



Peruvian Regulatory Framework

Analyst Update Meeting

June 2017



Agenda



Peru – General View

Market description

Regulatory framework

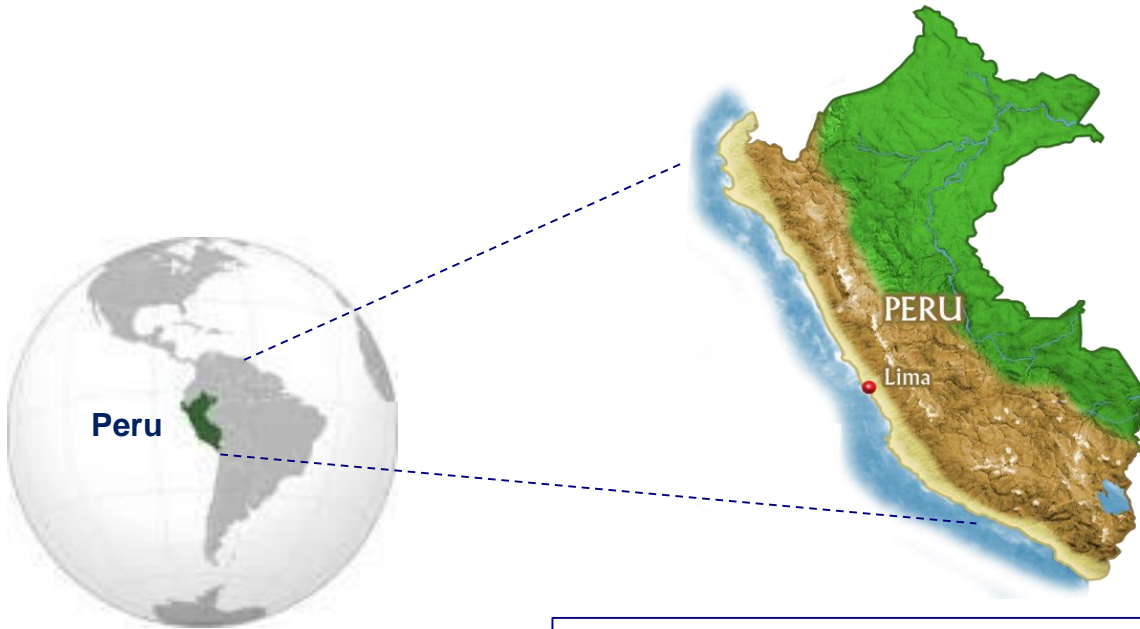
Hot Topics

Peru

General View



Political, economical and energetic stability



Population:

Peru: 32 millions

Lima: 10 millions

President: Pedro Pablo Kuczynski (PPK-Peruanos Por el Kambio)

Congress: Partido Fuerza Popular (Fujimoristas) (73/130 congresistas)

Effective Capacity –2016

Total: 12 775 MW

Hydro: 39% ⁽¹⁾

Thermal: 58% ⁽²⁾

Eolic - Solar: 3%

Energy Production

2016: 48 326 GWh ($\Delta + 9\%$)

2015: 44 540 GWh

Hydro: 47%

Thermal: 50%

Wind - Solar : 3%

Peak Demand

2016: 6 565 MW ($\Delta + 5\%$)

2015: 6 275 MW

Source : COES 2016

Notes:

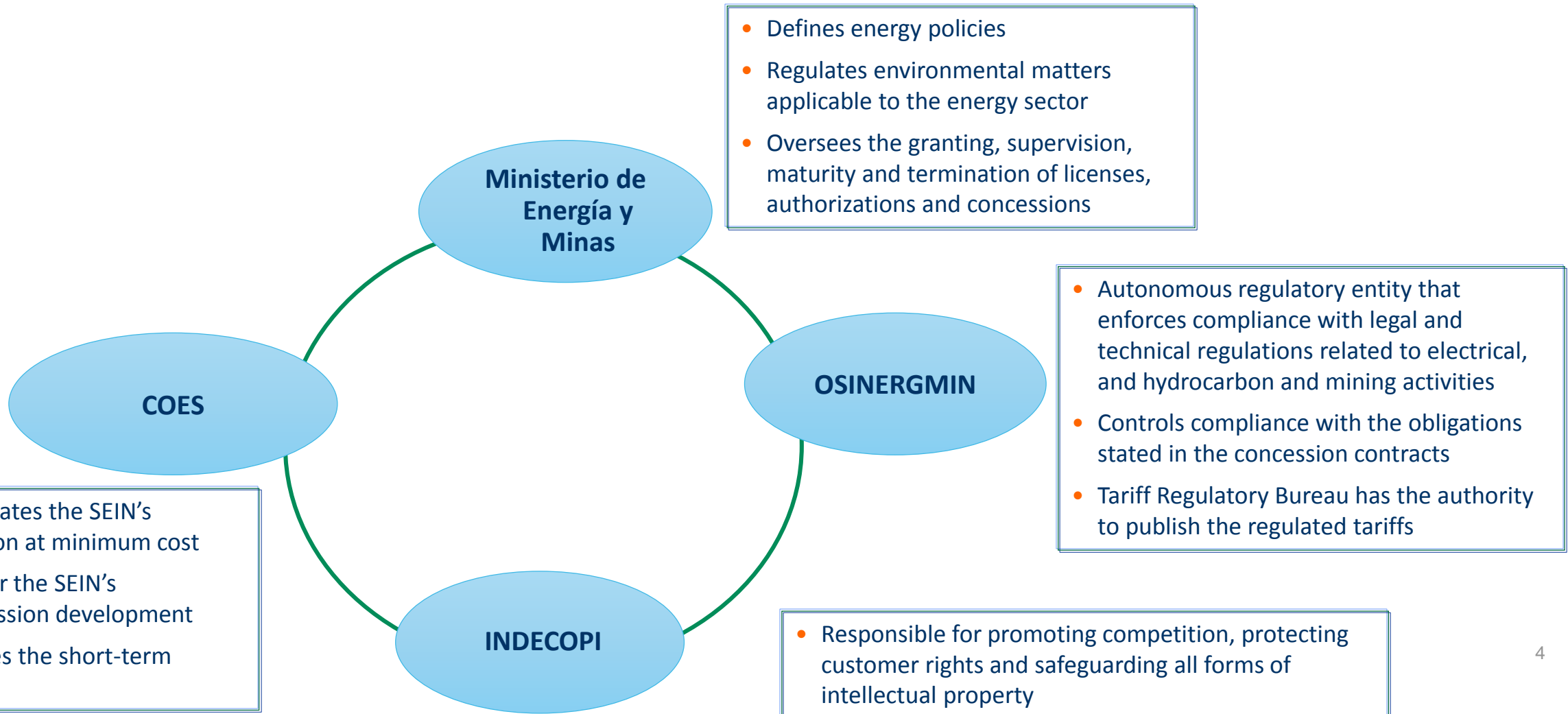
(1): Hydro RER included

(2): Biomass and *Reserva Fría* included

Institutional Framework



Institutional framework provides legal and regulatory security



Market structure



Separated activities promote investment opportunities and competition

GENERATION (Gx)	TRANSMISSION (Tx)	DISTRIBUTION (Dx)
<ul style="list-style-type: none"> Competitive Market. Marginal costs in the spot market. Centralized dispatch, organized by variable costs. PPA's for distribution: regulated price (busbar tariff) or prices from auctions. PPAs for free clients: negotiated prices. 	<ul style="list-style-type: none"> Natural monopoly. Regulated business. Centralized planning (Ministerio Energía y Minas). Auction processes to assign standardized BOOT contracts 	<ul style="list-style-type: none"> Natural monopoly. Regulated business, VAD (Valor Agregado de Distribución) is approved for 4 years. Pass-through of Tx and Gx costs. Residential clients with less than 100 kWh are subsidized (<i>Fondo de Compensación Social Electrico- FOSE</i>). Dx is responsible of the street lighting.

(1) Non-regulated clients: i) Mandatory for those with more than 2,5 MW, ii) Eligible between 0,2 MW and 2,5 MW

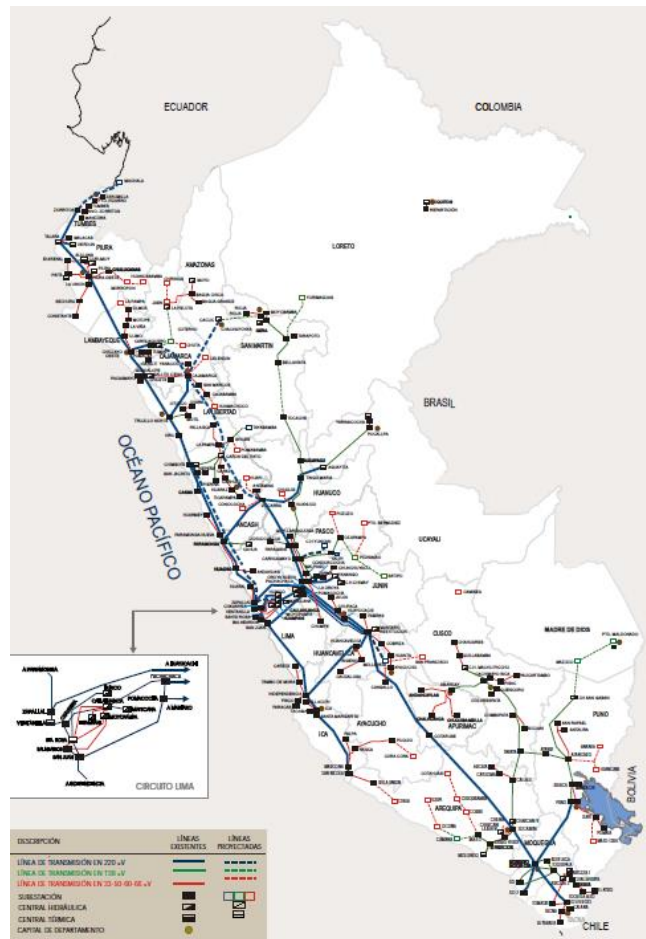


Transmission

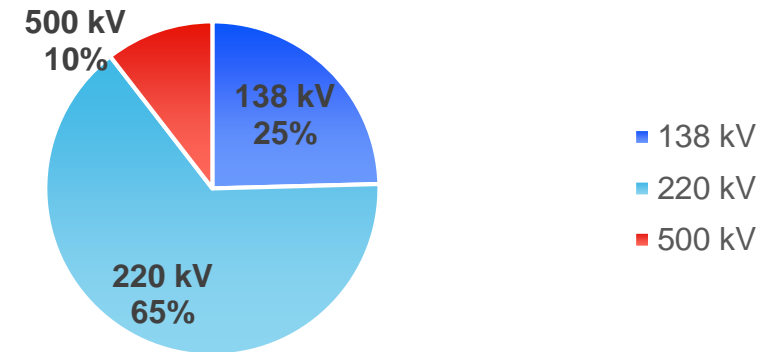
18,747 km of transmission lines with voltage ≥ 138 kV.



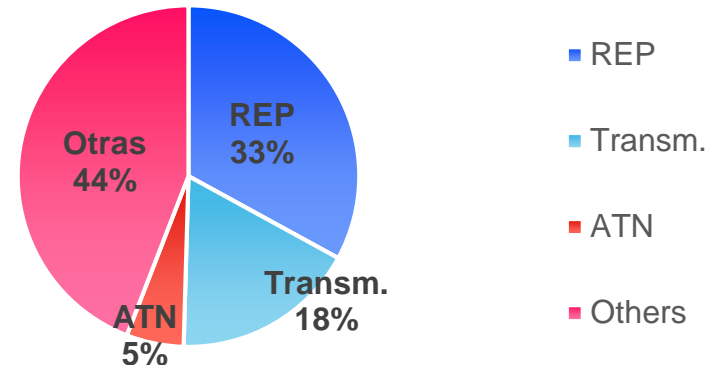
Strong Transmission system ensures national supply



Km by Voltage level



Km by company



Source: COES SINAC - 2016

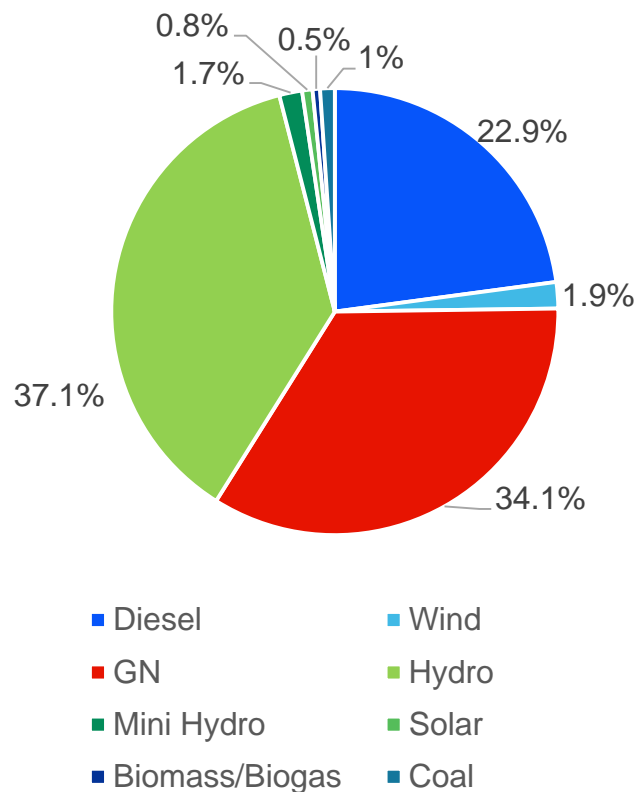
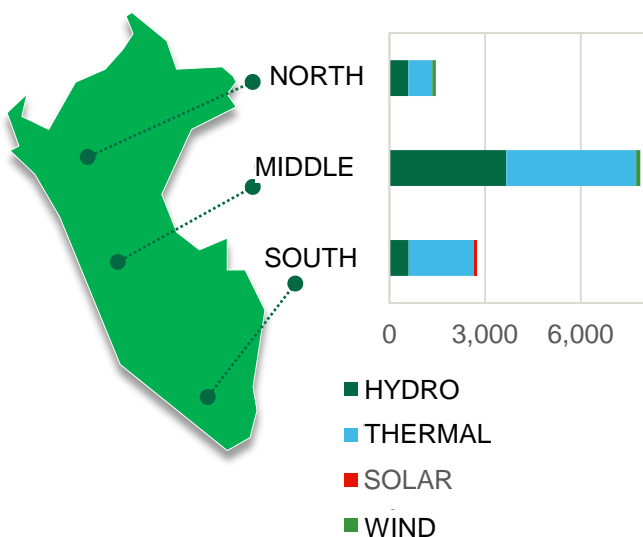
Generation

Effective capacity



Enel Peru has a relevant position in the Peruvian energy market

Effective capacity SEIN 2016 : 12 776 MW



Effective capacity ENEL 2016: 1 977 MW

	MW
ENEL Total	1977
Enel Generación Piura	293
CT Malacas	104
CT Reserva Fría	189
Chinango	198
CH Chimay	155
CH Yanango	43
Enel Generación Perú	1486
CT Ventanilla	479
CT Santa Rosa	418
CH Huinco	268
CH Matucana	137
CH Callahuanca	84
CH Moyopampa	69
CH Huampani	31

Effective capacity with new TG 6 in Malacas (51 MW) is 2028 MW

ENEL Thermal	1 190
ENEL Hydro	787

Generation



Generation Plants



ENEL Generación Perú

- 126 customers:

		Sales (TWh)
# Distributors	11	5.6
# Free customer	115	3.7

- Enel Generación is the largest private producer in the country (share: 18%)
- 2028 MW (61% thermal; 39% hydro) (1)
- Sales: 9.3 TWh/year
- Production: 8.8 TWh/year

Note: (1) TG6 Malacas included

Enel Distribución Perú



Concession area in the North of Lima with a high economical development potential



ENEL Distribución Perú

- 1.37 millions of customers:

		Sales (TWh)
# Regulated	1 366 368	4.9
# Eligible free customer	515	1.1
# Free customer	261	1.6

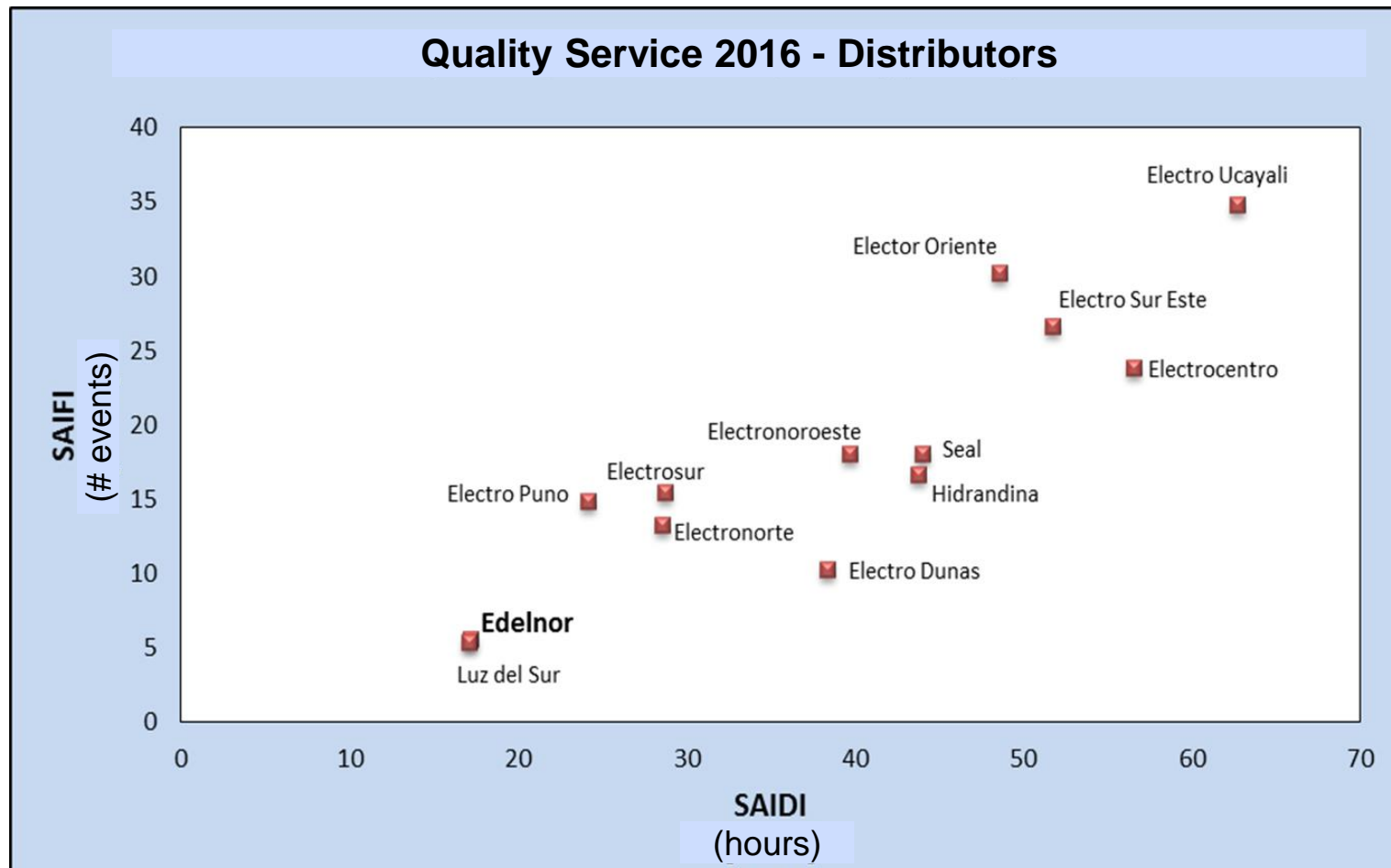
- 410 kWh/month per capita
- 5 millions of people in the influence zone.
- 1,225 MW peak demand.
- 7.6 TWh energy sold.

ENEL Distribución Perú

Distribution – Quality indicators



ENEL Distribución (ex Edelnor) delivers best quality service nationwide

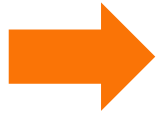


Source: Osinergmin

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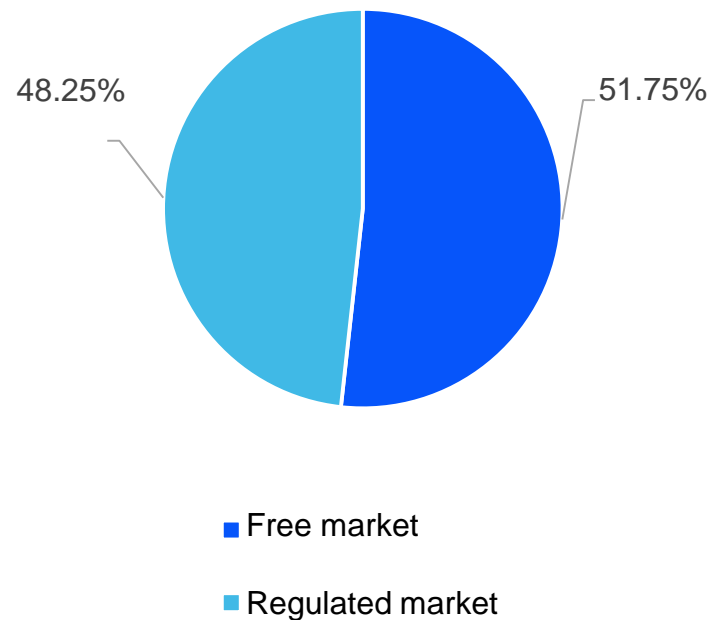
Peru electricity market

Customers 2016 – regulated and free market



Economical growth will keep free market expansion

Energy Sales 2016



Energy	Free Market (GWh)	Regulated Market (GWh)	Total (GWh)
Generators	20 002	0	20 002
Distributors	2 359	20 850	23 209
TOTAL	22 361	20 850	43 211
Share	51.75%	48.25%	100%

# customers	Free Market (customers)	Regulated Market (customers)	Total Customers
Generators	381	0	381
Distributors	408	6,992,063	6,992,471
TOTAL	789	6,992,063	6,992,852
Share	0.01%	99.99%	100%

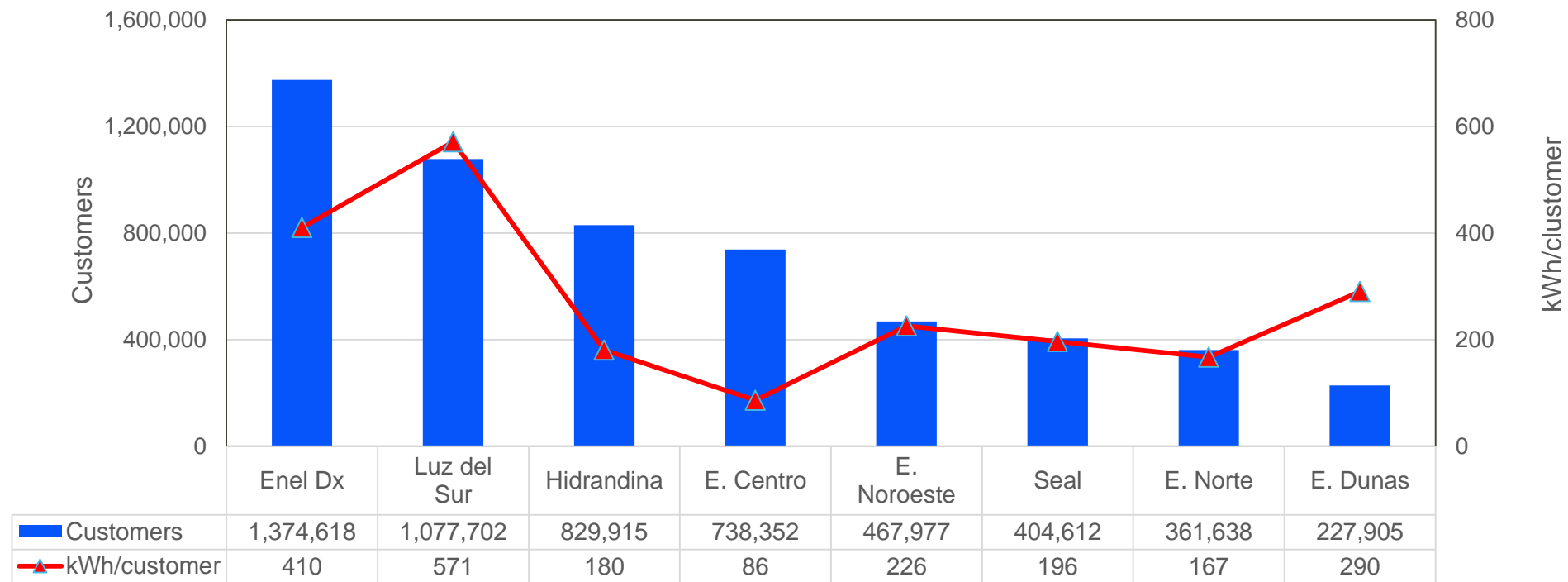
Source : Osinergmin

Market Position Enel Peru 2016

Distribution



Enel Dx is the largest distributor nationwide, with high potential of growth by customers and per capita consumption



Source: Osinergmin

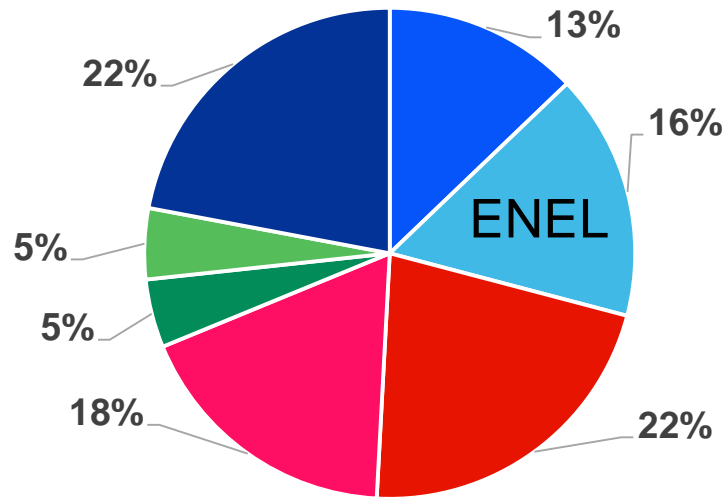
Market Position Enel Peru 2016

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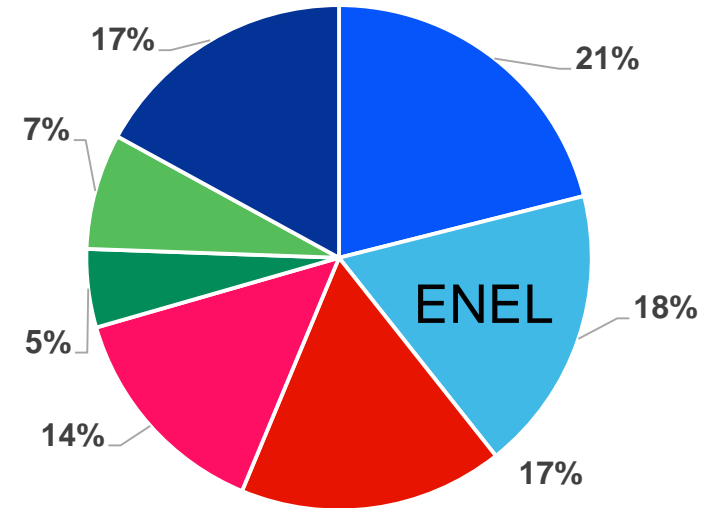
Enel is the first private generator in the country

Effective Capacity



- State
- ENGIE
- ORAZUL
- Others
- ENEL
- IC Power
- Fenix (Colbun)

Energy Production



- State
- ENGIE
- ORAZUL
- Others
- ENEL
- IC Power
- Fenix (Colbun)

Source: COES - 2016

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Distribución

Regulatory Model



Distribution is a stable & profitable activity with high growth potential



Distribution Regulation (VAD): remuneration based on due investments for a **model company**, tariff studies approved by the Regulator every 4 years. Since 1994, four tariff processes have been done. New tariff setting process will be in November 2018.



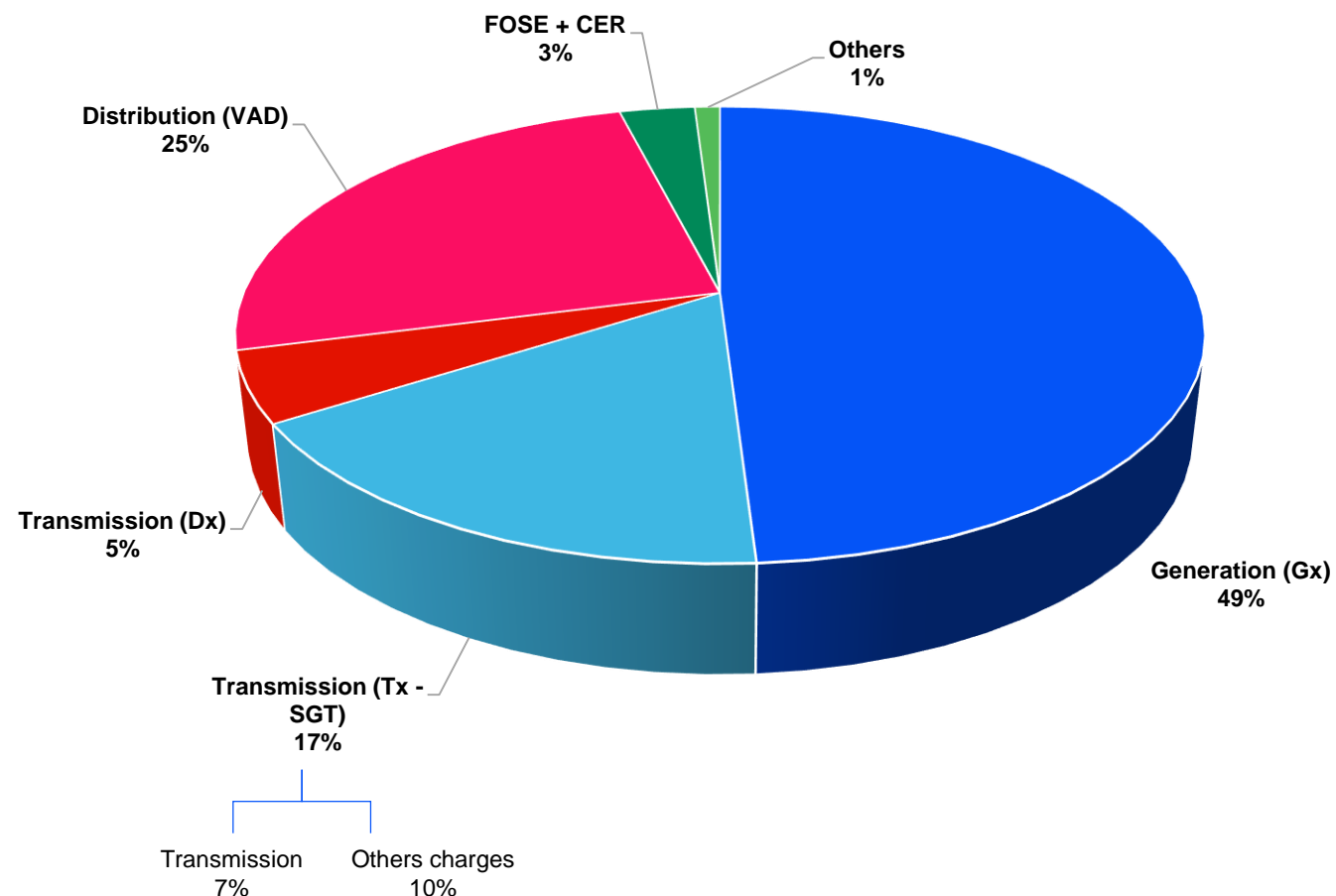
Sub-transmission Regulation: remuneration based on **committed investments** by the company previously approved by the Regulator in a 4 year period.

Since 1994 the WACC rate used for the tariff process is 12%.

- **Stable regulatory framework.**
- **Guaranteed profitability of investments in distribution and sub-transmission.**

Tariff structure

Residential tariff (jun 2017): US\$ 175 /MWh for a 200 kWh/month customer



Regulatory News

Distribution



A recent regulatory update has been approved with new incentives for investments

Issue	Regulatory modification - DL 1221
VAD	The new methodology for VAD definition is more focus on a ideal Dx Company that approaches better to real figures.
QUALITY	VAD remuneration incentives investments to improve quality of service based on annual targets. The incentive should not exceed the 5% of the VAD-MT (4 MUSD estimated for Enel).
TECHNOLOGY INNOVATION AND/OR ENERGY EFFICIENCY	An additional incentive on VAD will be recognized, up to 1% of revenues, for companies that implement efficient technologies. Investments projects must be previously approved by the Regulator. (0,5 MUSD per year estimated).
SMART METERING	Distributors will propose to Regulator a gradual plan for conventional metering replacement with smart metering systems. The new smart meters will be owned by distributors. Up to 8 years for its implementation.
ZONAS DE RESPONSABILIDAD TÉCNICA (ZRT)	MINEM will define for each distributor its ZRT. ZRT includes areas which are geographically defined in order to achieve electrification in the whole country. ZRT includes preferably the limit of the regions where the distributor operates.

Regulatory News

Generation



Recent regulations to improve market performance and to eliminate market imperfections

Issue	Regulatory modification
Decreto de Urgencia N° 049-2008	Spot market price <i>cap will end by</i> October 2017
New regulation to facilitate spot market access to large users and distributors (MME)	<ul style="list-style-type: none">✓ Large customers can purchase energy to cover up to 10% of their demand✓ Distributors can purchase up to 10% of their free market demand.✓ Relevant requirements:<ul style="list-style-type: none">○ To implement on time communication systems with market operator○ Financial Guarantees○ To perform control systems to be remote operated by market operator✓ COES should implement a system in order to ensure the fulfillment of market conditions.

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Hot Topics



- **Gasoducto Sur Peruano (GSP) to be delayed:**

The GSP Project was scheduled to begin operations in 2021. The project has been cancelled due to non fulfillment of financial close by the JV. Peruvian government wants to restart a new competition process for the construction.

The estimated date for the adjudication is 1T 2018.

- **Generation over capacity**

Old government tenders to foster new generation capacity (hydro and thermal) are now coming into commercial operation, currently there is a high reserve margin which lowered free customers prices.

A progressive recovery of the price signal is expected, considering the delay of the GSP that will reduce the efficient reserve margin until its operation.

Thank you

