

ENERGY DOSSIER

06 **PANAMA**



Prologue

This publication forms part of a series of monographs produced by the [Energy Division of the Infrastructure and Environment Department](#) of the Vice President of the Research Department at the [Inter-American Development Bank \(IDB\)](#) for regional public good. It is designed to increase the base of knowledge about the characteristics and functions of the Energy Sector in Latin American and Caribbean countries (LAC).

This is the first step in a project that will culminate in books that organize the countries according to the subregions in which the IDB groups the countries of LAC. The purpose of publishing each country separately is to obtain feedback from the descriptive analysis provided by local authorities, academics and the general reading public.

Comments and observations can be sent to the authors via email at: ramones@iadb.org

The sources of information are made explicit and the responsibility for their use and interpretation is exclusive to the authors of this monograph.

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We hope that this contribution to regional knowledge will be useful,

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Introduction

This Energy Report is part of a series that includes all Latin American and Caribbean countries (LAC) that are members of the [Inter-American Development Bank \(IDB\)](#). The publications will be made in sequential order and grouped according to the geographic regions organized by the [IDB](#) in the following order: countries of the Central American Isthmus and the Dominican Republic (CID); countries of the Andes (CAN), countries of the Southern Cone (CSC); countries of the Caribbean (CCB).

The Report on each country has two components: the Energy Flows and the Description of Industrial Organization and Institutional Framework of the energy sector. For both components, the most recent description will be presented first and then the historic development will be discussed.

In the case of Energy flows, the information is gathered from the energy balances that the [International Energy Agency \(IEA\)](#) produces for almost all of the countries in the world. The use of a single source allows comparisons between countries and also a long-term analysis without methodological distortions. Schematic flows derived from this information and are used to describe the energy sector in each country during a specific period.

The most recent “photo” with information from the [IEA](#) is from 2009. Even though it is from a few years ago, we used this matrix in order to ensure consistency among countries. It reflects the current situation because energy matrixes change slowly. What follows is an analysis of the historic evolution of the matrix from 1971 to 2008. It is divided into four periods: 1971-74; 1984-87; 1999-02; and 2005-08.

The reason for using an average of four years as the break between periods is to neutralize the distorting impact that sudden natural, economic and political events could have in a given year. The unit of measurement for the energy flows is thousands of barrels of oil per day (kboe/day), a simple transformation of the unit of measurement used by the [IEA](#), equivalent to tons of oil per year.

For the description of the Industrial Organization and the Regulatory Framework, the work is more complex because they don't have a single source of common information. Even when all the countries are presented under a single descriptive framework, the work of gathering basic information was ad-hoc by country.

In addition to the public information from various agencies and organizations, legal texts, academic publications and press reports are referenced. Beyond a strict description of the sector, this report seeks to link information with the political evolution of a country, which makes the reading more enjoyable and provides a clear picture of institutional changes.

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GUIDE TO ACRONYMS

ACP	Panama Canal Authority
ASEP	National Public Service Authority
CEPAL	Economic Commission for Latin America and the Caribbean
CND	National Dispatch Center
CONAE	National Commission on Energy Savings
EGESA	Electricity Generation Company
ETESA	Electricity Transmission Company
FET	Rate Stabilization Fund
GDP	Gross Domestic Product
GWh	Gigawatt Hour
IEA	International Energy Agency
IRHE	Water Resources and Electrification Institute
kV	Kilovolt
KWh	Kilowatt hour
LPG	Liquefied Petroleum Gas
Mbd	Thousands of barrels per day
Kboe/day	Thousand barrels of oil equivalent per day
MW	Megawatt
OLADE	Latin American Energy Organization
PEO	Primary Energy Offering
PEP	Primary Energy Production
PRD	Revolutionary Democratic Party
Refpan	Panama Refinery
SIN	National Interconnected System
SNE	National Energy Secretary
TEC	Total Energy Consumption
WB	World Bank



Panamá

Panamá is the country with the third smallest geographical area in Central America excluding Mexico. Its area is 74.3 thousand kilometers squared, with a surface area 45% greater than that of Costa Rica. Its gross domestic product (GDP) in current dollars stood at 24.7 billion in 2009 (WB, 2011), making it the third largest economy in Central America (after Mexico and Guatemala). That same year the population reached 3.5 million inhabitants, the lowest in the region, which allowed the GDP per capita to reach US\$7,155, the highest in the region.

This leadership in terms of per capita income is accompanied by the lowest proportion of rural households in the region. 26% of Panamá's population lives in rural areas, and according to national measurements, 32.7%¹ of its inhabitants live below the national poverty line (WB, 2011). In addition, in 2010 Panamá occupied the 54th position of 169 countries on the human development index, sharing the lead with Costa Rica in both indicators. Despite these achievements, OLADE ranks Panamá in fifth place (at the CID regional level) in terms of the level of national electricity coverage, with 87.55% of the households enjoying this service (behind Costa Rica, El Salvador, Mexico and the Dominican Republic).

In relation to the energy sector and in particular the electricity subsector, Panamá has an installed generation capacity of 1,974 MW (CEPAL, 2010), which supply a demand with maximum values of 1,222.4 MW. This capacity comes mainly from thermal generation from diesel and natural gas, which together represent 52.6% of the total of generation infrastructure. Water sources account for the remaining 47.4%. From this capacity, 7,248 GWh of energy were offered, of which 58% originated in the hydropower industry.

In relation to the hydrocarbon subsector, Panamá is a country whose consumption comes entirely from imported derivatives.² The main participants in this market are transport and storage companies and wholesale distributors and fuel marketers. In 2010 total domestic consumption of oil derivatives (liquids, semi-liquids and gases) reached 850 million gallons with a quarterly average of 212 gallons. Of this annual total, 374 million gallons were used by the transportation sector, while 162 million were used in the electricity generation sector.

¹ .Statistic from 2008.

² Statistics from the EIA show that Panamá does not produce or consume natural gas.

Current Energy Sector

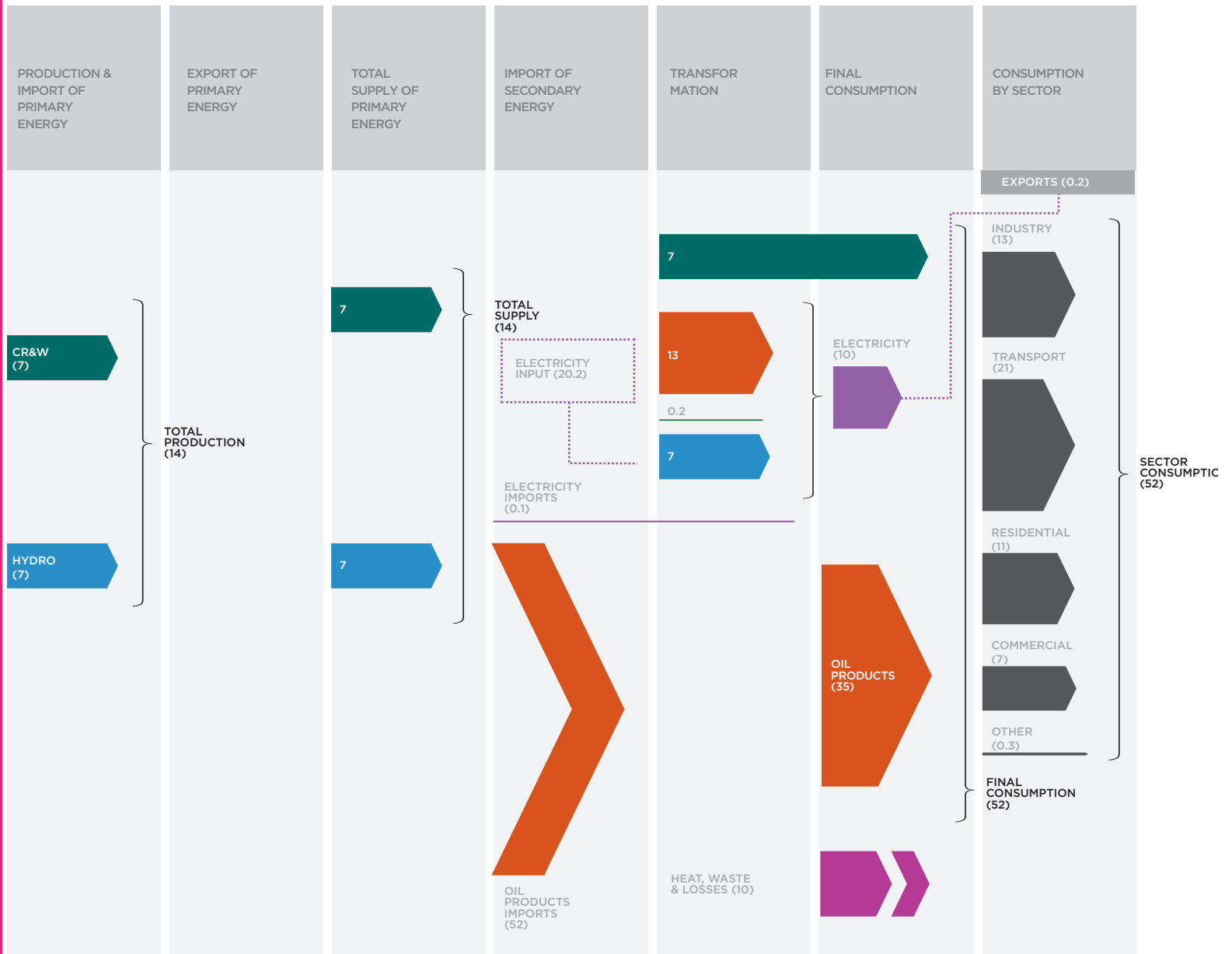


Total Energy Consumption (TEC) in Panama in 2009 totaled 65 kboe/day, which represented an increase of 11.6% over the average TEC between 2005 and 2008. As during that period, the Panamanian economy remained heavily oriented towards the use of liquid fuels that formed close to 85% of the TEC. The rest of Panamanian consumption was composed of hydraulic energy and the use of renewable fuels, mainly firewood in rural areas of the country.

CURRENT

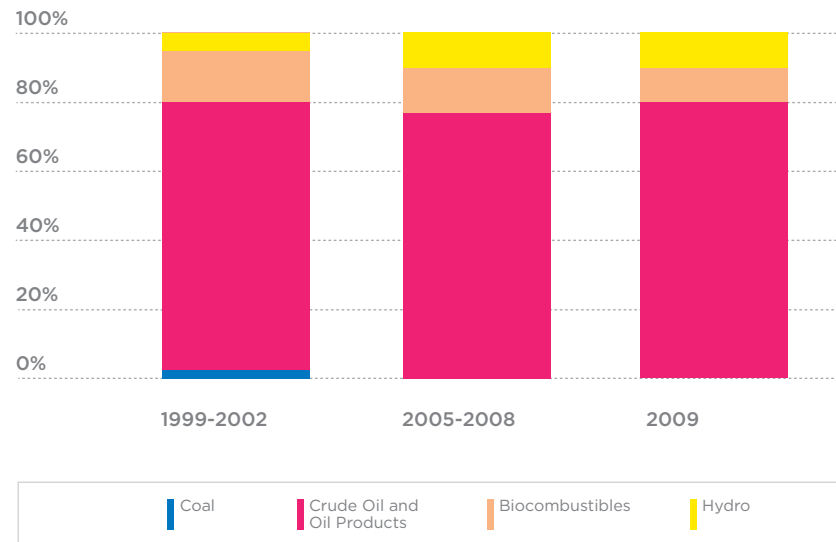
Energy Flow

(kboe/day)



Thus, the Panamanian matrix remained the least diversified in the Central American region. It actually increased its dependence on one energy source, given that liquid fuels increased from 75% to 80% between 2005-08 and 2009. This can be explained by two sets of reasons. First, due to the fall in the contribution of renewable sources, with a drop of 17.5% in the consumption of renewable fuels, and the stagnation in the use of hydropower in electricity generation, which has shown no significant growth between 2005-08 and 2009. Second, the increase in liquid fuels for transportation as the cargo fleet grew, together with the per capita income of the population. It is important to note that, although the Panamanian matrix is highly dependent on liquid fuels, this is not a new pattern. Between 1999 and 2002 78.5% of TEC also came from petroleum derivatives.

TOTAL ENERGY CONSUMPTION



Source: Own Calculations based on IEA Energy World Balances

Domestic production, commercial balance and primary energy offering

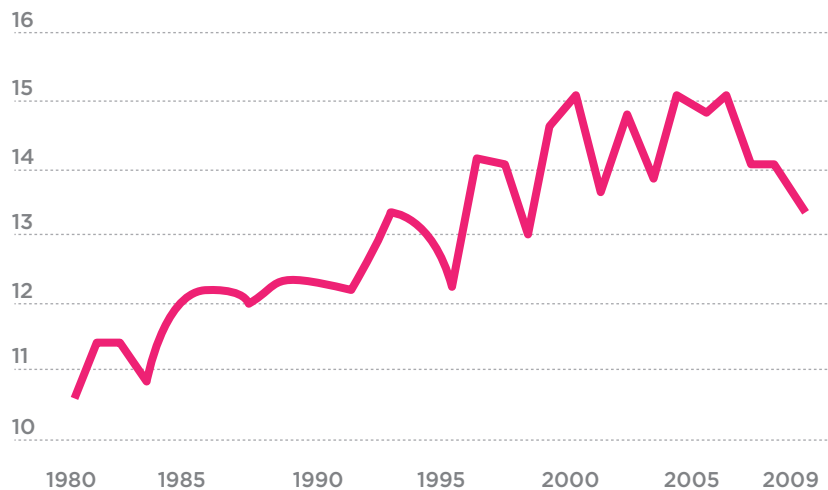
Production

Primary energy production was only hydropower and biofuels. Using the information provided by [OLADE](#), we know that 80% of the 6.6 kboe/day consumed from biofuels were from firewood, with the remaining 20% came from cane products.

Meanwhile, hydropower consumption, totaling 6.7 kboe/day in 2009, was due to the five hydropower plants in the country in 2009. They largest hydropower plant in terms of installed capacity, at that time and today, was the Fortuna plant on the Chiriquí river. This plant is property of the joint venture company [ENEL Fortuna](#) with 300 MW of installed capacity divided in three units, which opened in 1984.

PANAMA: PRIMARY ENERGY PRODUCTION

Thousand barrels of oil equivalent per day (kboe/day)



Source: Own Calculations based on IEA Energy World Balances

The four remaining plants are property of the private company [AES Panama](#), subsidiary of the North American [AES Corporation](#). These plants are Bayano, Estí, La Estrella and Los Valles. Bayano has an installed capacity of 260 MW and is located 80 kilometers east of Panama

City. It was built between 1972 and 1976, and two of its three units opened in 1976, each one with 75 MW of capacity at that time. The third unit opened in 2002 with 86 MW. Between 2002 and 2004 the capacity of the first two units was expanded to 87 MW. The second plant in terms of installed capacity is Estí, with 120 MW in two units that opened in late 2003. It is 400 kilometers west of Panama City. The plant Los Valles, with 54.8 MW in two units, began operating in 1979. Finally, La Estrella has 47.2 MW installed in two units that began operating in 1979. In 2006 and 2007 both plants underwent upgrading processes, increasing their capacity 12 MW each.

Commercial balance of primary energy

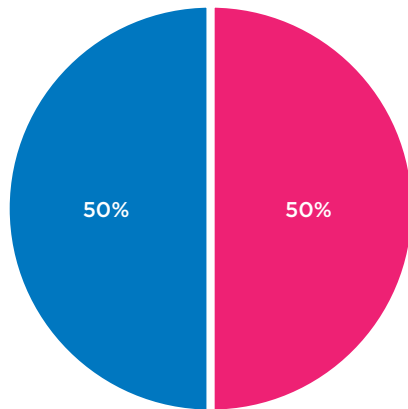
Panama did not export or import primary energy in 2009. Historically, while it maintained the refinery Bahía Las Minas in operation, Panama was a significant importer of crude and exporter of oil derivatives. However, this pattern came to an end with the closing of that refinery in 2002.

Domestic offering of primary energy

With no imports of primary energy, the offering of primary energy (OEP) is equivalent to the production and is divided in almost equal parts between hydropower, with 6.7 kboe/day and biofuels with 6.6 kboe/day. Thanks to improvements in the processes between 2002 and 2007 that were carried out in several hydropower plants in the country, hydropower energy grew from 5 kboe/day to 6.7 kboe/day between 1999 and 2009, a growth of 34%. This process, together with

the urbanization of the country and successful rural electrification programs, explains the fall in production and offering of energy from bio-fuels, which in the same decade decreased 27%.

PRIMARY ENERGY SUPPLY



■ Biocombustibles ■ Hydro

Source: Own Calculations based on IEA Energy World Balances

Electricity

Installed capacity

Installed capacity to generate electricity in Panama totaled 1815 MW and was composed of hydroelectric and thermoelectric plants. The first, described above, totaled almost 880 MW, more than 44% above its total at the beginning of the decade. The thermoelectric plants totaled almost 940 MW, which was 47% above the 635 MW installed in thermoelectric plants in 2000. Installed capacity in Panama grew 45% in the last decade, driven mainly in the second half of the decade by the installation of new thermoelectric plants.

Installed Capacity (MW)	2000	2005	2009
Total Renewables	613	907	879
Hydroelectric	613	907	879
Non-hydroelectric	0	0	0
Thermoelectric	635	716	936
Total	1248	1623	1815

Source: U.S. EIA

Sources of electricity generation

Consumption of electricity generation in 2009 was 20 kboe/day. It was divided between liquid fuels and hydropower. The first source totaled 13.3 kboe/day, 66% of the total. The participation of oil derivatives in generated consumption increased slightly between 2005-08 and 2009, moving from 63% to 66%. However, it was at the expense of hydropower, which accounted for a third of the remaining electricity consumption generated in 2009, with 6.9 kboe/day. As we have seen above, it fell from 6.7 kboe/day and 37% in 2005-08. Renewable fuels also made a small contribution with 0.2 kboe/day to consumption for electricity generation.

Panama	2005-2008		2009	
Inputs to electricity (kboe/day)	18.2	100%	20.2	100%
Oil products	11.5	63%	13.3	66%
Renewables	6.7	37%	6.9	34%

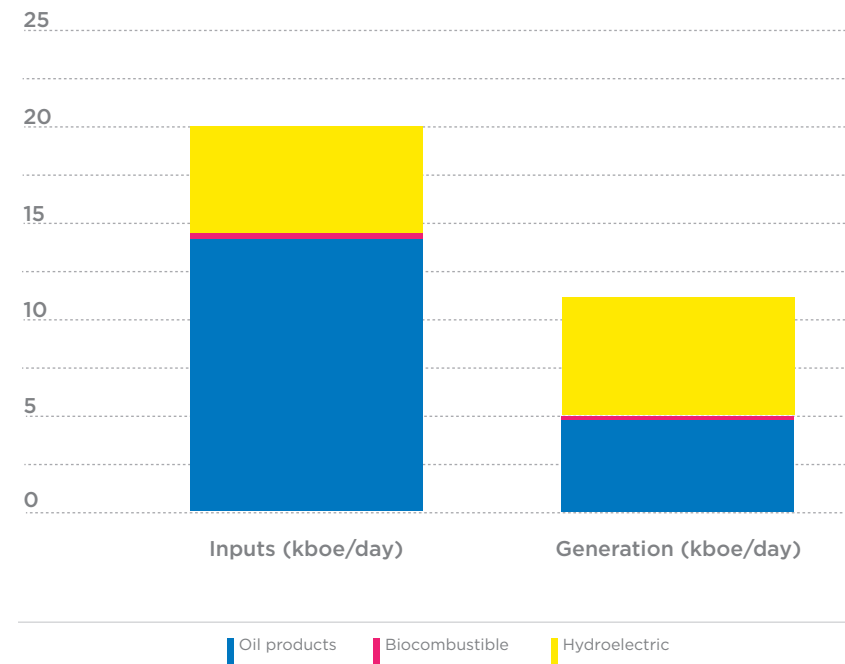
Renovables incluyen energía hidráulica y combustibles renovables
Fuente: Cálculos propios basados en información de la IEA

Generation and distribution matrix

From the consumption of 20.2 kboe/day, Panama used 6,947 GWh of electricity. Thanks to its high rate of efficiency in the generation process, hydropower grew from 34% of input to represent 56% of electricity consumed. Meanwhile liquid fuels were 43.6% of the total generated in 2009.

It is also worth noting that 17 GWh were consumed from biofuels, mainly bagasse and other products derived from sugarcane in the country. This electricity consumption was distributed mainly in the commercial sector, which represented 59% of total electricity consumed in 2009. The residential sector followed with 31% of the total and the industrial - lagging behind - represented 10%.

PANAMA ENERGY MATRIX 2009



Source: Own Calculations based on IEA Energy World Balances

Secondary balance and consumption

Secondary energy balance

By far the most important energy source in the Panamanian economy is liquid fuel imports, which totaled 52 kboe/day, almost four times the total of primary energy offered. These fuels are imported and marketed by private companies that include [Delta](#), [Chevron](#), [Shell](#) and Esso, among others.

It is important to mention that currently there are also storage, transportation and distribution companies of derivative products located in tax-free zones in charge of supplying commercial companies operating in the country with fuel and GLP. The most important of these is [Petroterminal of Panama](#), a mixed capital company that, in addition to managing the most important storage facilities in the country, has a 131 Km pipeline that connects the Pacific and Atlantic coast of Panama.

Final consumption by sector

Final consumption of energy in the Panamanian economy during 2009 totaled 52 kboe/day, composed of derivative products (35 kboe/day), electricity (10 kboe/day) and biofuels (7 kboe/day). These 52 kboe/day were consumed mainly by the transportation sector with 21 kboe/day, composed entirely of liquid fuels. In second place was industrial consumption with 13 kboe/day, 81% of these from derivatives, 11% from renewable fuels and 7.5% from electricity. The residential sector was

in third place, totaling 11 kboe/day. These were divided into 48.9% renewable fuels, 29.8% electricity and 21.2% liquid fuels. Commercial consumption of 7 kboe/day depended 82.3% on electricity with derivative products contributing 17.2% and renewable fuels the last 0.4%. Other sectors, consuming 300 kboe/day used mainly derivative products, 89% of its total and 11% electricity.



Institutional Organization of the Energy Sector

Institutional Structure

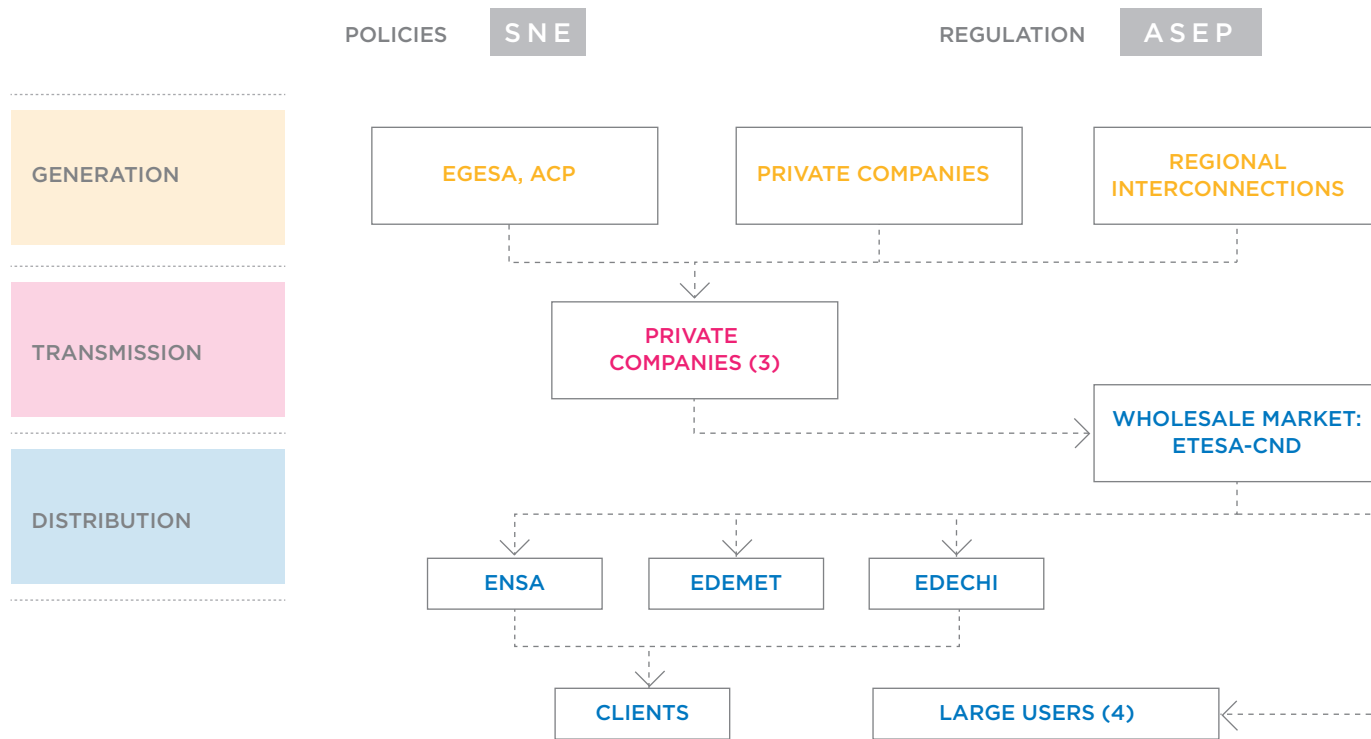
Panama was one of the last countries in the region to carry out a transformation of the energy sector in the 90s. The legislation that allowed the modernization of the sector is reflected in Law No. 6 of 1997, which established the new regulatory and institutional framework for the provision of electricity service. This new structure shifted the state monopoly of the energy sector and permitted the participation of private companies in the sectors of electricity generation and distribution, reversing the nationalization carried out in the 70s.

The current structure of the energy sector keeps the direction of policies in the hands of the executive branch through the [National Energy Secretary \(SNE\)](#) and regulation of the sector is controlled by the [National Public Services Authority \(ASEP\)](#), which, besides ensuring compliance with legislation in the electricity sector, is responsible for legislation related to telecommunications, water delivery and sewage.

In relation to participants in the energy sector, the main public generation companies are the [Electricity Generation Company SA \(EGSA\)](#) and the [Panama Canal Authority \(ACP\)](#), while in the private sector there are around 20 companies. In the transmission sector, the [Electricity Transmission Company SA](#) is the only participant. It exists since the enactment of Law 6 and is the remnant of the Institute of Water and Electrification (IRHE) responsible for managing the state monopoly on the energy sector since 1997. Finally, in the distribution sector, the companies [ENSA](#), Edemet and Edechi coexist. The Panamanian State owns about 40% of the shares of [ENSA](#) while Edemet and Edechi belong to the Spanish group Unión-Fenosa.

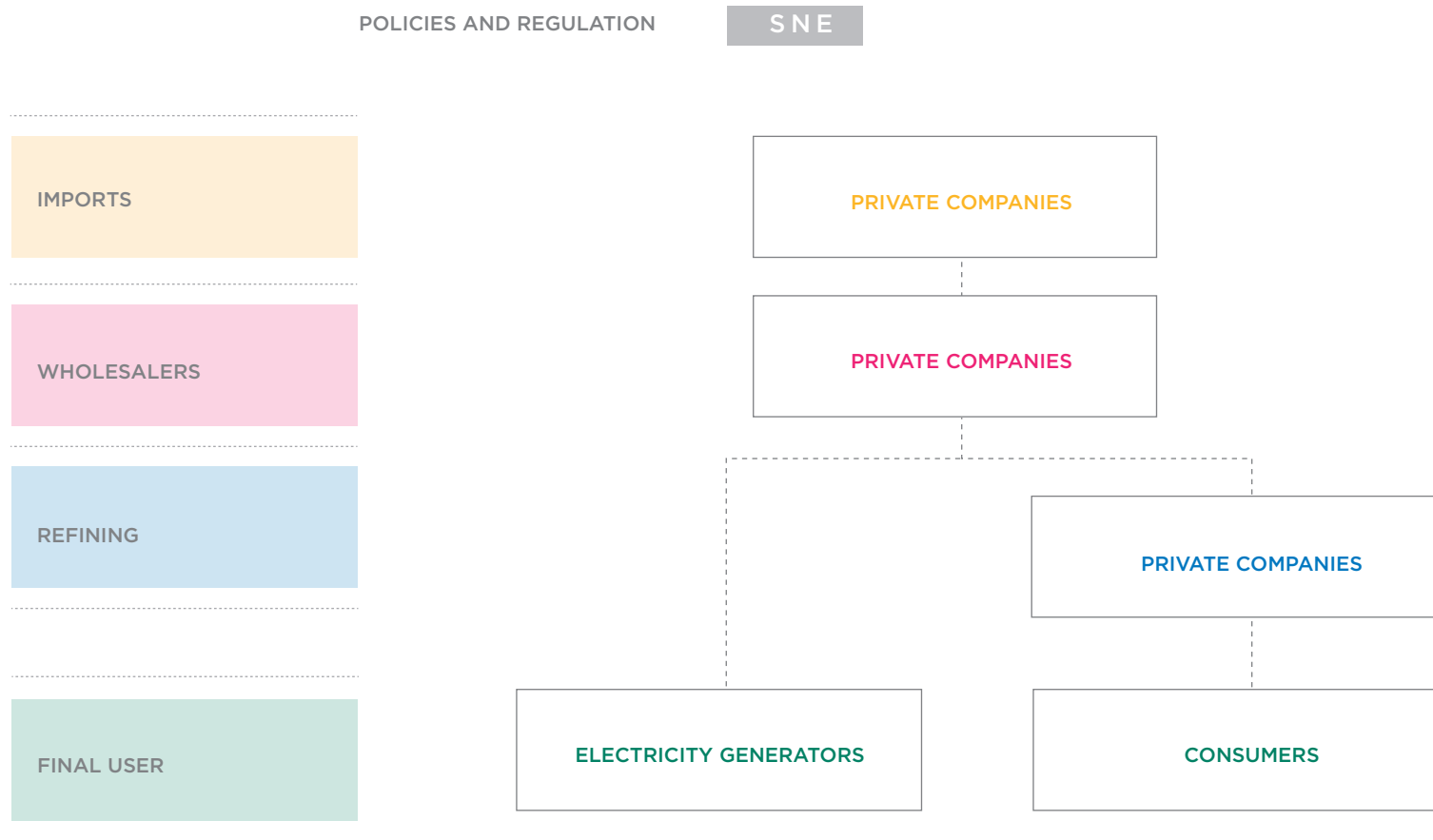
In relation to the hydrocarbon market, there are currently three storage, transportation and distribution companies for derivative products located in tax-free zones. They are responsible for supplying national marketing companies with fuel and GLP. The most important is Petroterminal of Panama, a joint stock company. In addition to managing the most important storage facilities in the country, it has a 131-kilometer oil pipeline that connects the Pacific and Atlantic coasts of Panama.

Electricity Sub-Sector Structure, 2011



Source: Author's work based on information from SNE, ASEP and regulatory framework

Hydrocarbon Sub-Sector Structure, 2011



Source: Author's work based on information from SNE, ASEP and regulatory framework

Formulation of energy sector policies

The [National Energy Secretary \(SNE\)](#), a body under the President of the Republic, is responsible for managing the strategies and policies of the energy sector in Panama. Created in Law 52 on July 30, 2008, the [SNE](#) merged the administrative Energy Policy Commission (of the [Ministry of Economy and Finance](#)) and the Directorate of Hydrocarbons and Alternative Energy of the [Ministry of Commerce and Industry](#) into a single administrative agency.

In 2011 law No. 43¹ reorganized the [National Energy Secretary](#), repealing the creation law of 2008. Therefore, the 2011 law is the instrument that establishes the objectives, the administrative structure and determines the functions and powers of the [National Energy Secretary](#).

The [National Energy Secretary](#) is directed by the Secretary, who is appointed by the executive. The Secretary has the rank of minister. The organization is funded by contributions from the regular budget of the Nation.

Its mission is to lead the country's energy policy within the constitutional framework, to, in accordance with current legislation, "formulate, propose and promote national energy policy with the goal of guaranteeing the security of supply, the rational and efficient use of resources and energy in a sustainable manner according to the national development plan and within economic, competitive, quality and environmental parameters."

¹ Law No. 43 reorganized the National Energy Secretary and dictates other provisions. Signed on April 25, 2011. Publish on April 25, 2011. Gaceta Oficial 26771.

Among the strategic objectives of the executive body are the following:

- Development of a regulatory framework for the sector and the promotion of sector energy.
- Monitoring and analysis of the behavior of the energy sector.
- Research and technological development.
- Promotion of sector plans and policies.
- Administrative responsibilities

The Secretary has an Advisory Board that is made up of six members who are:

- The secretary, who coordinates activities.
- The general manager of the [Electricity Transmission Company, S.A.](#)
- The administrator of the [National Environmental Authority](#).
- The general administrator of the [National Public Services Authority](#).
- A representative of the [National Council on Private Companies](#) who is familiar with matters related to energy competence.

The functions of the Advisory Board are to:

- Serve as an advisory body to the Secretary in all matters within its competence.
- Recommend to the Secretary the study, research and analysis of specific subjects in the various subsectors of the energy sector.

- Make recommendations to the Secretary on all matters that the Council, on its own initiative, deems appropriate.
- Participate in the development of plans and programs in which the Secretary has requested support.
- Assist the Secretary in the coordination, implementation and execution of policies, plans or programs that the Executive Branch establishes on energy matters.

Regulator

The [National Public Services Authority \(ASEP\)](#) is the agency responsible for regulating the electricity sector. Regulation of the hydrocarbon sector is not explicit, and it is possible to find organizations like the [Ministry of Trade and Industry](#), the [Authority for Consumer Protection and Defense of Competition](#) and the [National Energy Secretary](#) carrying out such work. The latter are responsible for ensuring compliance with the regulations governing the import, transportation and distribution of oil and derivatives.

The fee for inspection, monitoring and control is established by public utility companies;

- The amount of inspection fees and other special services requested by public service lending companies will be paid by the following;
- Accepted donations and bequests;
- Assets or rights acquired by any title;

- The fruits and revenues generated by its assets;
- Any other income that comes from special laws or specific contributions.

In the specific case of the electricity subsector, Law 6 establishes that distributors and generators selling to large clients should pay a fee for control, surveillance and investigation that will not exceed the equivalent of 1% of gross revenues from the previous year.

This agency is headed by a general manager appointed by the Executive and ratified by the National Assembly to hold office for a period of seven years. The administrative functions of the Authority are carried out by an executive director named by the administrator, whose position is not subject to removal.

In addition, the [ASEP](#) has a Board of Directors who performs supervisory functions. This council is composed of two Cabinet Ministers, three people to be appointed by the President of the Republic and the Executive Director of the Authority.

It has four national offices: the National Directorate of Electricity, Water and Sanitation, the National Directorate of Telecommunications, the National Directorate of Customer Care and the Directorate of Administration and Finance.

Current legislation establishes the following as the [ASEP's](#) specific functions to:

- Regulate the exercise of activities in the electricity energy sector to ensure:
 - The availability of energy supply following social, economic, environmental and financial viability criteria.
 - Competition to the degree and extent defined by this Law.
- Monitor and control compliance with laws and punish violations.
- Establish general requirements (...) to access and use public service networks for transmission and distribution.
- Establish criteria, methodologies and formulas for setting rates for public electricity utilities in cases where there is no free competition.
- Approve sales rates for public electricity utilities.
- Supervise, monitor and review the implementation of the tariff system.
- Ensure that tariff subsidies are used as required in the corresponding rules.
- Issue specific regulations for self-generation and co-generation of electricity.
- Establish criteria and procedures for guaranteed sales contracts of energy and power between participants in the wholesale market.
- Approve the regulations for the integrated operation of the national interconnected system in order to regulate:
 - The office of contracts.
 - Block power transfers.
- Set standards for service delivery on the part of public electricity utility companies.
- Determine criteria for operational efficiency and service management, developing models to evaluate the performance of providers.
- Issue a regulation on the rights and duties of customers.
- Arbitrate disputes.
- Impose penalties for offenders in the regulatory domain of competence.
- Authorize use, acquisition of property and easements.
- Reduce the maximum demand that defines the large clients only when tariff formulas are approved or when distribution concessions are renewed.
- Issue ideas on the applications of concessions for water use for hydroelectric generation.
- Issue certificates on the net profits of market players

Electricity Sector Institutional Matrix

Generation		Transmission		Distribution	
	Installed Capacity ¹	Company	ETESA		
Hydroelectric	47.3%	Ownership	State	Companies ¹⁰	ENSA (43%) Edemet (44%) Edechi (13%)
Solar & Wind	n/a	Mercado	Market		
Thermoelectric	52.7%				
Geothermal	n/a	Functions ⁷	Manage the integrated network	National coverage	83%
Main State-Owned Company	EGESA (8%) ²	Part. Privados	No	Market	Regional monopoly
Private Participation	Allowed	Pricing policy	Regulated toll ⁸	Private participation	Allowed
Requirements	Minimal				
Registrations	27 plants				
Vertical integration	Not allowed ⁴			Concessions	15 years May be renewed
Fiscal Incentives ⁵		Wholesale Market		Subsidized users	100 kWh per month Max 20% of consumption
(a) Equipment	No export tax	Tasked Unit	ETESA-CND		
(b) Fuels	Compra-venta directa	Task	Integrated management Administer contract dispatch	Pricing policy	Regulated Art. 111-114 Law 6
(c) Small generators	Cert. Reduccion de CO ₂ descontados ISRL	Retailers	n/a		
Pricing politics		Large users	4		
Contracts market	Participants in the wholesale electricity market	Maximum demand ⁹	>100 MV		
Spot market	Price fixed in tendering Demand - Contracts Price = Marginal Cost				
Regulators		Autoridad Nacional de los Servicios Públicos (ASEP)			
Miembros integrantes en la directiva		6			
Appointment process		6			
Financing		Tasa (?1%) de la facturación de Distribuidores y Generadores			

Source: SNE, ECLAC and current legislation.

Electricity subsector

Generation

Panama is a country whose generation depends largely on the private sector. These companies handle 81.5% of the existing generation capacity. The state-owned companies [EGESA](#) and the [Panama Canal Authority \(ACP\)](#) manage the remaining 18.5%. The private sector can participate in this market sector in three ways; (a) acquiring shares in State companies (b) through renewable² concession contracts with terms of 50 years renewable and (c) via generation licenses in the case of non-renewable sources.³

The existing infrastructure for electricity generation in Panama comes mainly from thermal and hydroelectric sources. At the end of 2010 around 47.3% of generation capacity on the national level came from hydroelectric plants and the remaining 52.7% was from thermal sources, diesel and natural gas.

The ownership of these plants could be public, private or mixed. However, currently the number of electricity plants managed by the private sector is dominant. In relation to hydraulic technology, there are a total of 13 plants, nine of which are managed by the private sector and the remaining four by the public sector. Table 1 presents a summary of the distribution of electricity generation capacity in Panama in 2010.

² In the case of hydropower and geothermal generation.

³ The deadlines for licensing contracts are not established by law.

Table 1. Distribution of electricity generation capacity, 2010

Sources	Public	Private	Total
Primary			
Hydro	3.0%	44.3%	47.3%
Geothermal	n/a	n/a	n/a
Wind	n/a	n/a	n/a
Secondary			
Thermal	15.4%	37.2%	52.7%
Total	18.5%	81.5%	100%

Source: ECLAC and own calculations

The generators can sell power to other participants in the market⁴ through the medium and long-term Contracts Market whose final prices are set by interested parties in the bidding process or through the short-term Spot Market that arises from the necessity of supplying a demand not met by the Contracts Market and whose price is set by the marginal cost of the last participating generator.

International generators can participate in the national electricity market by registering previously at the [National Dispatch Center \(CND\)](#). Currently Panama makes commercial electricity trades only with Costa

⁴ Including, for example, the national transmission company ETESA.

Rica. However, there are long-term registered contracts with [Siepac](#)⁵ and there is an interconnection project with Colombia.

In terms of incentives for the development of new generation projects, hydroelectric companies have tax exemptions on the import of equipment for their plants, while thermoelectric generation companies have exemption from import duties on fuels used. The legislation also considers the small generators and those generation companies with a capacity less than 10MW, offering them some additional tax incentives.

After the privatization of the Institute of Water and Electrification (IRHE), in force until the enactment of Law 6 in 1997, the Wholesale Electricity Market of Panama was created. It was where producers and consumers (distributors and large clients) carried out commercial transactions of the sale and purchase of energy and power.

The wholesale market, including the Contracts Market and the Second Hand Market is the place where producers (generators, self-generators, co-generators and international interconnections) and consumers (distributors, large clients and exporters) carry out their commercial transactions of the purchase and sale of energy and/or power.

These business transactions are carried out in two ways. One is through the contract market, where the prices of power and energy are set by participating agents, and the other is the spot market where hourly transactions are carried out that allow consideration for surpluses and shortages that arise in the office, the contractual commitments and temporary changes in energy supply and demand.

⁵ Dates and details not specified. See http://www.eprsiepac.com/contratos_siepac_transmision_costa_rica.htm

In summary:

- Contracts Market:
- Mid and long-term transactions.
- [ETESA](#) bids on supply contracts for distributors.
- Price set by the bidding process.
- Agents must have contracted 100% of the power required to meet the peak demand for the next year.

Spot market:

Used to cover the difference between system demand and existing contracts. The variable generation cost of the last required unit determines the spot price.

Transmission

The state-owned [ETESA](#) has a monopoly on transmission activity in Panama. Among its roles is planning the expansion, operation and maintenance of the National Interconnected System (SIN). Network access is free for generators and distributors who have complied with safety standards.

[ETESA](#) charges a toll for the use of the networks whose value is regulated and set by [ASEP](#). The toll charged is reflected in the composition of the final rate and includes the following charges: cost per use of the transmission network, cost for the service of integrated operation ([ETESA-CND](#)) and the costs of energy losses in transmission networks.

ETESA, unlike other existing transmission companies in the region, can fill the intermediary role of purchasing energy in blocks (contract market).

According to current law, it has the following specific functions:

- Provision of transmission service for high voltage electricity in a non-discriminatory way at your own risk.
- Expansion planning, building expansion and reinforcement of the transmission network. To prepare the Plan for Expansion, Generation and Transmission for the National Interconnected System.
- To plan and operate the National Interconnected System (SIN) efficiently and reliably from the National Dispatch Center.
- To perform the basic studies necessary to identify development options for hydroelectric and geothermal plants
- To expand, operate, maintain and provide services related to the national hydrometeorology network

The **National Dispatch Center (CND)** is an agency attached to the **ETESA** that aims to realize integrated system operation and therefore acts as administrator to the wholesale electricity market.

Distribution

As for the distribution sector, there are three electricity distribution companies in Panama; **ENSA**, Edemet and Edechi whose participation in the market is 43%, 44% and 13% respectively. The State of Panama has a participation of 49% in the first of those while Edemet and Ede-

chi are property of the Spanish group Unión-Fenosa. These companies operate as regional monopolies in the country.

Distribution companies can contract energy supply through a process of free competition (public bidding) directly with the generators or can use **ETESA** as an intermediary.

These companies cannot participate in generation projects where they supply more than 15% of the demand within their concession area or have control of more than 50% of the number of total customers on the national market.⁶

The concession contracts of these companies were established in 1998 for a period of 15 years, with the potential to be renewed. Therefore, in 2013 negotiations were carried out between Aresep and interested companies.

The legislation establishes that all rates to final clients will be regulated including a subsidy⁷ for consumers with a demand of less than 100KWh per month.

In addition, licensees, who are required by law to provide the service of supplying electricity, are responsible for making necessary investments to construct, extend and improve the supply according to the increase in demand in their respective concession areas.

⁶ Art. 94 Law 6.

⁷ The maximum subsidy is 20% of consumption and the funds come from the national budget.

Hydrocarbon Sector Institutional Matrix, 2011

Import		Retail	
Private participation	Allowed	Pricing policy	Regulated. Maximum sales prices to the public are established. Participants compete with prices under the maximum.
Market share	100%		
Fiscal incentives	Free zones for fuels		
Imports by products			
Oil products		Gasoline, diesel and other products	
Percentage of total imports (2011)	89.7%	Total service stations	404
Participating companies (share 2011)	Chevron-Texaco (83.3%) Puma (10.1%) Petroterminales (6%)	Companies (number of service stations)	Delta (182) Chevron-Texaco (50) Petrolera Nacional 76%) Puma (41) Others (55)
LPG		LPG	
Percentage of total imports (2011)	10.3%	Distributors	Petroport Chevron-Texaco Other private companies
Participating companies (share 2011)	Petroport (62,9%) Chevron-Texaco (37.1%)		
Regulators		Secretaría Nacional de Energia	
Appointment process		Open appointment by the President of the Republic	
Financing		Nation's ordinary budget	

Source: SNE, ECLAC and current legislation

Hydrocarbon subsector

Panama is a country that does not produce hydrocarbons, and therefore its consumption comes from the import of crude and its derivatives.⁸ The main participants in this market are wholesale transportation and storage companies and fuel distribution/marketing companies.

Currently, there are three storage, transportation and distribution companies for derivative products, and they are located in tax-free zones. They are responsible for supplying fuel and GLP marketing to companies that operate in the country.

The most important is [Petroterminal of Panama](#), a joint venture capital company that, in addition to managing the most important storage facilities in the country⁹ has a 131 kilometer oil pipeline that connects the Pacific and Atlantic coasts of Panama.

In terms of prices, the [SNE](#) sets import equality prices for all fuels that are consumed in the country. The final price for the consumer is calculated by adding the marketing margins (transport, distributor margin and dealer margin) and tax for fuel consumption to his price. The costs of storage and transportation are not regulated.

On the other hand, the [SNE](#) sets a maximum sale price to the public for gasoline and diesel, and it offers a GLP consumption subsidy.¹⁰

⁸ EIA statistics show that Panama does not produce or consume natural gas.

⁹ It can store up to 5.8 million barrels.

¹⁰ Subsidy in the prices to the final consumer of a 25-pound tank of liquid gas.

Historic Development of the Energy Sector



Evolution of the Energy Matrix 1971 - 2008



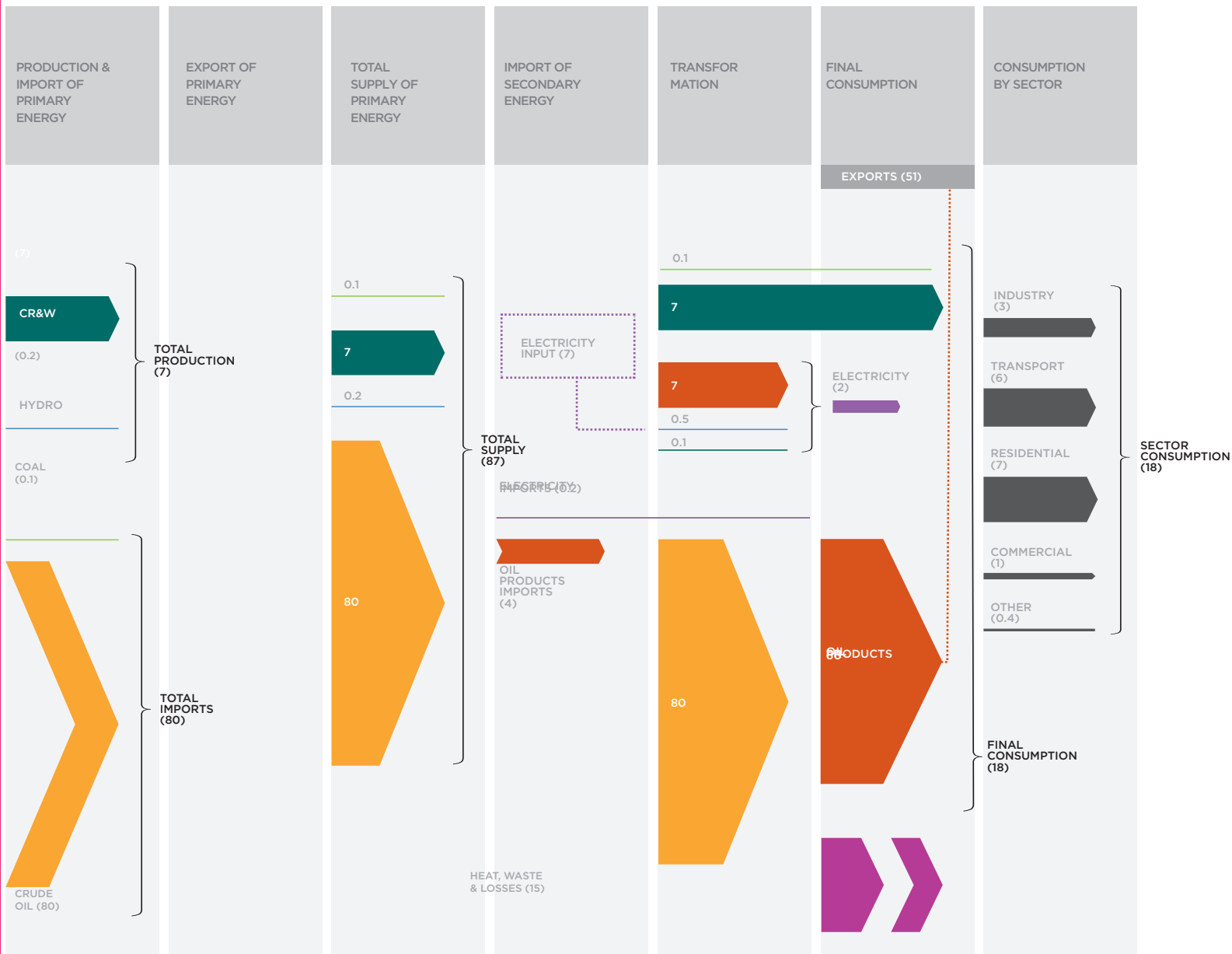
1971-1974

At the beginning of the 70s Panama depended on the import of crude oil to supply two thirds of its energy consumption, and it refined almost all of this supply. The second energy source was firewood, accompanied by the use of other biofuels. Small quantities of hydropower and coal were also consumed.

1971-1974

Energy Flow

(kboe/day)



Total Energy Consumption

The Panamanian economy was clearly oriented to crude oil and its derivatives during this period. Energy consumption reached 40,000 barrels of petroleum equivalent, mainly composed of the use of derivative products and biofuels. 80,000 barrels of crude oil per day were imported, and they were refined in the Bahía Las Minas plant. It opened in 1962 and was, at that time, property of Texaco. From the refining, 60 kboe/day of derivative products were produced, of which 10 kboe/day were consumed domestically and the remaining 50 kboe/day were exported.

On the other hand, Panama consumed 6.8 kboe/day of biofuels with 80% of this consumption of biofuels, according to [OLADE](#), from the consumption of firewood. Finally, there was a small amount of hydro-power use. This total reached 0.2 kboe/day, mainly from the hydroelectric plant La Yeguada. It opened in 1967 with 6 MW of installed capacity, and it expanded to 7 MW in 1973.

Electricity

Given that imported and refined crude oil is by far the most important energy source in the country, electricity generation depends almost entirely on derivative products. Of the 6.8 kboe/day that were consumed to generate electricity, 6.6 kboe/day were from liquid fuels, 97% of the total, with hydrogeneration contributing 2.4% and biofuels the remaining 0.6%. This consumption generated 1,071 GWh, 91% from liquid fuels and 9% from hydrogeneration.

Source	Inputs (kboe/day)	%	Electricity consumption (GWh)	Electricity consumption (kboe/day)	%
Oil products	6.63	97.0%	974	1.42	91%
Hydro	0.16	2.4%	93.5	0.14	9%
Biocombustibles	0.04	0.6%	3.5	0.01	0%
Total	6.84	100%	1,071.00	1.56	100%

Source: Own Calculations based on IEA Energy World Balances

Final Consumption by Sector

The Panamanian economy during this period divided its consumption in three sectors with similar proportions. The residential sector, with 39% of the total, reached 6.8 kboe/day using 81% from biofuels (mainly wood in rural areas), 11% liquids and almost 8% from electricity. It was followed by the industrial sector with 34% - 6 kboe/day - of which 61% were liquid fuels and 30% biofuels. The energy use of transportation was 20% of the total and was composed entirely of liquid fuels.

Consumption by sectors	Industry	Transport	Residential	Commercial	Others
Coal	2.7	0	0	0	0
Oil products	60.9	100	11.2	9.7	72.5
Biocombustibles	30.4	0	81.0	0	0
Electricity	6.0	0	7.8	90.3	27.5
Total	100%	100%	100%	100%	100%

Source: Own Calculations based on IEA Energy World Balances

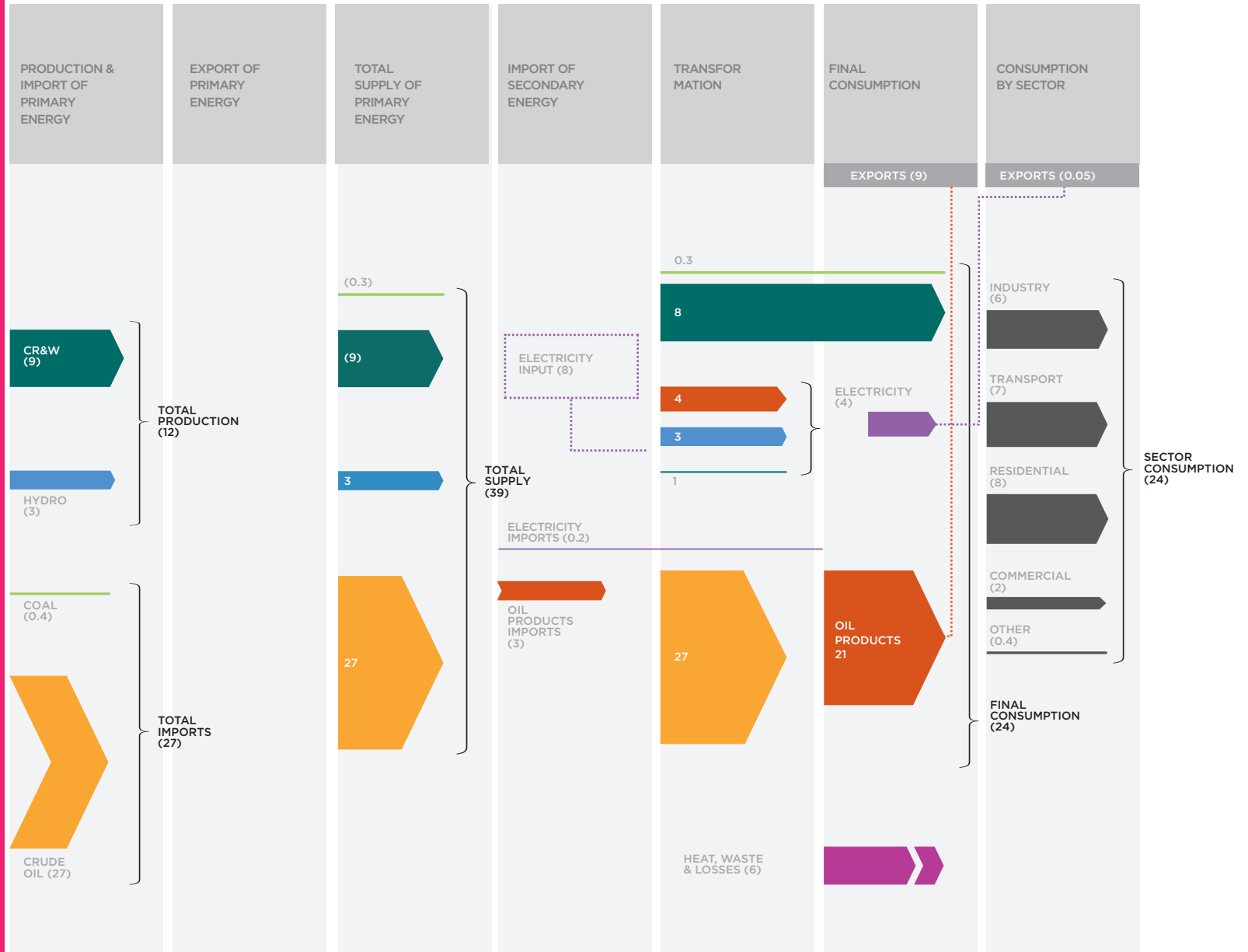


1984-1987

In the 10 years between this analytical period and the previous one, Panama drastically reduced its crude oil imports. In addition, in 1986 it suffered an oil spill on the coast of the Bahía Las Minas refinery, which impacted the supply of crude in the country. Panama expanded its production related to hydropower and quadrupled its coal imports.

Energy Flow 1984-1987

(kboe/day)



Total Energy Consumption

In part due to the reduction in crude imports and refining in the country and due to the 1986 spill, total energy consumption on annual average fell 16% and stood at 34,000 barrels of equivalent per day between 1984 and 1987. Crude continued to be the most important energy source for consumption, but 66% less than before with 27 mbd. Imports of products fell 20% in the decade between these two periods. Thus, 12 kboe/day of derivatives were consumed and 9 kboe/day were exported.

Final consumption of products thus remained at 12 kboe/day between 1984 and 1987. On the other hand, the consumption of hydropower experienced a surge from 0.2 kboe/day to 3.3 kboe/day thanks mainly to the 1984 opening of Fortune hydroelectric plant. It had 300 MW

of installed capacity and is still the largest hydroelectric plant in the country today. In addition to taking advantage of hydropower, other hydroelectric plants opened: Bayano in 1976, with two units of 75 MW capacity each; La Estrella in 1979 with two units that had 20 MW capacity; and Los Valles in 1979 with two units that had 25 MW of capacity at that time.

Electricity

With the installation of hydroelectric centers, this resource became 41% of the consumption of electricity generation, with liquid fuels contributing 50% and biofuels 9%. This consumption of 7.87 kboe/day generated 2,472.25 GWh of electricity, of which 76% were from hydraulic energy, 21% from liquid fuels and 2% from biofuels. Thus electricity consumption doubled in the decade between the periods described.

Source	Inputs (kboe/day)	%	Electricity consumption (GWh)	Electricity consumption (kboe/day)	%
Oil products	3.93	50%	525.75	0.73	21%
Hydro	3.26	41%	1887.25	2.64	76%
Biocombustibles	0.68	9%	59.25	0.08	2%
Total	7.87	100%	2,472.25	3.45	100%

Source: Own Calculations based on IEA Energy World Balances

Final Consumption by Sector

While it is true that total consumption decreased during this period, final consumption – taking into account energy system losses – increased 38% over the previous period, reaching 24 kboe/day. Of these, 33% were for residential use, composed 75% of biofuels, 13% of electricity; 30% of transportation consumption, composed entirely of liquid fuels; and 26% of industrial consumption, of which 58% were liquid fuels and 30% biofuels.

Consumption by sectors	Industry	Transport	Residential	Commercial	Others
Coal	4.6	0	0	0	0
Oil products	58.3	100	11.7	19.3	47.3
Biocombustibles	29.7	0	75.5	0	0
Electricity	7.3	0	12.8	80.7	52.7
Total	100%	100%	100%	100%	100%

Source: Own Calculations based on IEA Energy World Balances



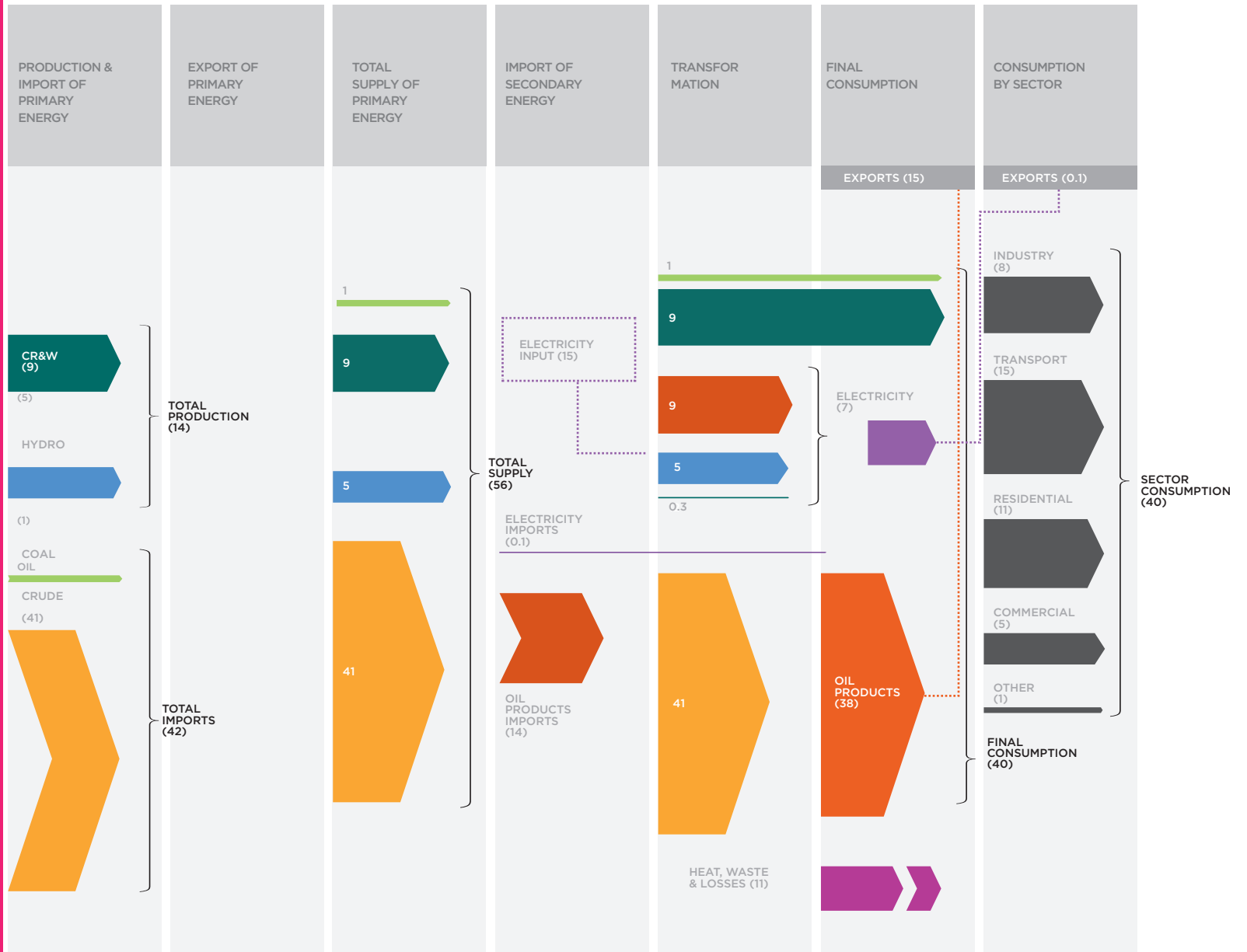
1999-2002

The main point to note is that from the mid-eighties to the turn of the century there is a resurgence in crude imports. While they don't reach the levels seen at the beginning of our analysis in the 70s, these imports are 50% higher than the totals in the mid-eighties.

1999-2002

Energy Flow

(kboe/day)



Total Energy Consumption

Thanks to the growth in crude oil consumption in the Panamanian economy, the country consumed 64% more energy during this period than the previous one, reaching 56 kboe/day. Of this total, the 27,000 barrels of crude oil processed daily in the country explain 41%. This refined crude and the 14 kboe/day of imported derivative products translate into 38 kboe/day of liquid fuels, of which 15 kboe/day were exported. Consumption of other energy sources also increased. With the incorporation of the Gatún and Madden hydroelectric plants, property of the Panama Canal Authority, and taking better advantage of resources at Fortuna, Bayano and Los Valles, consumption of hydropower grew 65%, reaching 5.4 kboe/day during the period.

Electricity

Consumption of electricity generation stayed focused mainly on liquid fuels and water resources. Of the almost 15 kboe/day supplied to generation, 61% came from derivatives and 37% from hydropower. The remaining 2% came from biofuel use. From this consumption, 4,971 GWh were generated and used by the Panamanian economy between 1999 and 2002. This generation was 63% from hydrogeneration, with a total of 3,110.75 GWh, and 37% from derivative products, which totaled 1,836.75 GWh.

Source	Inputs (kboe/day)	%	Electricity consumption (GWh)	Electricity consumption (kboe/day)	%
Oil products	8.93	61%	1836.75	2.44	37%
Hydro	5.37	37%	3110.75	4.13	63%
Biocombustibles	0.27	2%	23.5	0.03	0%
Electricity	14.57	100%	4,971.00	6.61	100%

Source: Own Calculations based on IEA Energy World Balances

Final Consumption by Sector

Analyzed by sectors, consumption totaled almost 40 kboe/day - a growth of 64% over the total at the end of the 80s. During this period the composition of energy use and transportation consumption changed - entirely composed of derivatives - and became the greatest in the country with 15 kboe/day and 39% of the total. The residential sector, two thirds integrated by biofuels, dropped from first to second place with 11 kboe/day - 28% of the total - and grew 40% in absolute terms over the 1984-1987 average. Industrial use of energy reached almost 8 kboe/day, 19% of the total, making use of 61% liquid fuels, 19% biofuels, 10% electricity and 9% coal.

Consumption by sectors	Industry	Transport	Residential	Commercial	Others
Coal	9.3	0	0	0	0
Oil products	60.9	100	16.1	19.7	97.0
Biocombustibles	19.4	0	66.0	0.8	0
Electricity	10.4	0	17.9	79.5	3.0
Total	100%	100%	100%	100%	100%

Source: Own Calculations based on IEA Energy World Balances

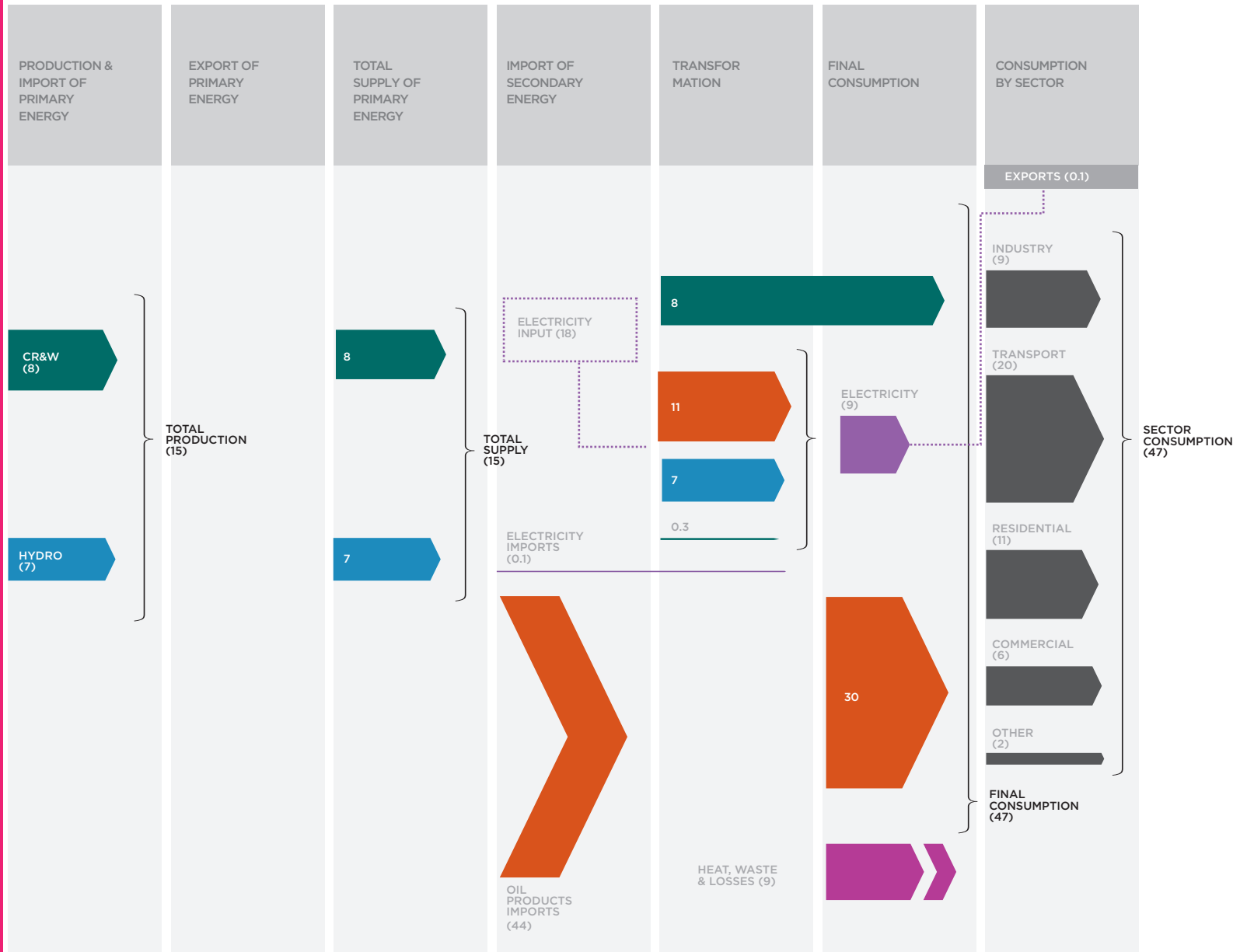


2005-2008

The main point to note during this period is that in 2002 Panama closes the refinery that had allowed it to stand out as an importer of crude oil and exporter of products to the Caribbean basin. Panama increased its imports of derivative products to the detriment of the import of crude to be refined and stopped exporting liquid fuels. It also stopped importing coal and, at the same time, increased its consumption of energy from water resources.

Energy Flow 2005-2008

(kboe/day)



Total Energy Consumption

From the changes described above, total energy consumption for this period stood at 58 kboe/day, which represented a growth of 4% over the previous period. Consumption of imported derivative products was by far the greatest during this period, totaling 75% of the total with nearly 44 kboe/day. The second energy source in the country continued to be biofuels, with 8 kboe/day – 13% less than the total during the previous period – and 14% of total consumption.

Hydropower consumption was 20% greater during this period with 6.5 kboe/day, thanks in large part to the opening of the hydroelectric plant Estí with 120 MW of installed capacity in two generator units in the northern province of Chiriquí. It also expanded its installed capacity in units 1 and 2 in the hydroelectric plant Bayano in 2002 and 2004 to 86 MW and improved the generation units at La Estrella and Los Valles in 2006 and 2007, thus increasing the hydroelectric generation capacity in the country.

Electricity

The consumption pattern for electricity generation remained stable between the previous period and this one. While consumption increased from 9 to 11.5 kboe/day, the share of each source remained practically equal. Liquid fuels comprised 63% of consumption, hydropower 35% and biofuels 2%. The composition of electricity generated also remained stable in terms of sources. Of the 6,180.5 GWh generated, 60% were from hydropower and almost 40% were from liquid fuels.

Source	Inputs (kboe/day)	%	Electricity consumption (GWh)	Electricity consumption (kboe/day)	%
Oil products	11.47	63%	2424.25	3.47	39%
Hydro	6.45	35%	3735.75	5.35	60%
Biocombustibles	0.29	2%	20.5	0.03	0%
Total	18.21	100%	6,180.50	8.86	100%

Source: Own Calculations based on IEA Energy World Balances

Final Consumption by Sector

Final consumption during this period grew 18%, totaling almost 47 kboe/day and consumption patterns experienced slight changes. Transportation consumption, all from derivatives, grew 29% to represent 42% of final consumption with almost 20 kboe/day. Residential consumption, with a slight drop, was 23% of the total with a little less than 11 kboe/day, of which 66% was biofuels, 18% electricity and 16% derivatives. Industrial consumption – 61% liquids, 20% biofuels, 10% electricity and 10% coal – reached 9 kboe/day, 18% of final consumption. Finally, the residential sector, 80% electricity, had 6.3 kboe/day, thus representing 13% of final consumption by sector.

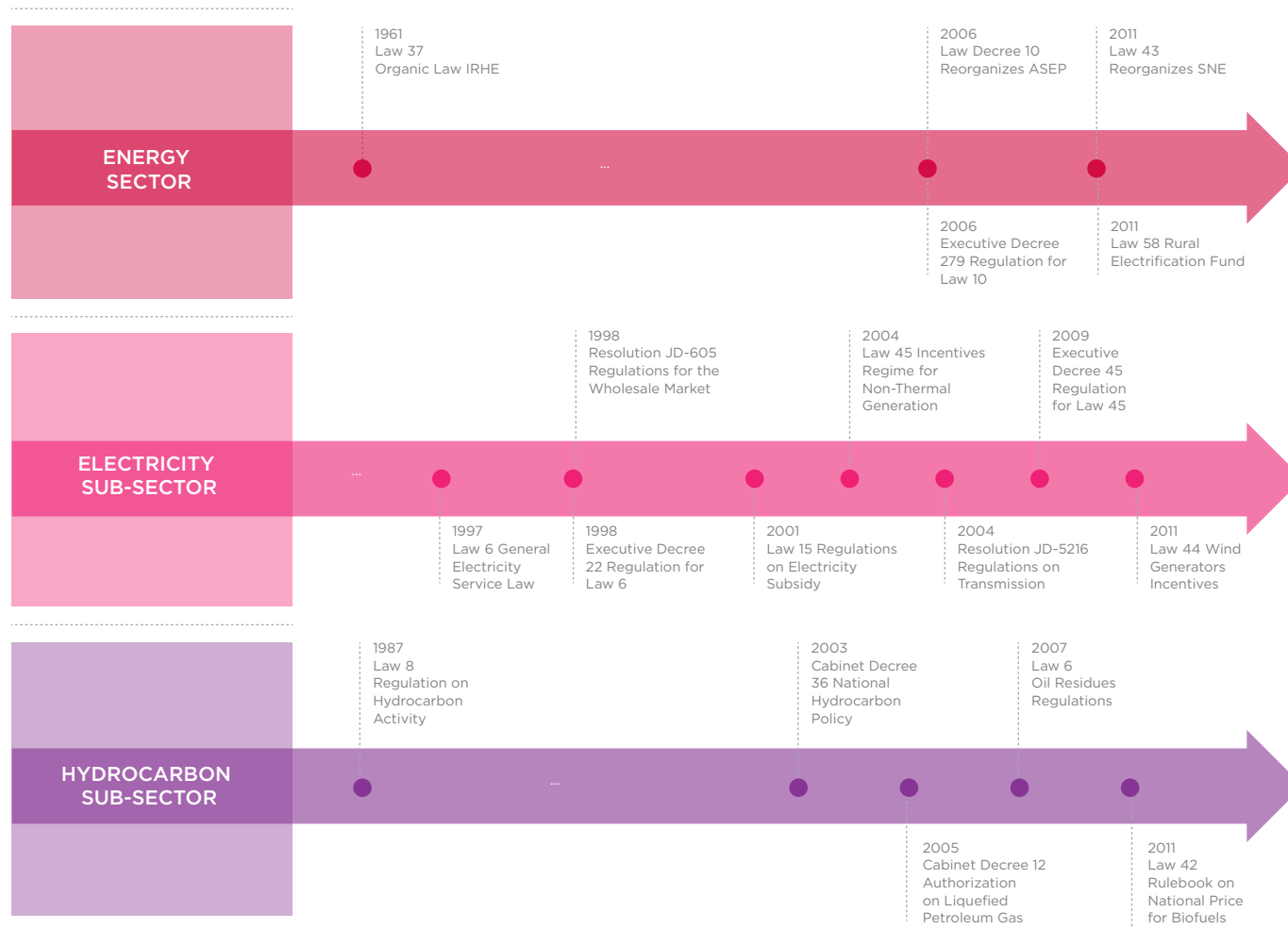
Consumption by sectors	Industry	Transport	Residential	Commercial	Others
Oil products	71.8	100	20.6	13.7	96.8
Biocombustibles	19.8	0	54.5	0.2	0
Electricity	8.4	0	24.9	86.1	3.2
Total	100%	100%	100%	100%	100%

Source: Own Calculations based on IEA Energy World Balances



Institutional Development of the Energy Sector

Evolution of the Regulatory Framework for the Energy Sector, Electricity Sub-Sector and Hydrocarbon Sub-sector



Source: Author's work

Main reforms

In 1957, the military junta that had ruled Honduras for 14 months since the end of 1956 created the Company. The current configuration of Panama's energy sector is outlined in three main legislative instruments. In the electricity subsector the main instrument is law No. 6 called the Regulatory and Institutional Framework for the Provision of Public Electricity Service (framework law). In the hydrocarbon subsector there are two key legislative instruments: one is Law No. 8 enacted in 1987 and known as the Hydrocarbon Law¹ and the other is Cabinet Degree No. 36 from 2003.²

The 1997 electricity subsector framework law involved an important change in the structure of the sector given that, among other measures, it dismantled the Institute of Water Resources and Electrification (IRHE),³ which during more than 36 years was the main actor in the Panamanian electricity sector.

In its creation, the responsibility of the IRHE over the electricity market was limited to “study, design, construct, operate and administrate electricity generation, transmission and distribution systems”⁴ and had a marginal presence in the electricity market, which was dominated at that time by private companies. However, under the military junta that had governed Panama for 21 years since 1968, the influence of the institute in the electricity sector grew.

1 Law No. 8 regulates activities related to hydrocarbons. Signed on June 16, 1987. Published on July 1, 1987. Gaceta Oficial 20834.

2 Cabinet Decree No. 36 establishes national hydrocarbon policy in the Republic of Panama and other measures. Enacted on September 17, 2003. Published on September 22, 2003. Gaceta Oficial 24892.

3 Law 37, which created the Institute of Water Resources and Electrification as an autonomous entity of the State. Signed January 31, 1961. Published on February 22, 1961. Gaceta Oficial 14335.

4 Article 4, section

In 1969 decree⁵ 235 was signed which assigned the IRHE regulatory and policy design functions for the electricity sector. Later, in 1972, decree⁶ 109 was signed which nationalized the assets of the North American Panamanian Power and Light Company (the main electricity company in the country), displacing the IRHE. Finally, in 1973 the government issued law 66⁷ which authorized the State to forcefully acquire all the assets of public service electricity companies. This law opened the door for the IRHE to take control of a series of companies,⁸ which allowed it to take monopoly control of all the activities of the electricity sector.

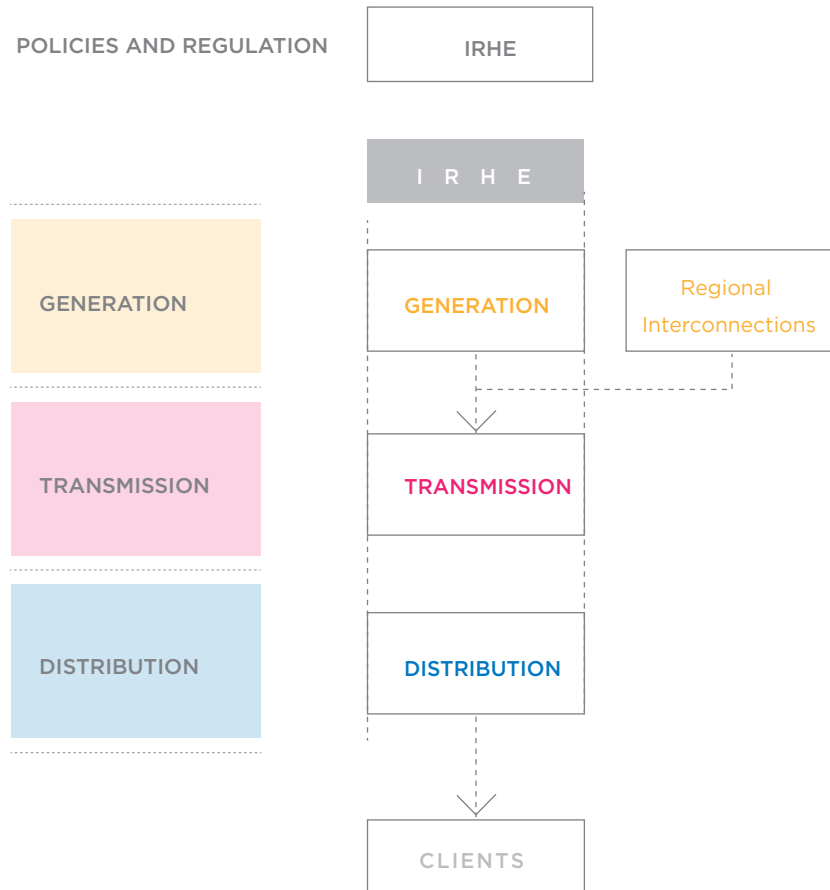
5 Cabinet Decree 235 which is subrogated in law No. 37 of January 1961, essential to the institute of water resources and electrification. Signed on July 30, 1969. Published on August 19, 1969. Gaceta Oficial 16427.

6 Decree 109, which is provisionally about the Panamanian Power and Light Company. Signed on May 31, 1972. Published on June 8, 1972. Gaceta Oficial 17116.

7 Law 66, which modified articles 22, 51 and 53 of decree law No. 31 on September 27, 1958 (which enacted provisions on the electricity industry). Signed on August 22, 1973. Published on August 30, 1973. Gaceta Oficial 17421.

8 The government nationalized: Empresas Eléctricas de Chiriquí in 1973, Hidroeléctrica de El Valle in 1976 and La Chorrera and Bocas del Toro, both in 1978.

Figure 1: Electricity sub-sector structure, 1990



Source: Author's work based on information from SNE, IRHE, ASEP and regulatory framework

In the hydrocarbon subsector, however, there was no presence of state companies. At the beginning of the 90s, the almost monopoly on import, production and wholesale of derivative products was Texaco, which had operated the Panama Refinery S.A. (Refpan) since 1951, the only refinery in the country. In retail distribution there were other private companies that maintained service stations.

According to the 1987 hydrocarbon law, the organization in charge of sector policies was the Minister of Trade and Industry through the General Directorate of Hydrocarbons (DGH). Prices for the entire supply chain were regulated by the Office of Price Regulation (ORP) which was created in 1969⁹ as a special agency, given that it did not depend on any ministry.

During 1990, Texaco's refining operation allowed it to supply 82% of the gasoline consumed in the country and practically 100% of the diesel and fuel oil. In addition, it imported products to satisfy the total demand when production was insufficient. For example, during this same year, 83% of national liquid gas consumption was imported.¹⁰

⁹ Cabinet Decree No. 60 which created a special agency called the office of price regulation and repealed law 19 on February 14, 1952 and law 94 on December 28, 1961. Signed on March 7, 1969. Published on March 13, 1969. Gaceta Oficial 16318.

¹⁰ Economic Commission for Latin America and the Caribbean (CEPAL). Central American Isthmus. Statistics on Hydrocarbons. 1998.

Policy transition and oil liberalization

From 1972 to 1985 the installed generation capacity of the IRHE grew almost four times, moving from 226.5 MW to 860.5 MW, mainly due to investments in hydroelectric plants. However, starting in the second half of the 80s, IRHE finances were deteriorating, which slowed down investments. In fact, in the 12 years from 1985 to 1997, installed capacity only grew 14.3%.¹¹

A reflection of the crisis, evident since the mid-80s, was the 1987 emergency decree enacted by Manuel Noriega's government.¹² The decree sought to reduce electricity demand and was mainly due to a drought in the rivers feeding power plants. The legal instrument reduced the work day by an hour and restricted the work period to between 6am and 6pm. Similarly, it reduced the work day in the public sector to six-and-a-half hours.

The electricity crisis occurred at the same time as other important changes in the political situation in the country. On December 20, 1989 the invasion of Panama by the United States occurred in which General Manuel Noriega, the head of the military government, was deposed and captured. This military invasion ended the military regime that had ruled the country since 1968.

One day before the invasion, President Guillermo Endara, who won the elections of May 1989 but had not been recognized by the military re-

gime, was sworn in. Endara's government was characterized by measures directed at promoting a market economy. His plan called "National Strategy to Develop and Modernize the Economy: Policies for Recovery, Sustainable Growth and Job Creation," known also as "Plan Ford" (for the name of Vice President Guillermo Ford) initiated the liberalization process in many sectors of the economy.

The most important energy sector reform was the liberalization of the oil derivative products market. This reform materialized in 1992 with the enactment of decree No. 29¹³ and Resolution No. 329 of the Office of Price Regulation.

Decree 29 restructured the whole market of import and production of oil derivative products to create oil free zones, which generally meant a series of tax benefits to companies in the sector. Complementing this restructuring, the Office of Price Regulation¹⁴ passed resolution 329, which, according to

Acodeco,¹⁵ "annulled all existing resolutions regulating prices and rates for the transport of petroleum products and completely freed the margins of retailers and distributors."¹⁶

¹¹ Statistics from OLADE.

¹² Executive Decree 14, which called for the adoption of temporary employment measures given the national emergency caused by the lack of electricity. Signed and published on March 27, 1987. Gaceta Oficial 20769.

¹³ Decree No. 29, which established liberalization policies and other measures in the oil market in the republic of Panama. Signed on July 14, 1992. Published on July 22, 1992. Gaceta Oficial 22083.

¹⁴ The Office of Price Regulation was eliminated in 1996 through law 29 which created the Commission on Free Competition and Consumer Affairs. In 2013 the institution becomes known as the Authority for Consumer Protection and Defense of Competition (ACODECO).

¹⁵ The Office of Price Regulation was eliminated in 1996 through law 29 which created the Commission on Free Competition and Consumer Affairs. In 2013 the institution becomes known as the Authority for Consumer Protection and Defense of Competition (ACODECO).

¹⁶ Agreement No. -PC 386-02. Commission on Free Competition and Consumer Affairs. August 5, 2002.

The liberalization decree, which was a key instrument in the 1992 reform, included changes to several aspects of the hydrocarbon market. The main changes include:

- The creation of “Oil Free Zones”. These areas are territorial extensions defined by executive power. In them, authorized companies could carry out activities related to the hydrocarbon market free from taxes, duties and fees. For example, the import and sale of fuel to boats that crossed the canal and didn't pay any type of taxes.
- Allowed the import of petroleum derivative products to all natural and legal persons.

Created the “protection fee” that was an extra tariff on imported products produced in refineries in the country.¹⁷

- Companies interested in operating in oil free zones only needed a permit issued by the [Directorate of Hydrocarbons of the Ministry of Commerce and Industry](#).
- It established that the fuel entering the domestic market must come from oil free zones.
- Between 1992 and 1993 three amendments were made to decree No. 29 that defined some aspects of its implementation. In May 1993 the regulation of oil free zones was published.¹⁸

¹⁷ In practical terms this reform reduced the tax advantage that benefited products refined in the country given that it reduced the import tariff from 70% to 20% with an annual reduction of 1% starting in 1992 for the next 15 years that would reach 5%.

¹⁸ Executive Decree No. 26 regulates cabinet decree No. 29 of July 14, 1992, as amended by cabinet decree No. 38 on September 9, 1992 by cabinet decree No. 4 on February 3, 1993 and by cabinet decree No. 14 on April 7, 1993. Signed on May 6, 1993. Published on May 18, 1993. Gaceta Oficial 22287.

The process of liberalization and specifically the creation of oil free zones sought to promote the participation of the private sector in the production and import of oil derivative products. It effectively achieved this goal. Since 1992, it has created 10 oil free zones, which have increased the number of market participants. The first of these zones was granted to [Texaco](#) as defined in contract-law No. 35, which made the area of the refinery an oil free zone in 1992.¹⁹

There were no major changes in the electricity market, although it continued to show problems that had emerged in the 80s. In fact, in 1992, the Endara government had to enact emergency measures similar to those imposed in 1987 due to insufficient electricity.²⁰

Significant electricity sector reforms

In the 1994 elections Ernesto Pérez Balladares wins, the candidate for the Democratic Revolutionary Party (PRD). His government plan was called “Public Policies for Integral Development: Social Development with Economic Efficiency,” better known as the “Chapman Plan” since its main proponent was the minister of economy, Guillermo Chapman. The Chapman Plan, which maintained the previous government's approach to promoting the development of a market economy in the country, made explicit the necessity to restructure and privatize some public utility companies, among those the IRHE. International organizations such as the [Inter-American Development Bank \(IDB\)](#) and the [World Bank](#) participated in the process.

¹⁹ Law No. 31, which is approved in Contract No. 35 celebrated between the State and the society called Panama Refinery S.A. Signed on December 31, 1992. Published January 6, 1993. Gaceta Oficial 22198.

²⁰ Executive Decree No. 21 which adopts temporary employment measures given the national emergency caused by a lack of electricity. Signed on April 8, 1992. Published on April 9, 1992. Gaceta Oficial 22011.

Changes in the electricity sector began with the enactment in 1995 of resolution 245²¹ which approved the “Electricity Sector Reform Program.” This program stipulated the following guidelines:

- To prepare sector functions:
 - Formulation and coordination of policies, Executive Body.
 - Regulation of the sector, independent and autonomous entity.
 - Provision of services, private, public and joint venture companies.
- To establish clear rules for sector activities.
- Creation of a regulatory body.

It also included six basic elements that new organizations in the sector should consider:

- A wholesale market with competitive prices among actors.
- Access of private generators to the transmission and distribution networks of the IRHE.
- Independent development of small generation projects by the private sector
- Development of private projects for co-generation, for auto-consumption, sales to large consumers and marginal sales to the interconnected system
- Rules for energy transactions by international interconnections
- Regulation of rates to final users.

21 Cabinet Resolution. By which policy guidelines are approved for the implementation of reforms to develop the provision of supply services for drinking water and sanitation in the electricity sector, ports and telecommunications. Signed on August 16, 1995. Published on August 25, 1995. Gaceta Oficial 22855.

In January 1996 the creation of the Regulatory Body for Public Services (ERSP)²²is signed through law 26.²³This law did not define the powers of the new agency over the electricity sector given that it left the definition up to the specific legislation of each sector. Thus, it wasn't until 1997 that the Framework Law defined all the characteristics of regulation in the electricity sector.

Resolution 245 estimated that the approval of the Framework Law by the Legislative Assembly would occur in February 1996. However, the adoption of Law 6²⁴ took a year longer and was published in February 1997. The Framework Law repealed the main laws that had governed the sector since 1958, so its enactment meant a radical restructuring of the electricity subsector. The following are among the most significant contributions of Law 6:

- Role of the State in the electricity subsector: Limited its intervention activities to only regulation, policy formation, the transmission network and addressing areas not served. It specifically established that one of the tasks of the State is to guarantee free competition in electricity sector activities.
- Policy formulation: It created the Commission for Energy Policy to define policies for the whole energy sector. This commission was under the Ministry of Planning and Energy Policy.
- Regulator: Extensive regulatory and sanctioning powers were granted to the ERSP. They included setting prices,

22 Public services are defined in the law as: supply of drinking water, sewage, telecommunications and electricity.

23 Law No. 26, which creates the regulatory body of public services. Signed on January 29, 1996. Published on January 30, 1996. Gaceta Oficial 22962.

24 Law No. 6, which sets the regulatory and institutional framework for providing public electricity service. Signed on February 3, 1997. Published on February 5, 1997. Gaceta Oficial 23220.

granting concessions and licenses to private operators and the mandate to regulate all matters related to the operation of the national interconnected system.

- Actors in the sector: It created the agency of Providers of Public Service Electricity which included public electricity utility companies, auto-generators and co-generators, the municipalities that decided to provide public electricity service, cooperatives and other similar organizations and entities that in that moment were providing some electricity service.
- State electricity companies: It excluded state electricity companies from the application of previous laws that obligated them to ask for approval of the Executive for contracts. This gave them greater autonomy. In addition, it established the organizational structure of these companies.
- Transmission: Created the Transmission Company under State ownership and controlled 100% of the shares of the transmission network.
- Private participation: Established the privatization of state electricity companies, allowing the sale of more than 51% of the shares of thermoelectric generation and distribution companies and up to 49% of the shares (formed of joint ventures) of hydroelectric generation companies. It also established that 100% of the transmission company would remain in the hands of the state.
- Concessions: Established the regulatory framework for granting concessions for hydroelectric and geothermal electric installations and for transmission and distribution projects. The validity of these concessions is set at a maximum of 50 years for the generation installations, 25 years

for the transmission companies and 15 years for the distribution companies.

- Licenses: Established the potential to award licenses for all the various generation activities that require concession.
- Vertical integration: Eliminated the vertical integration of companies in the electricity sector. Distribution companies were the only ones exempt from this regulation, but they could only participate in generation if they did not represent more than 15% of the demand in their concession area.
- Generation: Established that no private company could directly or indirectly control more than 25% of the energy demanded in the national market.
- Load Dispatch: left the responsibility for the load dispatch in hands of the [National Dispatch Center \(CDN\)](#), which was a unit within the Transmission Company.
- International interconnections: Allowed market agents to participate in international electricity markets. These transactions were exempt from all taxes and import and export taxes.
- Distribution: Prohibits the same distribution company from receiving concessions in additional distribution areas if this addition allows it to serve more than 50% of the clients on the national market.
- Rural electrification: Created the Office of Rural Electrification to promote electrification in rural areas not served, not given concessions and unprofitable.
- Prices and rates: It established that the ERSP would be responsible for setting rates for the services of transmission, distribution, sales to regulated clients and integrated operation, leaving market rates charged on the wholesale

market to be freely determined.

- Subsidies: Established a restriction in which a subsidy to final clients could not exceed 20% of the cost of service.
- Renewable energy: Forced distribution companies to give a bidding preference of up to 5% of the price to generation companies with renewable fuels. This preference included generation with natural gas bought by the Transmission Company for the first ten years of operation of the law (2007).
- Restructuring the IRHE: It established the obligation to restructure the IRHE so that it would be divided into at least six companies that must later be privatized.

In the years after the reform, regulations were enacted that would govern the new structure of the sector. In particular, in 1998 regulations were issued that shaped the Wholesale Market²⁵ and the first reform to Law 6²⁶ was made.

The first modification of Law No. 6, which was signed a few months after the enactment of the Framework Law, sought to more clearly adjust private participation in the electricity market and increase the powers of the Public Services Regulatory Body. Among the most important changes in the law are:

- Changed the method for calculating rate updates, indexing it only to the inflationary index.
- Clearly established ERSP powers to actively control the

²⁵ Resolution No. 605. Which approves rules for the wholesale electricity market of the Republic of Panama. Signed April 24, 1998. Published April 28, 1998. Gaceta Oficial 23531

²⁶ Decree Law No. 10. Which modified some articles of law 6 of February 3, 1997, which defines the regulatory and institutional framework for providing public electricity service. Signed February 26, 1998. Published February 28, 1998. Gaceta Oficial 23490-A.

abuse of the dominant position in the electricity market by market agents.

- Enabled the ERSP to change market concentration limits to request concessions for distribution and generation. These limits were established as 25% of the total demand of the national electricity market to generation companies and 50% from national market customers to the distributors.
- Changes in the method of handling. Sets the obligation to deal with generation plants at a short-term marginal cost, eliminating other possibilities.
- Eliminated the restriction that foreign governments control joint venture companies.
- Modified certain conditions in market operations in the first five years of implementing the law.

Privatization of the IRHE

The backbone of the reform initiated by the Chapman Plan was the elimination of monopoly control held by the IRHE on the Panamanian electricity market. In 1997 the IRHE had an installed generation capacity of 910 MW, with 60% concentrated in hydraulic plants and the rest in thermal plants. Its distribution network reached 68.2% of the population, representing 371,000 residential connections.²⁷ The companies, which had serious administrative problems, had 23% technical and commercial losses and coverage of only 50% of the rural population according to World Bank statistics.²⁸

²⁷ The Economic Commission for Latin America and the Caribbean (CEPAL). Central American Isthmus. Statistics on the Electricity Subsector. 1998.

²⁸ World Bank. Project appraisal document on a proposed loan for the amount of us\$12.7 million to the Republic of Panama for a utilities restructuring technical assistance project. December 19, 1997.

All the inefficiencies of the sector impacted the rates paid by residential users, which averaged 0.118 cents on the dollar/kwh in 1997, the highest in the region. The plan estimated that sector efficiency, as a total, would increase as the state monopoly broke up, vertical integration was eliminated and a competitive market was promoted, which would impact rates for final users.

For privatization, the State divided the IRHE into eight companies, four generation, three distribution and one transmission. First they

started the privatization process for the generation companies, as it was stipulated in the framework law that they could only sell up to 49% of the shares if among the assets there were hydraulic generation plants. Thus, only in the case of Bahía Las Minas (which only had thermal generation plants) the private company could control a majority stake.

Together, the four companies sold in 1998 generated revenues of 302 million dollars for the Panamanian State.

Box 1. Results from privatization of generation companies, 1998

Generation Company	Installed Capacity (MW)	Buying Company	Amount Paid (Million US\$)	Share Purchased	Employee-Owned Share
Bayano	192	AES Corporation	46*	49%	2%
Bahía las Minas	292	Enron International	92	51%	10%
Fortuna	300	Coastal Power and Hydro-Quebec	118	49%	2%
Chiriqui	222	AES Corporation	46*	49%	2%

Source: International Finance Corporation. Panamá: Instituto de Recursos Hidráulicos y de Electrificación. http://www1.ifc.org/wps/wcm/connect/a21a86804983912d83d4d3336b93d75f/CIA_PPPseries_IRHE.pdf?MOD=AJPERES

* AES purchased the two companies for a total of US\$92 million.

In 1999 the public offering of distribution companies was carried out. In this process 17 companies on offer participated. The three successful bidders paid a total of 301 million dollars for shares in these

companies. Table 2 summarizes the results of the process of privatizing distribution companies.

Box 2. Results from privatization of generation companies, 1999

Generation Company	Clients	Buying Company	Amount Paid (Million US\$)	Employee-Owned Share
Metro-Oeste	195,000	Union Fenosa	106*	10%
Noreste	148,000	Constellation Power	89	10%
Chiriqui	65,000	Union Fenosa	106*	10%

Source: International Finance Corporation. Panamá: Instituto de Recursos Hidráulicos y de Electrificación. http://www1.ifc.org/wps/wcm/connect/a21a86804983912d83d4d3336b93d75f/CIA_PPPseries_IRHE.pdf?MOD=AJPERES

* Union Fenosa paid US\$212 million for the assets of both companies.

According to IFC estimates, the process of disintegration and the later sale of the IRHE meant an increase in the efficiency of electricity market companies, which had a direct impact on a reduction of up to 10% in the average electricity rates paid by final users.²⁹

Institutional strengthening and electricity subsidies

Mireya Moscoso won the 1999 presidential elections, widow of Arnulfo Arias Madrid, who was the president overthrown by the military led by Omar Torrijos in 1968. The energy proposal of Moscoso's government, whose guidelines were published in the document "Our commitment to change," established the continuation of the liberalization policies

²⁹ International Finance Corporation. Panama: Institute of Water Resources and Electrification. Succeed Story. http://www1.ifc.org/wps/wcm/connect/a21a86804983912d83d4d3336b93d75f/CIA_PPPseries_IRHE.pdf?MOD=AJPERES

of the previous governments and included a special focus on the development of rural infrastructure. The Moscoso government's management with respect to the energy sector is characterized by its efforts to consolidate the reforms of the 90s. In the hydrocarbon subsector it established, with decree No. 36, national hydrocarbon policies. In the electricity subsector, for its part, the measures were primarily aimed at the consolidation of the wholesale market and institutions created in 1996 by the framework law.

The Public Services Regulatory Body had a decisive role in the process of consolidating the electricity market. During the period from 1999-2004, the regulatory body published more than 55 resolutions regarding the electricity market, which included issues such as tariff rates, wholesale market prices, concessions, and approval of expansion plans, among other issues. All these resolutions gave form to the Panamanian electricity market and allowed that the fifth year after the enactment of the Law the wholesale market would reach full operation.

At the beginning of 2000, fuel prices began to rise steeply, thus increasing the costs of thermal generation, which represented 49% of the country's generation at that time. The Government, seeking to reduce the impact of the increase on rates for the most vulnerable customers, introduced before the Legislative Assembly a project law to subsidize users with consumption less than 100 Kwh.

The Legislative Assembly approved the presented project, thus creating Law No. 15³⁰ in February 2001. It established rules for subsidies for residential electricity consumers. The law designed a cross-subsidy mechanism that did not involve a tax burden for the State. The cross-subsidization established that residential clients with subsistence consumption (consumption less than 100 Kwh) would receive a discount that would be financed by customers with consumption greater than 500 Kwh.

The mechanism designed, which was managed by distribution companies, established a fund to be financed by a surcharge (up to 0.6% of the total amount of the bill) of the monthly electricity and power bill to high consumption customers. Distributors, using money accumulated in the fund, would reduce the amount of the bill of subsistence users by up to 20% of the total charge.

This cross-subsidy mechanism was an addition to the electricity subsidy system that already existed in the country. In 2003, the regulatory body calculated that subsidies related to law No. 15 represented 25.4% of the total transfers paid to 263,017 subsidy

30 Law No. 15. Establishes rules to subsidize basic consumption or subsistence of public service electricity and regulate other provisions. Signed on February 7, 2001. Published on February 9, 2001. Gaceta Oficial 24238.

beneficiaries.³¹ Most spending on subsidies was caused by the 1987³² law that benefited the homes where retired people, pensioners or senior citizens lived, giving them a 25% discount for the first 600 KWh consumed.

National hydrocarbon policies: decree No. 36

In 2002 [Texaco](#) closed its refinery in Panama. That year the government and the oil company reached an agreement³³ to end in advance contract-law No. 35 signed in 1992. The closing of Refpan was the culmination of a conflict between the Panamanian government and Texaco about the terms of the operating contract. The U.S. company kept its installed storage capacity and, under new conditions, retained an operating permit in the petroleum free zone.

The conflict between [Texaco](#) and the Panamanian government, in which Texaco sought international arbitration in 1999, was caused by pricing policies. As stipulated in the liberalization decrees and contract No. 35, imported products had an import tariff called a "protection fee." This tariff benefited the only refinery in the country, but, according to some state institutions like CLICAC,³⁴ it was affecting the derivatives market.

31 National Public Services Authority. Report: Subsidies to clients in the electricity sector in Panama in December 2011. April 2012.

32 Law No. 6. Which adopted measures to benefit retired citizens, pensioners, and senior citizens and created and regulated the stamp tax called peace and social security. Signed June 10, 1987. Published June 22, 1987. Gaceta Oficial 20827.

33 Convention No. 1. Contract between the ministry of commerce and industries and Kevin Wolahan on behalf of the Panama Refinery, S.A. Signed May 20, 2002. Published July 2, 2002. Gaceta Oficial 24586.

34 Commission for Free Competition and Consumer Affairs. Technical Note No. 12. October 1999.

The closing of the refinery had a huge impact on the Panamanian hydrocarbon market. [Texaco](#) continued to be, in 2001, the monopoly provider of oil derivatives in the country. The new situation obligated the government to adapt their hydrocarbon policies to prioritize the modernization of the fuel import market. In that context, the September 2003 Cabinet Decree No. 36 was passed, which “establishes a national hydrocarbon policy.”³⁵

Decree No. 36 repealed the 1992 liberalization decree and all its reforms. It became the main legislation for the hydrocarbon market since its text contained provisions on all market activities. Among the most important issues incorporated into decree No. 36 are:

- It established the powers and functions of the Directorate General of Hydrocarbons on the oil market;
- It regulated conditions and obligations for awarding contracts and permits;
- It established all provisions relating to petroleum free zones, including the requirement that all oil derivatives directed at the domestic market should first pass through petroleum free zones;
- Created 11 types of permits for market players on the oil derivatives market, among them:
 - User permit for the petroleum free zone Type A: allows the sale of derivatives to the domestic market;
 - User permit for the petroleum free zone Type B: does not permit sale to the domestic market, only authorizes the sale of derivatives to third parties outside of Panamanian territory;
- Permission to supply petroleum derivative products through barges; for those who sell fuel by barge.
- Permission to import fuel for electricity generation;
- Permission to import Liquefied Petroleum Gas.
- Limited the duration of operation contracts in petroleum free zones to 15 years, with the potential for one additional extension of 5 years.
- Created the National Strategic Oil Derivatives Products Reserve; which obligated all the import and distribution companies to have a permanent derivatives reserve the equivalent of 10 days of sales;
- Established the mechanism for calculating the import parity price, which is the maximum price at which an importer can sell products to a distributor on the domestic market;
- Created the Governmental Coordination Committee on Hydrocarbon Activities, which had the goal of providing assessment to the Directorate General of Hydrocarbons, the Department of Revenue, the [General Customs Directorate](#) and other State institutions that would require it.

Between 2004 and 2005 four decrees were issued reforming parts of decree No. 36. They modified provisions about administrative affairs, changed characteristics of the strategic reserve of petroleum products and allowed the import of asphalt without it having to pass through petroleum free zones in addition to other issues.

35 Portion of the title of the decree.

Fuel prices: Attempts to mitigate volatility

During the years following the liberalization of the electricity market, installed thermal generation capacity grew faster than generation with renewables. Between 1997 and 2003 installed hydraulic generation capacity increased from 551.4 MW to 831 MW to grow 51%, while thermal generation increased 66.9%, moving from 432.6 MW to 722.2 MW.³⁶This situation alarmed public policy makers since all the fuel used in thermal generation was imported and its prices were volatile.

Thus, in 2004, the Legislative Assembly approved Law No. 45³⁷ (second reform to law No. 6) that established a system of financial incentives, of buying and selling and incentives for renewable energy projects.³⁸ Among the most notable incentives was the removal of the obligation to comply with the passage of “competition” to be granted concessions, which allowed interested companies to apply for concessions without having to participate in public bidding. It also exempted them from paying transmission and distribution costs to renewable energy plants of less than 10 MW.

On the fiscal front, import taxes, duties and taxes on imported materials and equipment for the construction of plants were eliminated. Similarly, tax benefits were granted to all plants according to their level of carbon reduction. With this legislation, according to proponents, an increase

³⁶ Olade. Economic System-Energy Information (SIEE).

³⁷ Law No. 45. Establishes a system of incentives for the development of hydropower generation systems and other new renewable and clean sources and has other provisions. Signed August 4, 2004. Published August 9, 2004. Gaceta Oficial 25112.

³⁸ Projects included: central systems for mini hydroelectric plants (les than 10 MW of installed capacity), systems for small hydroelectric plants (between 10 and 20 MW of installed capacity), systems for hydroelectric plants (more than 20 MW of installed capacity), systems for geothermal electric plants and systems for plants from other new, renewable and clean sources (solar, wind and biomass sources).

in investment in renewable energy projects was expected. However, the growth trend of thermal energy plants continued. From 2004 to 2011 the installed capacity of thermal plants grew 55.8%, while those of renewable energy grew 12.4%.³⁹Despite the importance given to Law No. 45, it wasn't until 5 years later that the regulation was approved.⁴⁰

In 2004 the Government faced a lot of pressure to take additional measures to stabilize the volatility of electricity rates, which were being controlled by changes in oil prices. In this context, the Government decided to create a stabilization mechanism for electricity rates called the Rate Stabilization Fund (FET).⁴¹

The FET should be managed by the state transmission company (ETESA) and supervised by the ERSP. By design, the fund would achieve rate stability by making a fixed oil price level (crude West Texas Intermediate at \$40 in 2004). The fixed price would be used to calculate the “stabilized” electricity rate. When the price of petroleum exceeded the established level, the fund would be used to transfer the difference between the “stabilized” rate and the market to final users. If, on the other hand, the price of petroleum was below the established level, the rates charged would be calculated at the “stabilized” price and transferred to the fund for money produced by the difference between that price and the market rate.

³⁹ Olade. Economic System-Energy Information (SIEE).

⁴⁰ Executive Decree No. 45. Which regulates the incentive system to develop hydroelectric generation systems and other new, renewable and clean sources referred to in law no. 45 of August 4, 2004. Signed June 10, 2009. Published June 16, 2009. Gaceta Oficial 26304.

⁴¹ Cabinet Resolution No. 6 on January 28, 2004. Published on January 30, 2004. Gaceta Oficial 24978.

In practice, the FET has functioned as an additional subsidy to final users, which has been funded by the State. According to ERSP calculations, in 2004 the amount contributed by the State to the FET was 26.2 million balboas. That same year the total subsidies to final customers was 10.8 million balboas. In 2011 this ratio was much more pronounced since the FET transferred a total of 224.5 million balboas to customers, while as a product of established electricity subsidies they transferred 24.7 million balboas..

The state company and regulator in the electricity market

The winner of the 2004 presidential elections was economist Martín Torrijos, son of Omar Torrijos. The new president, of social democrat inclination, was elected presenting a platform called the New Country. It sought economic development with a focus on the market, but with an emphasis on social justice. On energy issues the new President made it among his priorities to develop hydroelectric plants, reduce dependency on oil and strengthen the State institution in the design of energy policies.

In 2005 the Government created⁴² the National Energy Savings Commission (CONAE) to analyze the electricity market and make recommendations to improve its performance. This commission was of great importance given that its reports were taken into account in the decisions made by the Torrijos government. One of the reports published

⁴² Cabinet Decree No. 27. By which the national government took measures to save energy and fuel. Signed September 21, 2005. Published September 23, 2005. Gaceta Oficial 25392-A.

by the commission estimated that there were indications of serious distortions in the electricity market and that the Government should take legal action on those issues.⁴³

Two years after assuming the presidency of the republic, the Government made two decisions aimed at achieving the objective of strengthening sector institutions and improving the performance of the electricity market. The first of these decisions was the restoration of the Public Service Regulatory Body and the second was the creation⁴⁴ of the [Electricity Generation Company S.A. \(EGESA\)](#).

By Decree Law No. 10 of 2006,⁴⁵the Government restructured the ERSP and replaced its name with the [National Public Services Authority \(ASEP\)](#). It also restructured the organizational structure including new management. Similarly it modified the board of the organization, replacing the three-member board that was in the original law with a single administrator appointed by the executive and approved by the legislature. The management period of the board of the organization was extended from two years to seven years of management.

However, the most important changes of this reform were the power and functions of the new organization. The 2006 reform empowered the [ASEP](#) to regulate the distribution of natural gas. Likewise, it entrusted the [ASEP](#) the control of anti-competitive practices of public service markets. These new functions mainly included assistance activities to the [Authority for Consumer Protection and Competition](#).

⁴³ <http://www.panamaamerica.com.pa/notas/585554-distorsiones-en-mercado-electrico-sin-investigacion>

⁴⁴ Cabinet Resolution No. 23. Authorizes the dispatch of the social pact, which creates the electricity generation company S.A. Signed on March 29, 2006. Published on March 31, 2006. Gaceta Oficial 25515.

⁴⁵ Decree Law No. 10. Reorganizes the structure and the composition of the public service regulatory body and makes other provisions. Signed on February 22, 2006. Published on February 24, 2006. Gaceta Oficial 25493.

In 2006 the [EGESA](#) was also created as a company controlled completely by the State. The intention was that the company would participate in the generation market under the same conditions as private companies, which would increase competition. However, three years later, in 2009, when operations began at its first 40 MW plant, it only functioned as backup.

Centralizing policies: The National Energy Secretary

A group of measures taken by the Martín Torrijos government on energy policy sought to strengthen the policy institutions of the sector. Thus in June 2007⁴⁶ the government created the Secretary of Energy with the main role of coordinating all policy⁴⁷ organizations that existed at that time. The secretary, who was under the president of the republic, was formed of six members, all representatives of state organizations and companies.⁴⁸ Some months later, through an executive decree,⁴⁹ the government changed the composition of the board of the secretary and introduced the ministry of Commerce and Industry.

46 Executive Decree No. 124. Created the Secretary of Energy, under the President of the Republic. Signed June 15, 2007. Published June 20, 2007. Gaceta Oficial 25817.

47 Commission on Energy Policies (COPE), the National Hydrocarbon and Alternative Energy Directorate of the Ministry of Commerce and Industries and the National Commission on Energy Savings (CONAE).

48 The Secretary of Energy will be formed by the Minister of the Canal, who shall preside, the Minister of the Presidency, the Manager of the Electricity Transmission Company (ETESA), the Manager of the Electricity Generation Company (EGESA), the Director of the Commission on Energy Policy (COPE) and the General Manager of the Public Services Authority, in an advisory capacity on regulation matters.

49 Executive Decree No. 176. Creates the Secretary of Energy, under the President of the Republic. Signed September 17, 2007. Published September 18, 2007. Gaceta Oficial 25879.

Later, in 2008,⁵⁰ this secretary is replaced by the [National Energy Secretary \(SNE\)](#), an agency of the Ministry of the Presidency. This new government agency centralizes all the policy roles that were previously divided between the Commission on Energy Policy and the General Directorate on Hydrocarbons and Alternative Energy. The promotion of energy sector reforms by the Torrijos government was not limited to the electricity subsector. In the hydrocarbon subsector there were also important changes. One was the change of the definition of petroleum free zones to Zones Free of Fuels, which was in the reform to decree no. 36⁵¹ and the inclusion of a new section in the 1987 hydrocarbon law.⁵² This change explicitly included all marine and submarine platforms used for the sale of fuel. In addition, it included legislation on the biofuel sector.

Third reform of the framework law: mission, electricity rate reduction

On July 1, 2009 businessman Ricardo Martinelli of the Democratic Change party became president. The new president was elected with an overwhelming vote that allowed him to accumulate about 60% of the vote. His campaign was based on the promise of job creation, public safety and the fight against corruption.

50 Law No. 52. Created the National Energy Secretary and makes other regulations. Signed July 30, 2008. Published July 31, 2008. Gaceta Oficial 26095.

51 Cabinet Decree No. 25, which modified the articles of Cabinet Decree No. 36 on September 17, 2003. Signed September 29, 2008. Published January 5, 2009. Gaceta Oficial 26194.

52 Law No. 39, which modified and added articles to 1987 Law 8, which regulates activities related to hydrocarbons and dictates other provisions. Signed August 14, 2007. Published August 16, 2007. Gaceta Oficial 25857.

The government proposal submitted by the candidate was called the “Government Plan for Change” and it established that in the energy sector “we should use the model for electricity generation based on our natural resources and thus significantly reduce rates and not be subject to market variables that are totally out of our control.”⁵³

In the “Strategic Government Plan 2010-2014”⁵⁴ the new administration presents the main steps to take in order to achieve a reduction in electricity rates. The chapter titled “Competitive and Abundant Energy” establishes that:

- The Government will ensure that distribution companies purchase 100% of the estimated demand under supply contract, reducing spot market transactions.
- Will begin a policy of coverage of oil prices and its derivatives using financial market mechanisms.
- Will modify the financing mechanism of the Rate Stabilization Fund.
- Will streamline procedures for the approval and execution of electricity generation projects.
- Plans to create an energy basket in which large clients will acquire energy at more competitive prices.

Specific actions to reduce electricity rates began a few months after the inauguration. In October 2009 the legislature approved the proposal to reform the framework law, which modified seven articles of 1997

law No. 6. The main objective of Law No. 57⁵⁵ was to avoid electricity market speculation. The reform establishes a mechanism to ensure that the majority of power and energy transactions are made through supply contracts and on the spot market. This measure was in line with the first strategy of the government plan.

Specifically, the legal instrument aimed to reduce rates by two mechanisms:

- Competition, which forces generators to offer all available power on the contract market. If a company doesn’t comply, they are forbidden from offering energy on the spot market.
- To obligate distributors to buy 100% of their demand on the contract market under the coordination of [ETESA](#) and [ASEP](#).

In addition to the modifications explained, the law included a new regulatory body and, in policy making functions, the Energy Policy Commission was replaced by the [National Energy Secretary](#).

Martinelli’s government, at the institutional level, confirmed that the central role of energy sector policies was assigned to the [SNE](#) in 2008. It manifested itself a few weeks after taking possession, publishing a decree⁵⁶ urging the [ASEP](#) to comply with policies set by the [SNE](#) regarding the scheme to reduce basic distribution rates.

53 Government Plan for Change. Campaign Document. <http://tvn-2.com/noticias/gobiernomartinelli/martinelli-varela.pdf>

54 Strategic government plan 2010-2014. Republic of Panama. December 2009. http://www.mingob.gob.pa/mingob/transparencia/_lib/file/doc/Plan_Estrategico_de_Gobierno_2010-2014.pdf

55 Law No. 57. Modifies articles of 1997 Law 6, which dictates the regulatory framework for the provision of public electricity service. Signed October 13, 2009. Published October 13, 2009. Gaceta Oficial 26387-B.

56 Executive Decree No. 240. Enacting energy policy provisions. Signed July 24, 2009. Published July 27, 2009. Gaceta Oficial 26332.

According to [CEPAL](#)⁵⁷ statistics, the percentage of energy traded in the spot market moved from 18.2% in 2009 to 2.2% in 2010, indicating that the implementation of the 2009 reform achieved the objective of reducing spot market transactions. Energy prices for residential users also were reduced during those years, moving from 0.164 \$/Kwh to 0.161 \$/Kwh. However, this decline cannot be attributed solely to the measures taken in Law No. 57 because prices depend on many other variables.

2011: Important reforms

In 2011 the Ricardo Martinelli government approved a series of legal instruments related to the electricity sector. In chronological order, the first law approved was law No. 43,⁵⁸ which restructured the [National Energy Secretary](#). This law established in more detail the role of the organization in charge of energy sector policies, incorporating some that were not included in the 2008 creation law. In addition, the new law included the figure of an Advisory Board composed of six members representing public and private institutions.

Together with the previous law, law No. 44⁵⁹ was passed. It established incentives for the construction of wind energy plants. Among the provisions established, the law indicates that plants that produce electricity with wind energy can participate in competitive acts organized

57 Economic Commission for Latin America and the Caribbean (CEPAL). Central American Isthmus. Electricity Subsector Statistics. 2011.

58 Law No. 43. Reorganized the National Energy Secretary and made other provisions. Signed April 25, 2011. Published April 25, 2011. Gaceta Oficial 26771.

59 Law No. 44. Establishes a system of incentives to promote the construction and exploitation of wind plants destined to provide public electricity utilities. Signed April 25, 2011. Published April 25, 2011. Gaceta Oficial 26771

by the [ETESA](#). But, in addition, the transmission company would seek to organize power auctions exclusively for wind plants. The contracts resulting from these auctions could last for up to 15 years.

Among the tax incentives included in the legislation is the exemption from all taxes and import duties on equipment for construction, operation and wind plant maintenance. It also included the possibility of carrying out accelerated depreciation on an investment that would be credited to net income.

The third law published in 2011 was law No. 58⁶⁰ which modified the framework law. This legislation, included in law No. 6, new provisions to encourage investment in rural electrification. Law No. 58, which can be considered the seventh reform to the legal framework, created the Rural Electrification Fund, which would be financed with contributions from electricity market agents. In addition, it established the goal of increasing rural electrification in the country by at least 2% annually.

As for the hydrocarbon sector, the main changes relate to Law No. 8, which regulated sector activities in 1987, Cabinet Decree No. 36, which established National Hydrocarbon Policy in 2003 and finally, in 2011, Law No. 42, which regulated National Biofuel Policy.

60 Law No. 58. Modified and added articles to 1997 law 6 about the regulatory and institutional framework for providing public electricity service, for promoting equity in the provision of electricity in rural areas. Signed May 30, 2011. Published June 1, 2011. Gaceta Oficial 26797.

ENERGY DOSSIER
06 PANAMA

