

Training and Dialogue Program Energy Policy



Country Report of El Salvador

Juan José García
National Council of Energy

Agenda

1. General information of El Salvador
2. The energy sector of El Salvador
3. Statistics of energy demand and supply
4. challenges in the formulation of the Energy Policy



GENERAL INFORMATION OF EL SALVADOR

General information of El Salvador

- Location: Central America, bordering the North Pacific Ocean between Guatemala and Honduras
- Territorial extension: 20,742 km²
- Population: 6.1 million; population density of 294 p/km²
- Climate: Tropical with two seasons; rainy season (from May to October) and dry season (from Nov. to April).
- Political Division: 14 departments (Capital: San Salvador) and 262 municipalities.
- Demographic data:
 - 52.7% women and 47.3% men
 - 62.5% urban area and 37.5% rural area
 - Age: 58.5% are under 30 years, the 31.1% are between 31 y 59 years, y el 10.40% are over 60 years.
- Economy: dollarized since 2001. The economic model is the result of following the *Washington Consensus* and is currently focused on the promotion of exports of domestic products
 - average monthly income per household is US\$479.15.
 - Gross Domestic Product (GDP) per capita is US\$7,500
 - family remittances, they represent 16% of GDP and they come mainly from United States of America



General information of El Salvador

Socioeconomic challenges

- Persistence of high levels of poverty and social deficits
- Insecurity: high homicide rates, crime and organized crime
- Low economic growth
- High rates of labor underutilization
- Weak fiscal situation
- Low levels of savings and investment
- Growing trade deficit and modest ability to attract foreign direct investment (FDI)

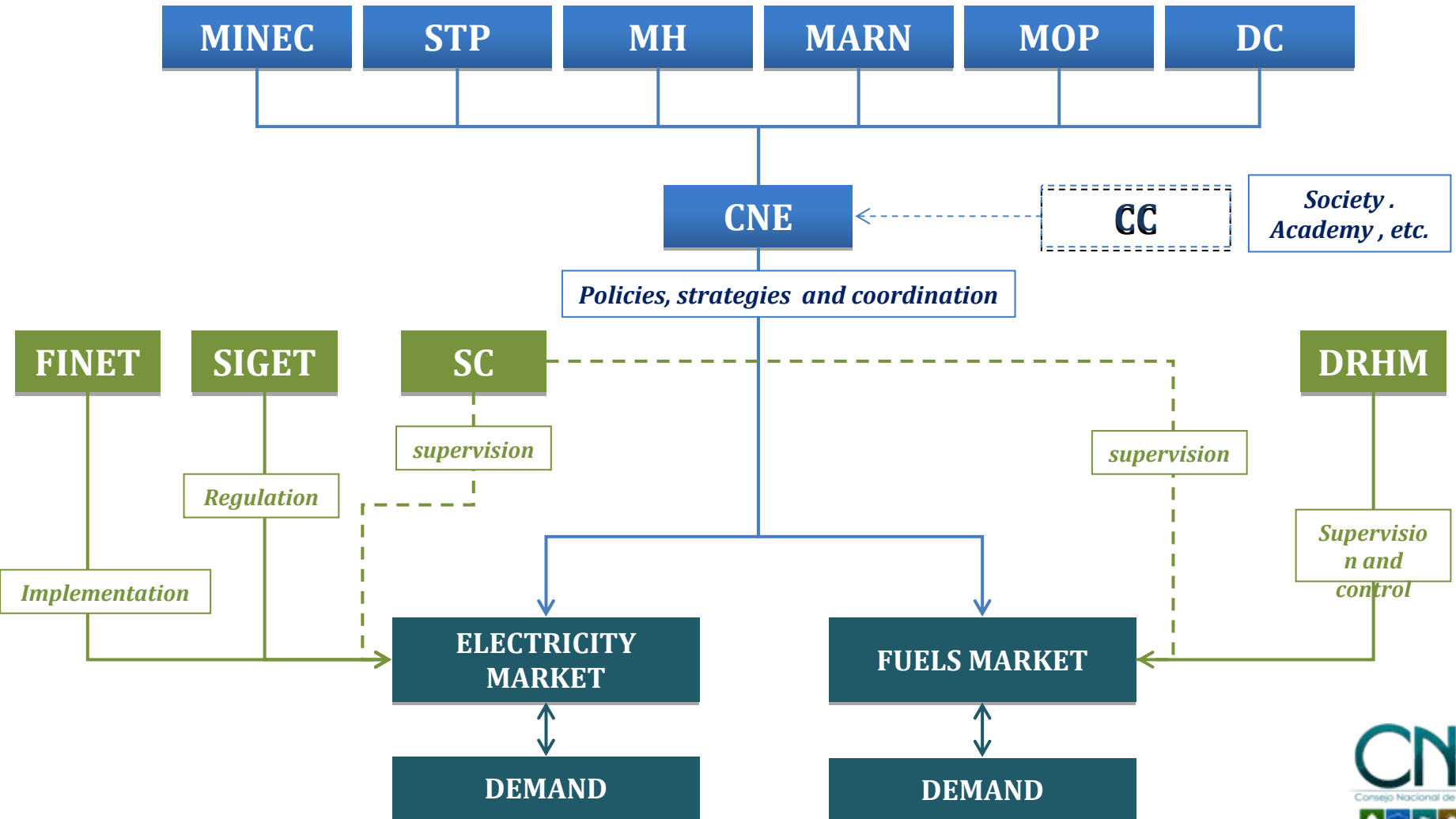


THE ENERGY SECTOR OF EL SALVADOR

The Energy Sector of El Salvador

Energy Sector in El Salvador – Institutional Framework

Board of Directors CNE



The Energy Sector of El Salvador

Electricity:

✓ This sector was restructured in 1996; and, as a consequence, new market entities were created and the activities of generation, transmission, distribution and commercialization were separated. The new entities created in this sector are:

- SIGET (Superintendencia of Electricity and Telecommunications)
- FINET (National Investment Fund in Electricity and Telephony)
- UT (Transactions Unit)
- ETESAL (Transmission Company of El Salvador)

✓ Generation: There are eighteen (18) generators, the biggest ones are: CEL (472 MW), LaGeo (204 MW), Duke Energy (338 MW), Nejapa Power (144 MW), INE (100 MW), And also exist small generators that provide electricity to the national grid.

✓ Distribution: in El Salvador there are eight (8) distributors



The Energy Sector of El Salvador

Fuels:

✓ The Ministry of Economy is in charge of regulating the sector in the following areas:

- Imports
- Transportation
- Distribution
- Trade
- Supervision and control
- Calculate the reference price for gasoline and diesel and the import parity price for LPG.

✓ In the fuel market, there are 4 competitors

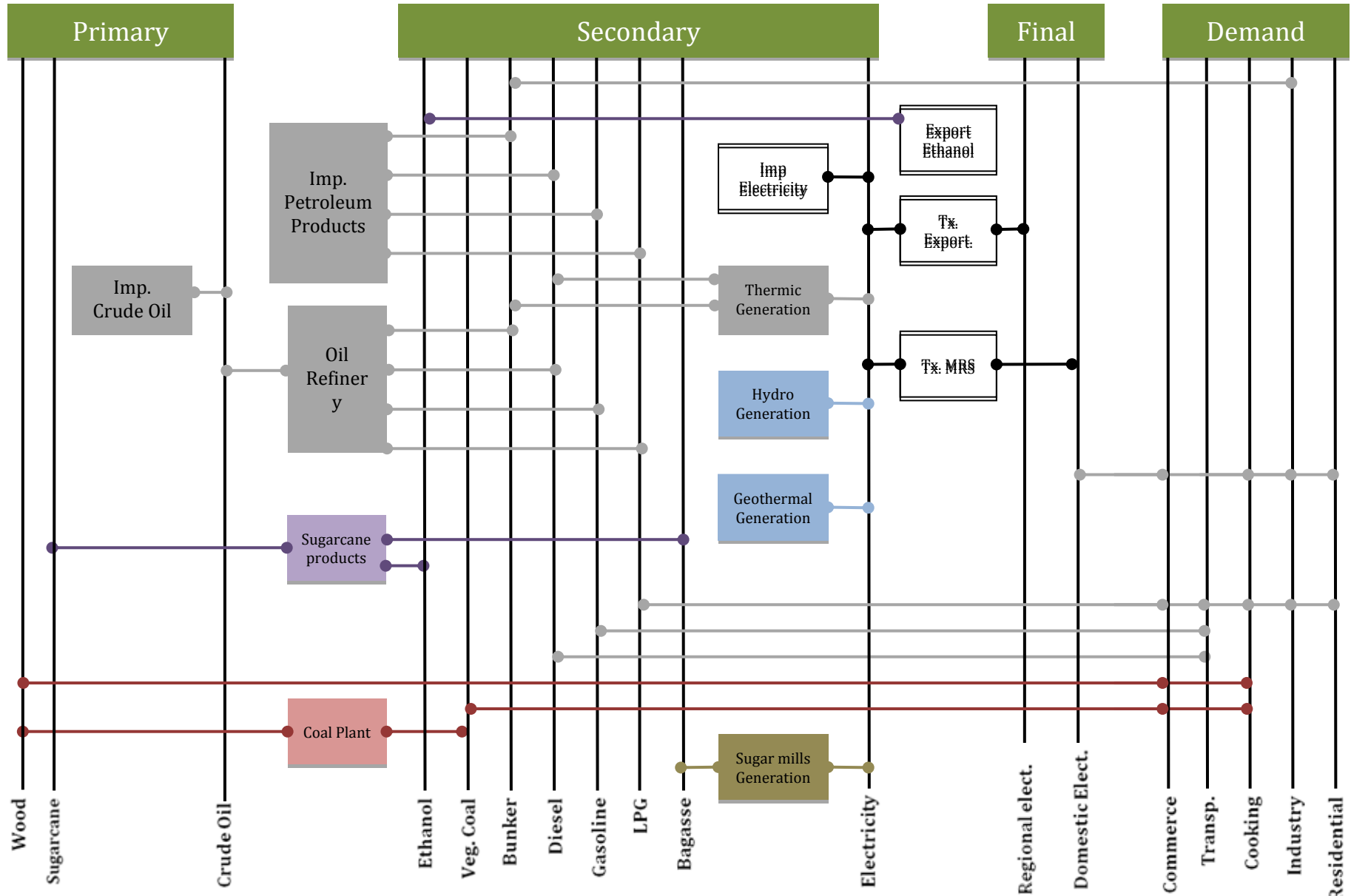
✓ In the LPG market, there are 6 competitors

✓ The hydrocarbons sector is characterized by a free market scheme, with the exception of LPG that has a fixed price for being subject to a focused state subsidy for residential consumption



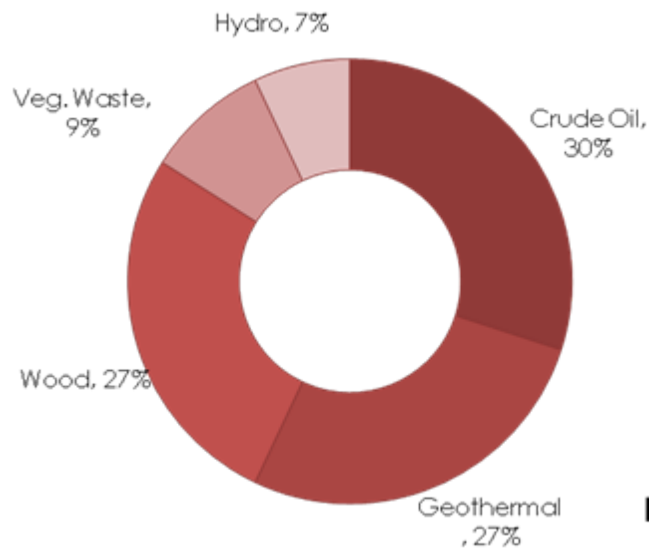
The Energy Sector of El Salvador

Energy Chain

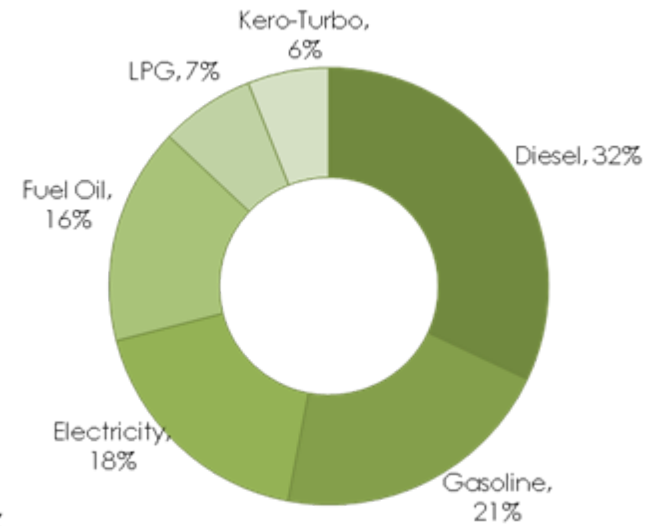


The Energy Sector of El Salvador

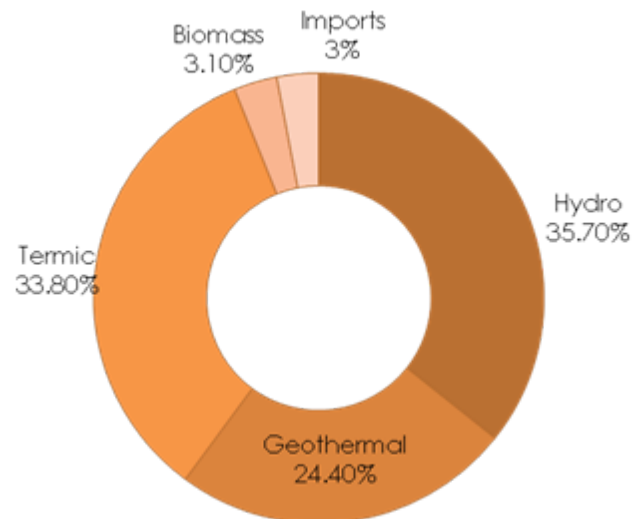
Primary Energy Mix



Secondary Energy Mix



Electricity Generation Mix



The Energy Sector of El Salvador

Energy Policy of El Salvador

- strategic guidelines

- I. Diversification of the energy mix and promotion of renewable energy
- II. Strengthening the institutional framework of the energy sector and user protection
- III. Promotion of a new culture of efficiency and energy savings
- IV. Expansion of coverage and preferential rates
- V. Innovation and technological development
- VI. Regional energy integration



The Energy Sector of El Salvador

Energy Policy: Achievements of each strategic guideline

I. Diversification of the energy mix and promotion of renewable energy:

- Preparation of Master Plan for Development of Renewable Energy
- Modification of the legal framework for the promotion of renewable energies
- Creation of a draft law for biofuels (ethanol and biodiesel)
- Launches of bids for long-term contracts in the electricity supply, giving priority to technologies based on renewable sources.
- Creation of an energy solar map
- Expansion of Berlin Geothermal Power Plant through the Clean Development Mechanism.
- Cogeneration projects using bagasse (Izalco and El Angel) through the Clean Development Mechanism.
- Introduction of ethanol.



The Energy Sector of El Salvador

Energy Policy: Achievements of each strategic guideline

2. Strengthening the institutional framework of the energy sector and user protection

- Long term contracts for electricity generation
- Implementation of the Regulations of Operation Based on Production Costs in the electricity market.
- Reference prices for fuel and diesel in transportation
- Strengthening of the regulatory entities to attend with balance the interest of providers and users
- Strengthening the current regulatory framework with focus on protection of users
- Mechanisms for user protection



Precios de referencia Quincena del 1 de mayo al 14 de mayo de 2012

Zona del país	Diesel		Gasolina Regular		Gasolina Especial	
		Variación		Variación		Variación
Zona Central	\$4.38	-\$0.03	\$4.58	-\$0.14	\$4.85	-\$0.11
Zona Occidental	\$4.39	-\$0.03	\$4.59	-\$0.13	\$4.86	-\$0.11
Zona Oriental	\$4.42	-\$0.03	\$4.63	-\$0.13	\$4.89	-\$0.11

The Energy Sector of El Salvador

Energy Policy: Achievements of each strategic guideline

3. Promotion of a new culture of efficiency and energy savings

- Creation of committees of energy efficiency in all the governmental institutions.
- Implementation of the project PNUD/GEF: Energy Efficiency in Public Buildings
- Project for Energy Efficiency in Public Hospitals.
- Creation of Draft Law for Energy Efficiency
- Implementation of the program “El Salvador saves energy”. Starting with the governmental institutions.
- Studies to manage the electricity demand in El Salvador
- Project Pilot for efficient illumination in the municipality of Santa Ana,
- Participation in the management committee of the Network for Energy Efficiency for Latin America and the Caribe.

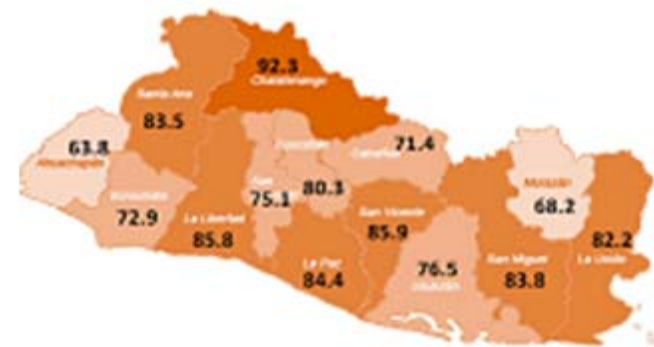
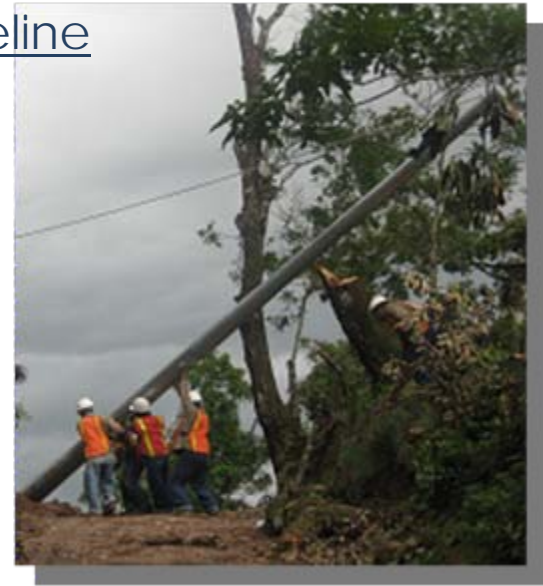


The Energy Sector of El Salvador

Energy Policy: Achievements of each strategic guideline

4. Expansion of coverage and preferential rates

- Rural electrification with photovoltaic energy in the north Salvadoran region, by means of the Millennium Challenge Account
- Subsidy to consumption of electrical energy to low income families
- Total electrification of the 100 poorest municipalities of El Salvador
- National plan of rural electrification
- Subsidy focalization
 - Electric energy
 - Liquefied petroleum gas
 - Transportation



Rural Electrification in % to 2008

The Energy Sector of El Salvador

Energy Policy: Achievements of each strategic guideline

5. Innovation and technological development
 - Regional center of geothermal research
 - Program of research with universities and national research centers
 - Program of research to implement efficient systems of public transportation
 - Installation of laboratories for analysis of biofuel (mostly biodiesel)
 - Proposal to create a credit line to help in the modification of vehicles to use LPG as fuel

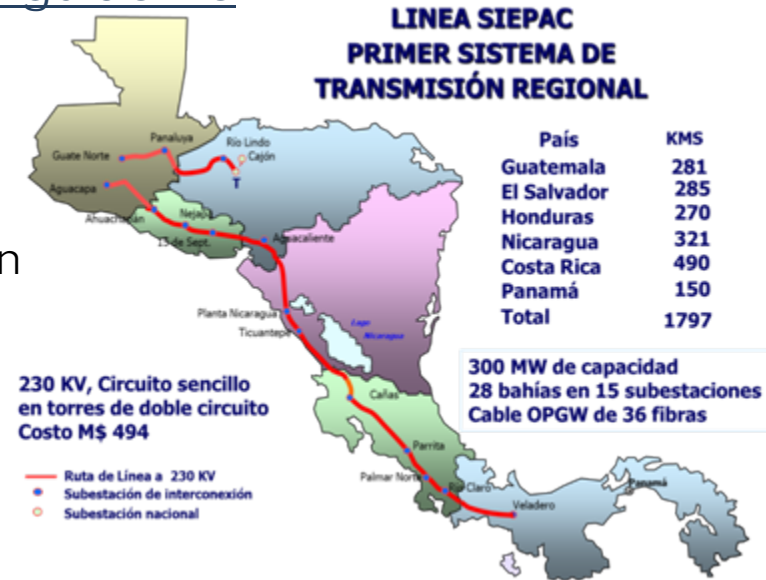


The Energy Sector of El Salvador

Energy Policy: Achievements of each strategic guideline

6. Regional energy integration.

- Regional electricity market
- Program of Mesoamerican energy integration
- Electricity market in Central America
 - Support to SIEPAC project
 - Participation in the definition of the regional market of electricity
- Participation in the regional energy coordination and institutionalism
- Participation in the regional project of natural gas and liquefied petroleum gas
- Participation in Mesoamerican group of biofuels

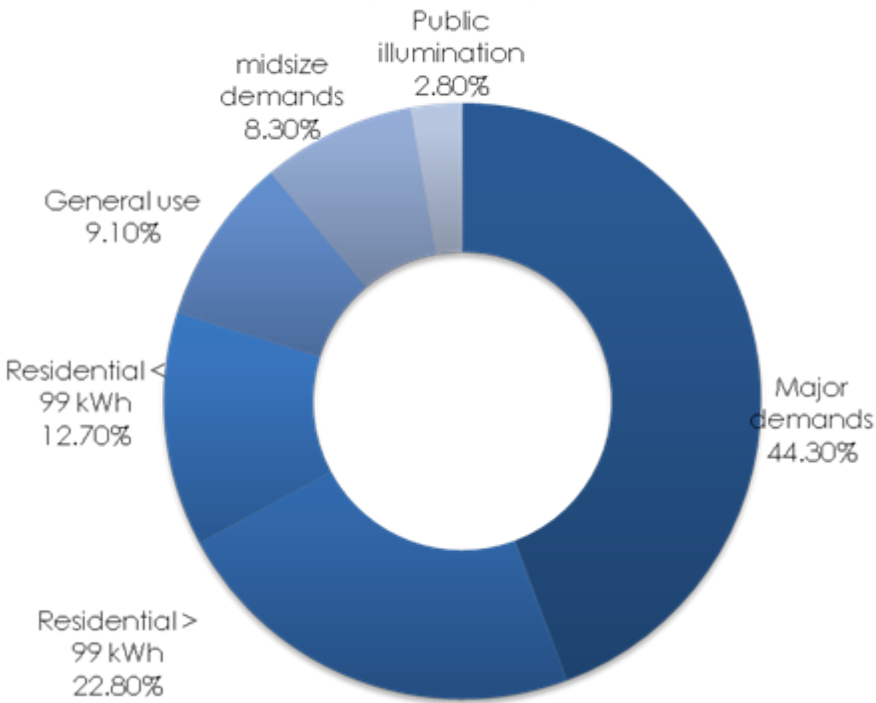




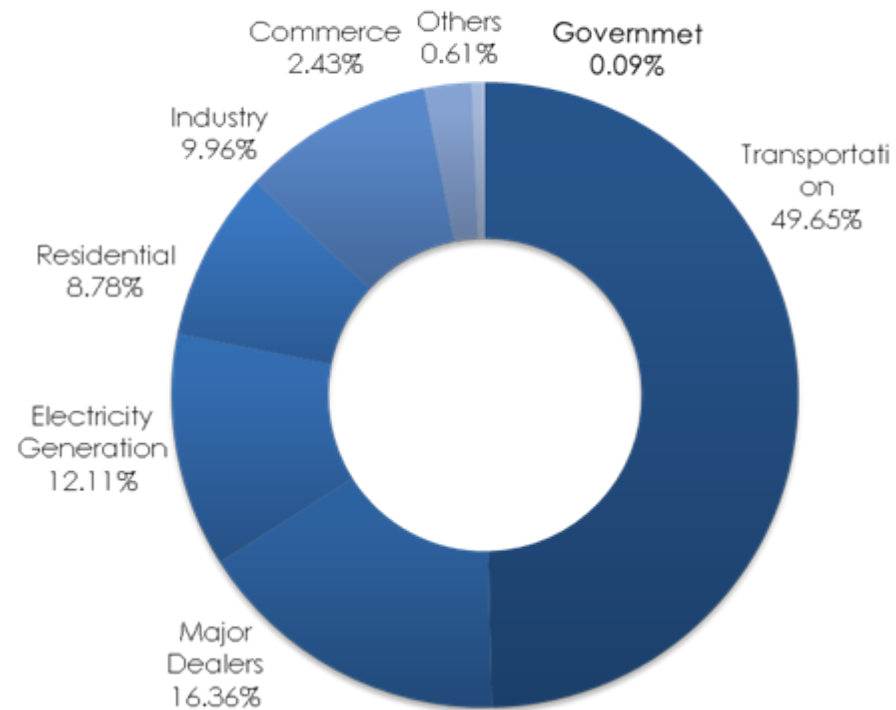
STATISTICS OF ENERGY DEMAND AND SUPPLY

Statistics of energy demand and supply

Energy consumption by sector 2010 (Electricity)



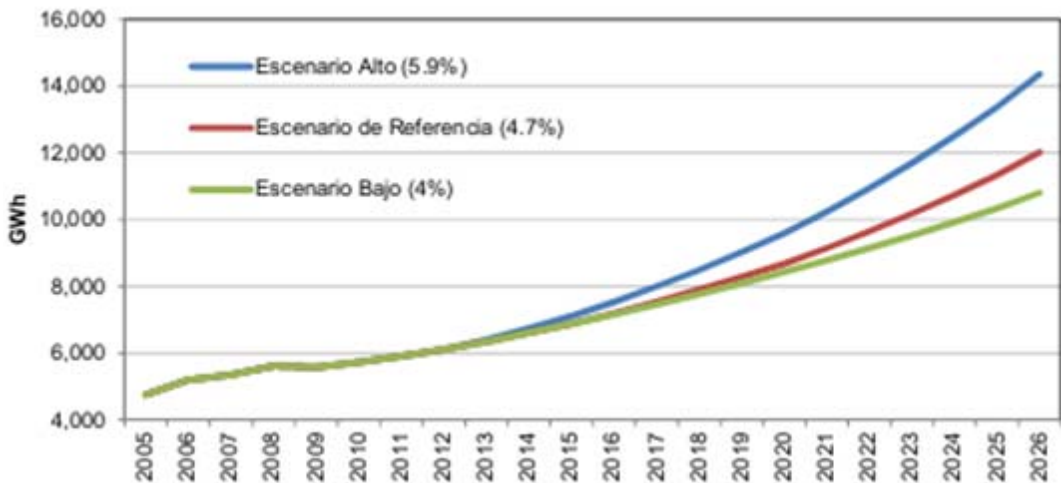
Energy consumption by sector 2011 (Petroleum Products)



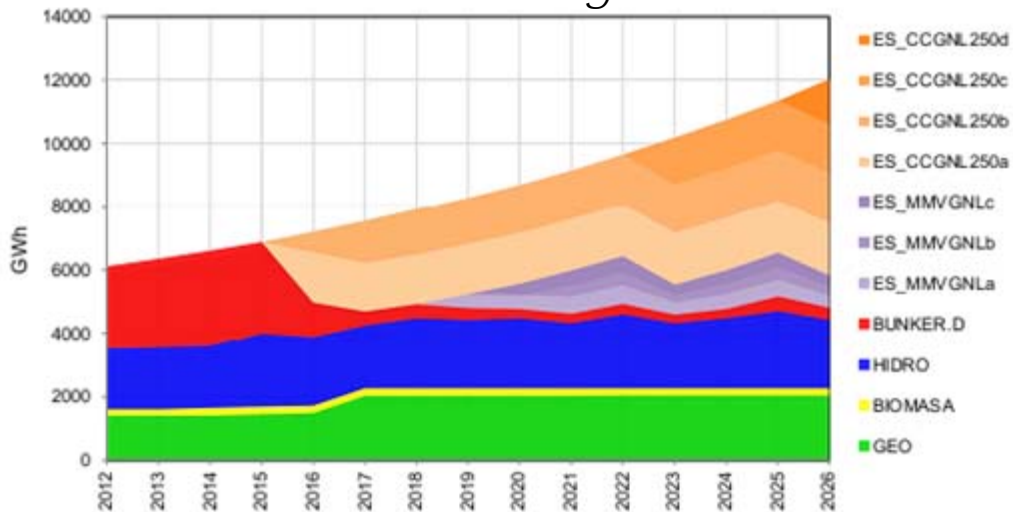
Statistics of energy demand and supply

Outlook of Energy Demand and Supply

Forecast of demand for Electricity



Evolution of the annual generation



Year	Project	Power (MW)
2011	Expansion of El Angel sugarmill	15
2012	Contract Xacbal	30
2013	Expansion of La Cabaña sugarmill	15
2015	hydroelectric plant "El Chaparral"	66
	Geothermal Optimization of Ahuachapan	5
2016	Expansion of hydroelectric plant "5 de noviembre"	80
	Geothermal Berlin, unit 6	5
	Natural Gas Combined Cycle - a	250
2017	Natural Gas Combined Cycle - b	107
	Geothermal plant Chinameca	47
	Geothermal Berlin, unit 5	26
2019	Natural Gas Combined Cycle - b	143
	Medium speed engines for natural gas	100
2020	Medium speed engines for natural gas	100
2021	Medium speed engines for natural gas	100
2023	Natural Gas Combined Cycle - c	250
2026	Natural Gas Combined Cycle - d	250



CHALLENGES IN THE FORMULATION OF THE ENERGY POLICY

challenges in the formulation of the Energy Policy

- For the implementation of the Energy Policy in El Salvador, the biggest challenge is to harmonize the social and environmental issues with the objectives of energy developing.
- Misinformation about the new technologies, such as Natural Gas or Coal Plants for example.
- Political unification for decision process
- Lack of effective monitoring mechanisms for the Energy Policy (measures).
- Lack of a systematic participative mechanism to improve energy policies.

Thank you Questions?



Contact : report@tky.ieej.or.jp