POLICIES IN THE ENERGY SECTOR

Carlos Pérez
MINISTER
ELECTRIC SECTOR
Government Policies in the Energy and non-Renewable Resources Sector

- **Attract and promote new investments** that contribute to boost the national economy.
- Work with the private sector to take advantage of synergies.
- Apply **new contractual models** such as Production Sharing Contract and Concessions.
- Promote **transparent negotiations**, safeguarding the interest of the Ecuadorian State.
Clean electric generation matrix

Net energy 2006

- Hydroelectric: 41.0%
- Termic: 10.0%
- Non conventional energy: 1.0%
- Interconnection: 48.0%

Net energy 2017

- Hydroelectric: 14.8%
- Termic: 1.5%
- Non conventional energy: 83.5%
- Interconnection: 0.2%
Power Demand and available Generation (MW)

Source: CENACE, May 2018
New generation projects

- **Manduricau**: 65 MW of power
- **Coca Codo Sinclair**: 1,500 MW of power
- **Toachi Pilatón**: 254.4 MW of power (95.06%)
- **Quijos**: 50 MW of power (46.72%)
- **Sopladora**: 487 MW of power
- **Mazar Dudas**: 21 MW of power (87.32%)
- **San Francisco**: 275 MW of power (98.92%)
- **Villanoco**: 16.5 MW of power
- **Delsitanisagua**: 180 MW of power (90.80%)

**Operating Hydropower Plants**

**Hydropower Plants in Construction**

**Thermal Plants in Construction**
New planned investments in generation

- **Unconventional Renewable Energy Block:**
  - 200 MW - USD 440 million
- **Small Hydroelectric Plants Block:**
  - 140 MW - USD 280 million
- **Geothermal Block:**
  - 150 MW - USD 600 million

4 700 MW of capacity to be installed (2018 – 2025)

USD 6 400 millones
In new investments
Ecuador has a strong transmission system

The connection to the oil system will allow:

- **300 MW** Thermal generation displaced
- **USD 350 millones** Annual fuel savings
**Regional integration framework**

- 500 kV Alférez – Jamondino – Inga line (2017-2020)
  - Increases in current 230kV interconnection capacity
- 220 kV Laguna Colorada – Chuquicamata line
- 500 kV La Niña-Daule line (2017)
- 2nd line, 500 kV La Niña-Daule (2020)
- Back to Back + 220 kV Los Héroes – Arica line (2017)
- HVDC Montalvo Line–Crucero (2020)

**Stage 1**
- Short Term Market Institutionality
- Coordinated office (EC-CO-PE)

**Stage 2**
- Financial contracts between agents

**Stage 3**
- Physical contracts Regional planning
Galápagos: zero fossil fuel

Real and effective commitment to the **sustainable development and conservation** of the Galapagos Islands.

**Eradicate** the use of **petroleum derived fuels** from the islands.

**BALTRA**
- Wind power: **2,25 MW**
- Photovoltaic: **65 kWp**
- Storage: **1 MW – 4,27 MWh**
- Interconnection cable: **50 km, 34,5 kV**
- Santa Cruz Photovoltaic: **1,5 MWp**

**HYBRID ISABELA**
- Dual motors (pinion): **1,62 MW**
- Photovoltaic: **0,92 MWp**
- Storage: **620 kW - 305 kWh**

**FLOREANA**
- Dual motors (pinion): **138 kW**
- Photovoltaic: **21 kWp**

**SAN CRISTOBAL**
- Wind power: **2,4 MW**
- To be implemented: 1 MWp photovoltaic + 1,4 MWh of storage
Private sector participation framework in the electric sector

Master Plan of Electrification
Planning the expansion considering technical and economic criteria

Projects or generation blocks (hydro, thermal, Non-Conventional Renewable Energy)

Authorizes

MEER

Public Selection Process
- It is awarded to the offer that, fulfilling the technical requirements, presents the lowest price.
- Winner signs long-term contract with all distributors

Concessions

Private companies and / or foreign State companies

Public or mixed companies
HYDROCARBONS SECTOR
### Ecuadors Hydrocarbons Potential

|                | Cumulative production | Reserves | Resources | Hydrocarbons volume
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<td><strong>Prospective with risk (3U)</strong></td>
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8 billion barrels of recoverable reserves, according to British Petroleum report (2016)
Oil National Production (May 2018)

Thousand Barrels per Day

- Total National Production: 522
- Petroamazonas Production: 403
- Private Sector Production: 119
- Block 43 - ITT Production: 60

Source: Regulation and control hydrocarbons agency
Exports
MAY 2017 - APRIL 2018

Actual invoiced value vs. 2018 budgeted value

Additional income due to actual price vs. 2018 budget (May 2017 - May 2018)
USD 968,655,283.14
Petroamazonas EP received a total of **8 technical-economic proposals** from private companies for the development of four Oil & Gas fields, located in the provinces of Sucumbios Orellana and Napo.

- **Investment:** USD 750 million.
- **Variable rates** indexed to the WTI.
- According to the received proposals, the rates fluctuate between 12.64 and 26.18 $/B.
- **Contracts** are under the modality of "Provision of specific services with financing".
## Investment Projects by Sector (MM$)

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<tr>
<th>Concept</th>
<th>2018</th>
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<th>2020</th>
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- Based on electrification plan, estimated investment

Sectorial council presentation March 2018