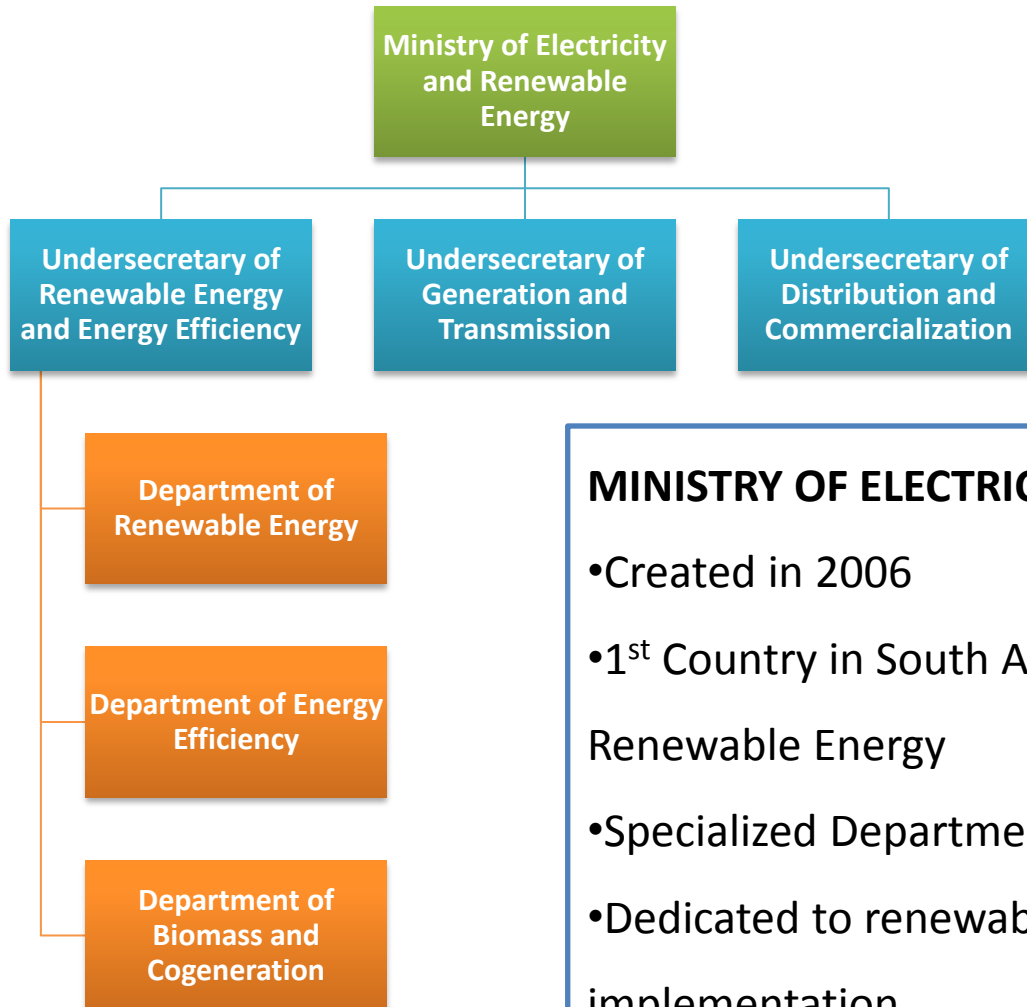
- State policy that promotes **clean technologies** as well as **non polluting** and **low impact alternative energy systems**.

- **Feed in tariffs** and other incentives for RE projects.

- Clear methodology that creates the **“game rules”** for the RE market.



## COMPONENT 1: REGULATORY FRAMEWORK



### **MINISTRY OF ELECTRICITY AND RENEWABLE ENERGY**

- Created in 2006
- 1<sup>st</sup> Country in South America to have a Ministry of Renewable Energy
- Specialized Departments for each branch
- Dedicated to renewable energy policy and project implementation.



## REGULATORY FRAMEWORK - Ecuadorian Energy Policy

### Constitution 2008

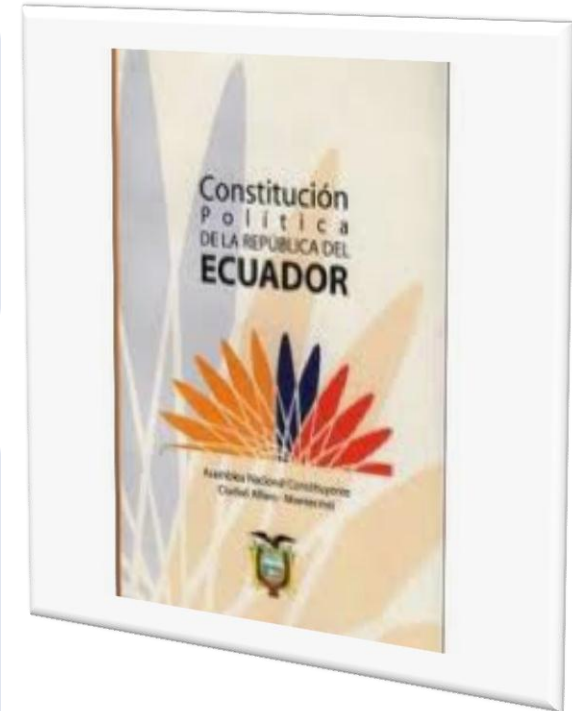
**The Constitution clearly supports Renewable Energy and prioritizes its deployment**

Art.  
15

- The State will promote, in the public and private sector, the use of **clean technologies** as well as **non polluting and low impact alternative energy systems....**

Art.  
413

- The State will promote **energy efficiency, , development** and use of environmentally clean technologies, as well as low impact **renewable energy systems** that will not risk food sovereignty, ecological balance of ecosystems nor water sources.





# REGULATORY FRAMEWORK - National Plan for Good Living

National Secretary of Planning and Development



## Energy Strategy

- Energy generation must focus on sustainability through the promotion of **renewable energy** and energy efficiency.

## Policy 4.3

- Diversification of the national energy matrix, promotion of efficiency and **greater renewable energy participation.**

## Goal 4.3.6

- Reach **96%** of rural households with electricity until 2013.



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## COMPONENT 2: COORDINATED AND ORGANIZED INTERNATIONAL COOPERATION

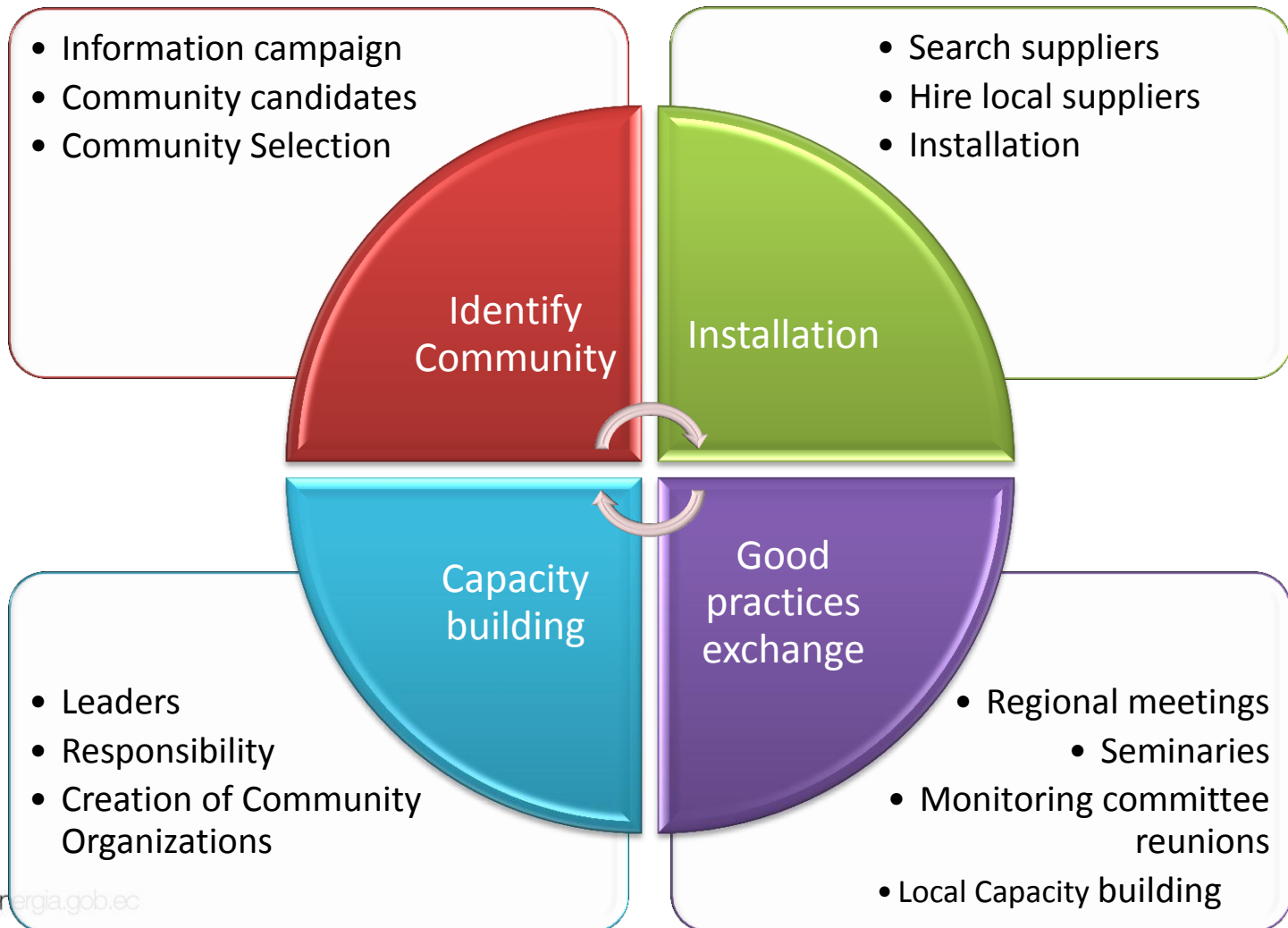


- International Cooperation must align its projects with Ecuador's interests.
- Round tables and negotiations to combine several projects and not "overlap" efforts.
- Incentive Technical Cooperation with robust long term strategies that will increase sustainability.
- Focus on Sustainability (O&M)



## COMPONENT 3: Strong Capacity Building and Social Participation

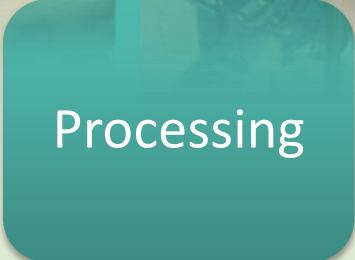
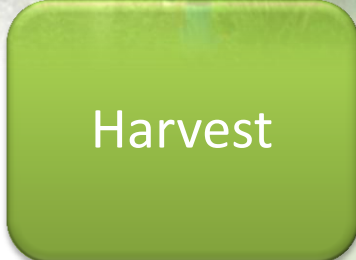
### EURO SOLAR – Activity Plan





# COMPONENT 3: Strong Capacity Building and Social Participation

## Energy Generation in Galapagos – Jatropha Oil Production in Manabí





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# Muchas Gracias

# Thank you very much

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**CLEAR  
REGULATORY  
FRAMEWORK**

**ORGANIZED  
INTERNATIONAL  
COOPERATION**

**STRONG  
CAPACITY  
BUILDING**