



Brazil

Enel Américas' 2018 Analyst Update Meeting

Carlo Zorzoli

*Country Manager
Enel Brasil*





Enel Brasil Positioning

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Distribution

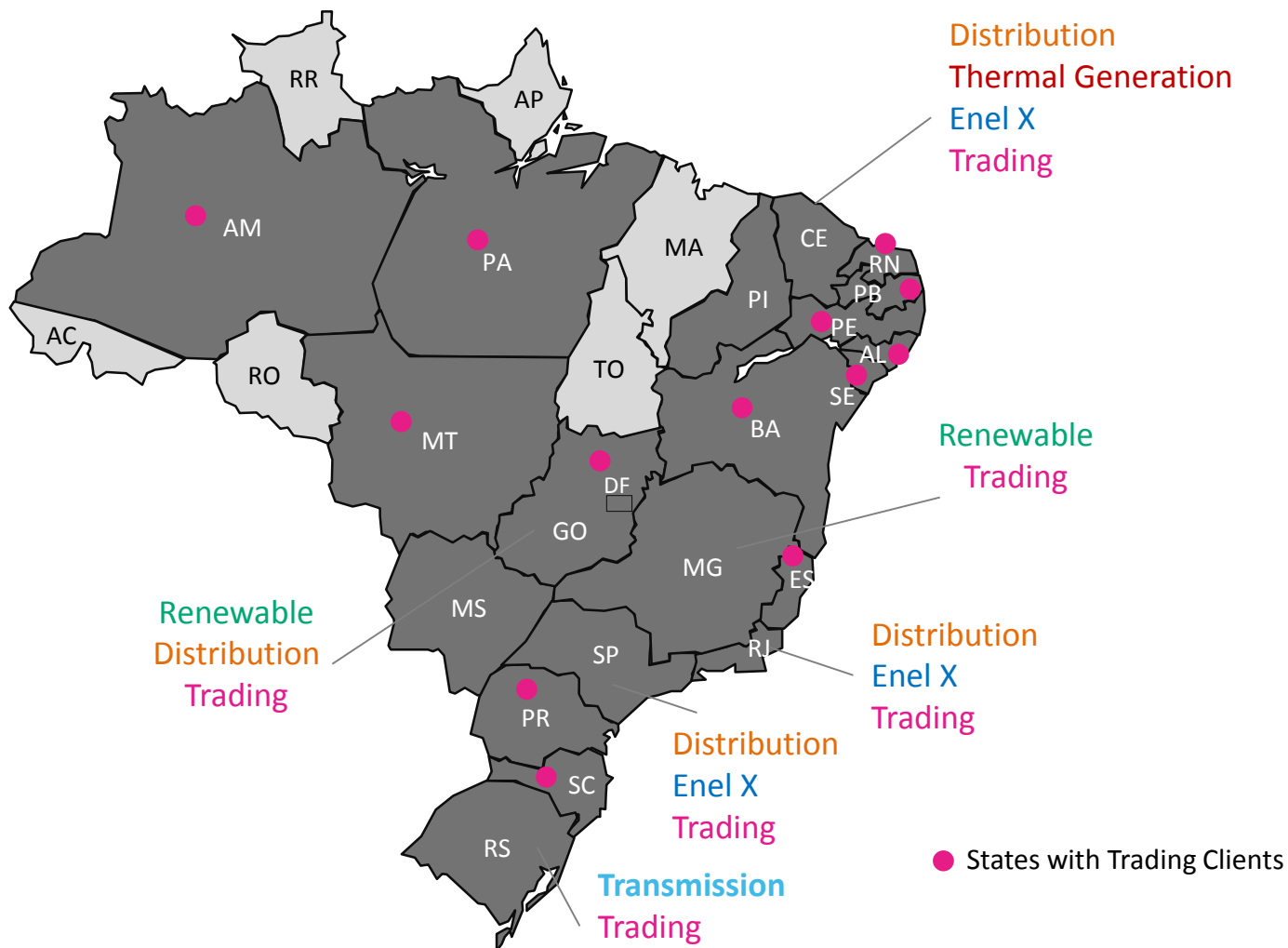
Transmission

Trading

Thermal
Generation

Renewable

Enel X



Presence in Brazil

Present in **21 states**

1,355 MW installed capacity

**1,355 MW
In Operation**

Hydro	1,036 MW
Thermal	319 MW

2,200 MW Interconnection Brazil –Argentina

17 million of customers, 4 distribution companies

Commercial agents:

PA, RR, BA, PI, SP, MG, ES, DF, GO, MT, PR, SC, RS.

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Generation and Distribution

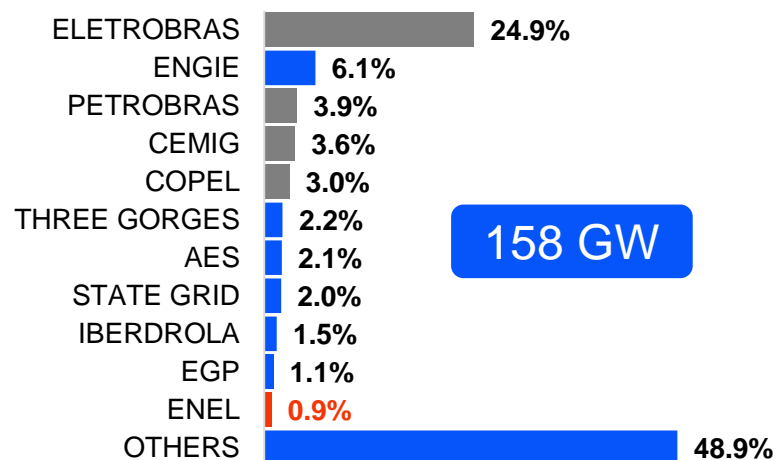
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Sectorial Context | Gx Market

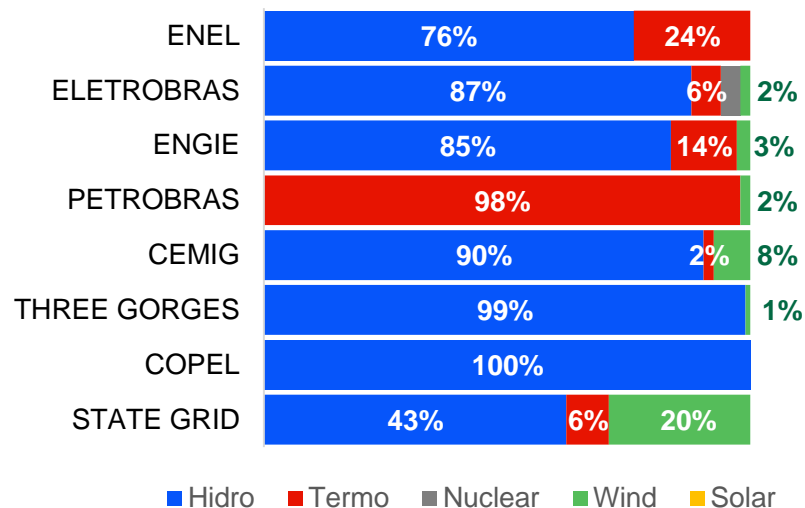
Generation in 2017



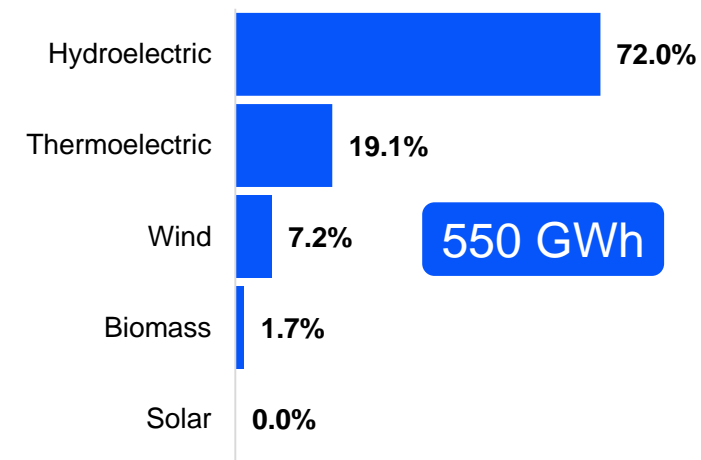
Generation: Market (Installed Capacity)



Companies fleet breakdown



Generation by source (GWh)

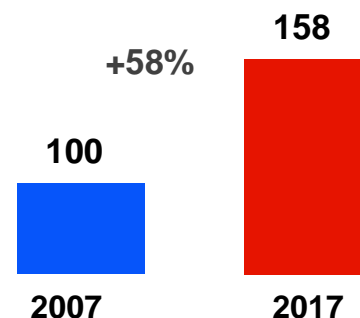


Main Players

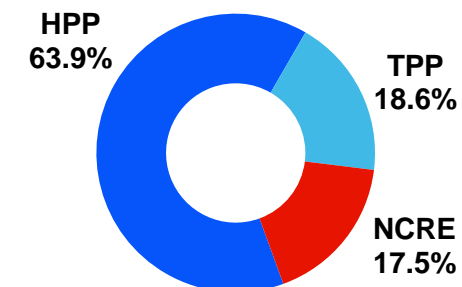


1/ State Grid
2/ China Three Gorges (CTG)
3/ In Brazil through Neoenergia

Generation: Installed Capacity (GW)



Generation: Installed Capacity by Technology (%)



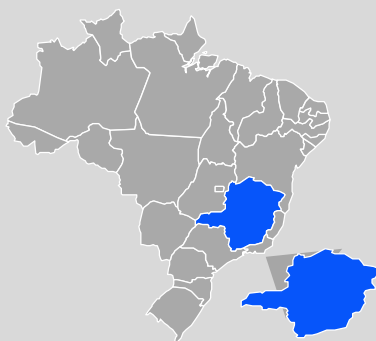
Sectorial Context | Enel's assets in Brazil

Generation assets



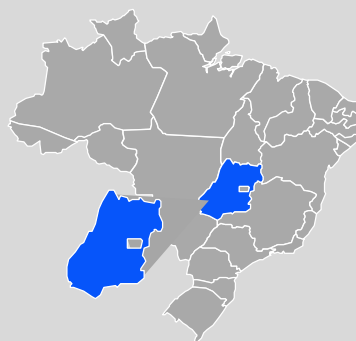
Volta Grande

- **Large Hydro:** 380 MW
- **Concession:** 2017 – 2047 (30 years)
- **Energy generation:** 2,020 GWh/year
- **Physical warranty:** 230.6 MWavg
- **Sales:** 70% Regulated / 30% Free Market



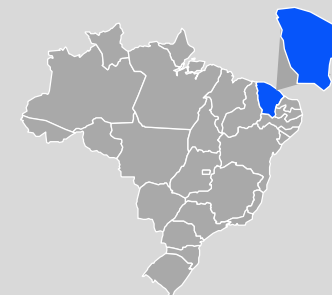
EGP Cachoeira

- **Large Hydro:** 658 MW
- **Concession:** 1997 – 2027 (30 years)
- **Energy generation:** 3,076 GWh/year
- **Physical warranty:** 394.3 MWavg
- **Sales:** Free Market



Enel Fortaleza

- **Thermoelectric plant:** 327 MW
- **Authorization:** 2001 – 2031 (30 years), can be extended
- **Energy Generation:** 1,983 GWh/year
- **Physical Warranty:** 318.5 MWavg
- **Sales:** 100% regulated, PPA with Enel CE until 2023
- **Gas supply:** Built under the Thermoelectric Priority Program Gas supply guarantee for 20 years



Sectorial Context | Dx Market

Distribution in 2017

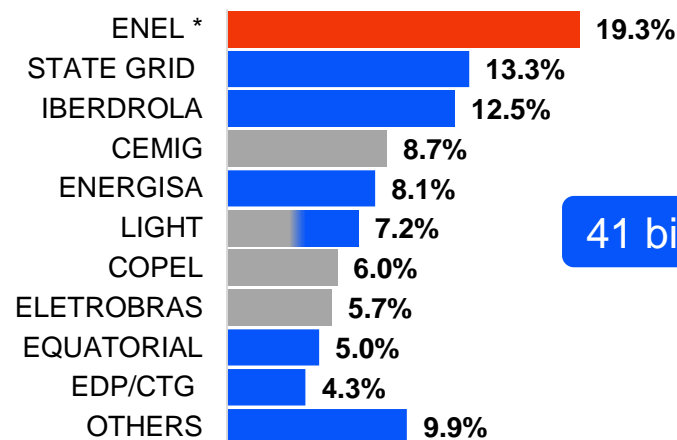


Main Players



1/ State Grid
2/ China Three Gorges (CTG)
3/ In Brazil through Neoenergia

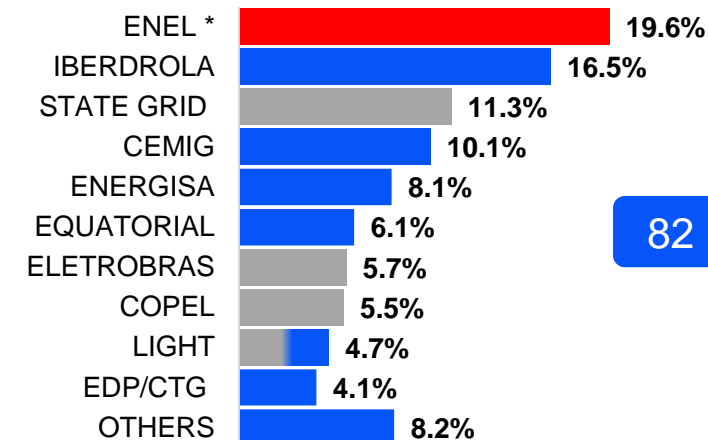
Distribution: Market (Revenue)



*Considering Eletropaulo numbers in 2017

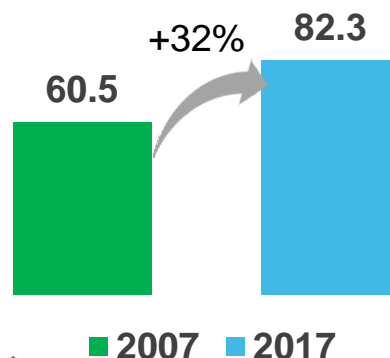
41 bi US\$**

Distribution: Market (Customers)

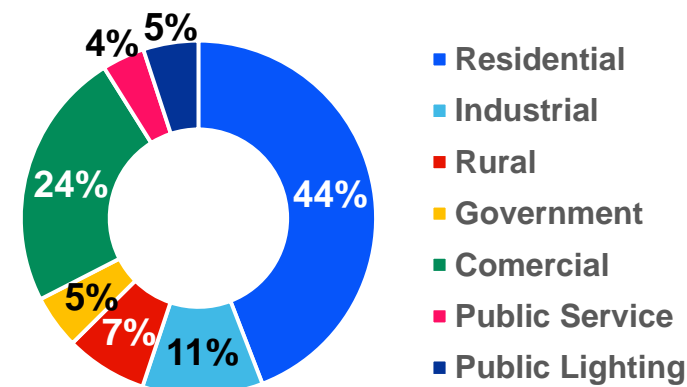


82 million

Number of costumers (Million)



Energy Consumption



**Brazil Market / Exchange rate: 3,19 BRL/US\$

Sectorial Context | Enel's assets in Brazil

Distribution assets



Enel Distribuição Rio

Concession area: 32,600 Km²

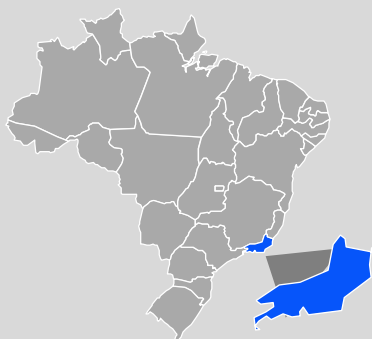
Cities: 66

Consumers: 2.7 million

Grid: 59 thousand Km

Energy distributed: 11.4 TWh

Concession contract: 1996-2026
(Renewable for + 30 years)



Enel Distribuição Ceará

Concession area: 148,921 Km²

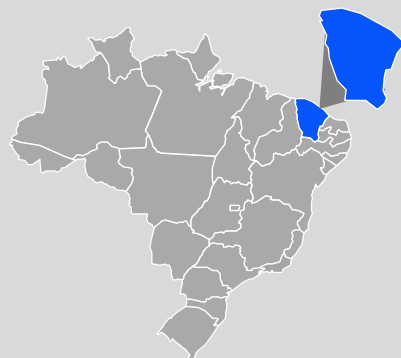
Cities: 184

Consumers: 3.5 million

Grid: 146 thousand Km

Energy distributed: 11.5 TWh

Concession contract: 1998-2028
(Renewable for + 30 years)



Enel Distribuição Goiás

Concession area: 337,000 Km²

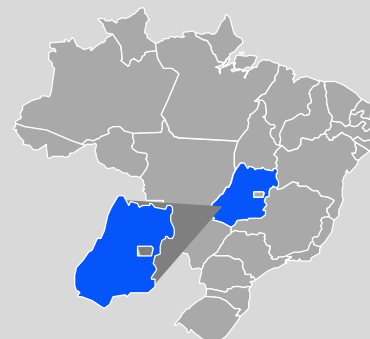
Cities: 237

Consumers: 2.9 million

Grid: 215 thousand Km

Energy distributed: 13.3 TWh

Concession contract: 2015-2045
(Renewable for + 30 years)



Eletropaulo

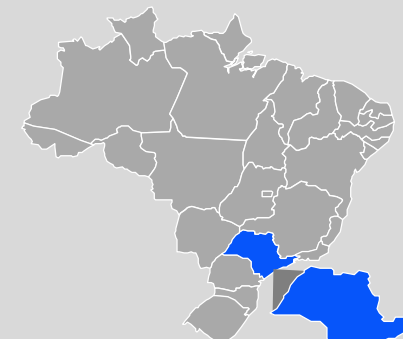
Concession area: 4,526 Km²

Cities: 24

Consumers: 7.2 million

Grid: 43.3 thousand Km

Energy distributed: 43 TWh

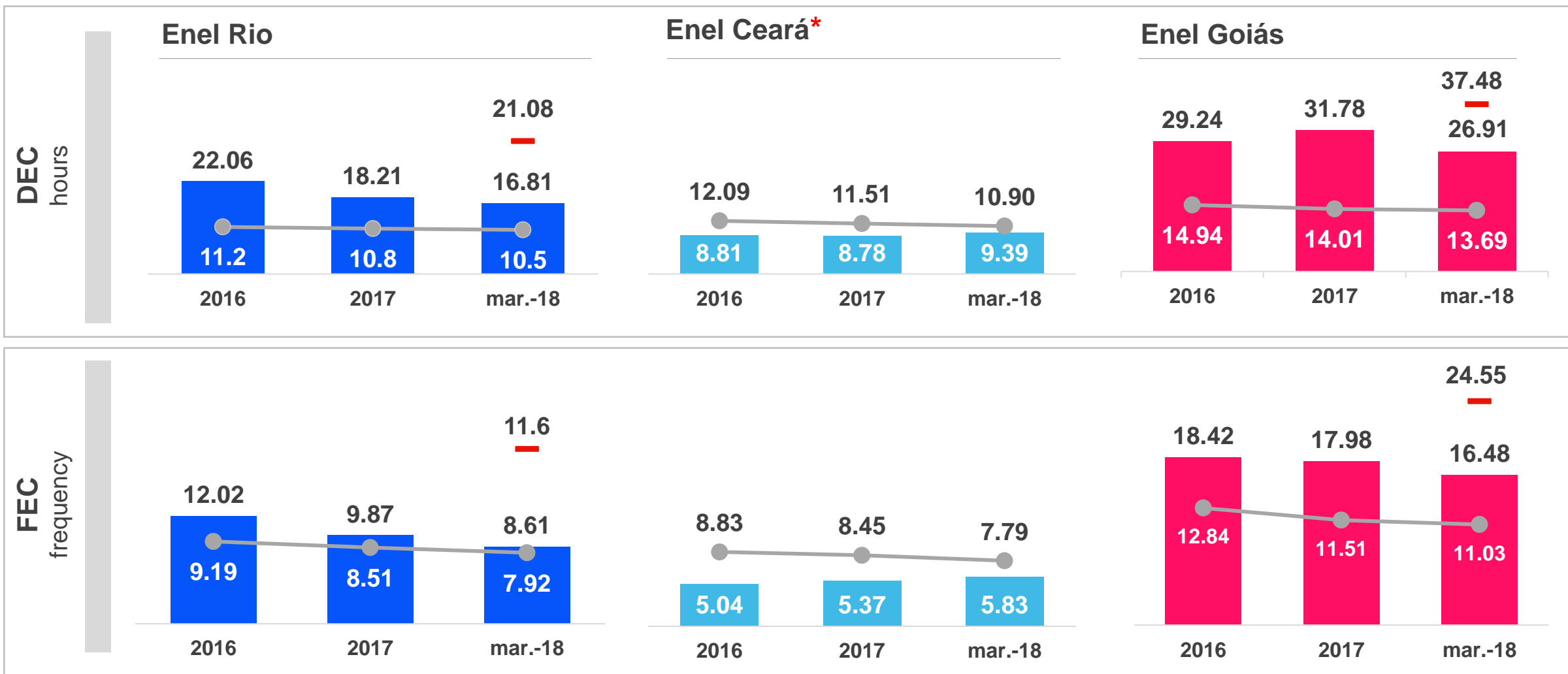


Quality of Service

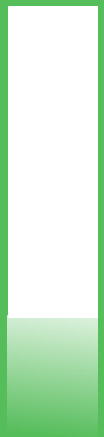
Hours and Frequency of interruptions



● Regulatory limits — Contract limits (only Rio and Goiás)



* Data includes March's 2018 Blackout at northeast region. Values without it – DEC: (9,38 - 1,21= 8,17 Hours) / FEC: (5,83 – 0,55 = 5,28 times).



Enel X

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e-Home B2C

Micro-insurance

*Third Party Billing and
Collection (Cobrança na
fatura)*

Financial Products

New Projects to Home
Solutions



e-Industries B2B

Electrical Infrastructure

Distributed Generation

Energy Efficiency

Utility Bill Management

Management Platforms

Demand Response



B2G

PPP of Public Lighting



B2B / B2G

Electric Pole and Recharge

Feasible Business Model

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Digitalization

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Digitalization programs

Overview of relevant programs for Brazil 2018-22



Program

Main initiatives

Customer	Customer Journey	Rethinking of customer experience	<ul style="list-style-type: none"> There is no power I want to be known Info on my billing I have to pay my bill I am interested in your offer
	CRM Platform	Unique solution for all markets	<ul style="list-style-type: none"> Emergency management Customer Care Sales Mobile, App & One hub
Asset	DGPlant	Operation and maintenance digitalization in thermal plants	<ul style="list-style-type: none"> Heat Rate Optimization Advanced Process Control Digital Worker Transf. Remote predictive diagnostic
	Big Data / IOT	Advanced IoT sensors and sophisticated analytical models	<ul style="list-style-type: none"> Predictive maintenance Losses reduction
	BEAT	New global platform for smart meter2.0	<ul style="list-style-type: none"> Automatic Meter Mgnt Meter data Mgnt Work-force Mgnt
	GDS Global Distribution System	Integration and standardization of technical systems	<ul style="list-style-type: none"> ERP Grid
People	Employee Journey	Employee as internal client to unlock their full potential	<ul style="list-style-type: none"> I am interested in this job I am a new hire I am travelling for job Get to now the organization
	HRM Platform	Unique front end and integration among functions	<ul style="list-style-type: none"> Frequent events Discovery / new job Productivity Reward & Development
		Infrastructures & Networks Thermal Generation Market Staff	

Digitalization

Digital Relation



15.228.139

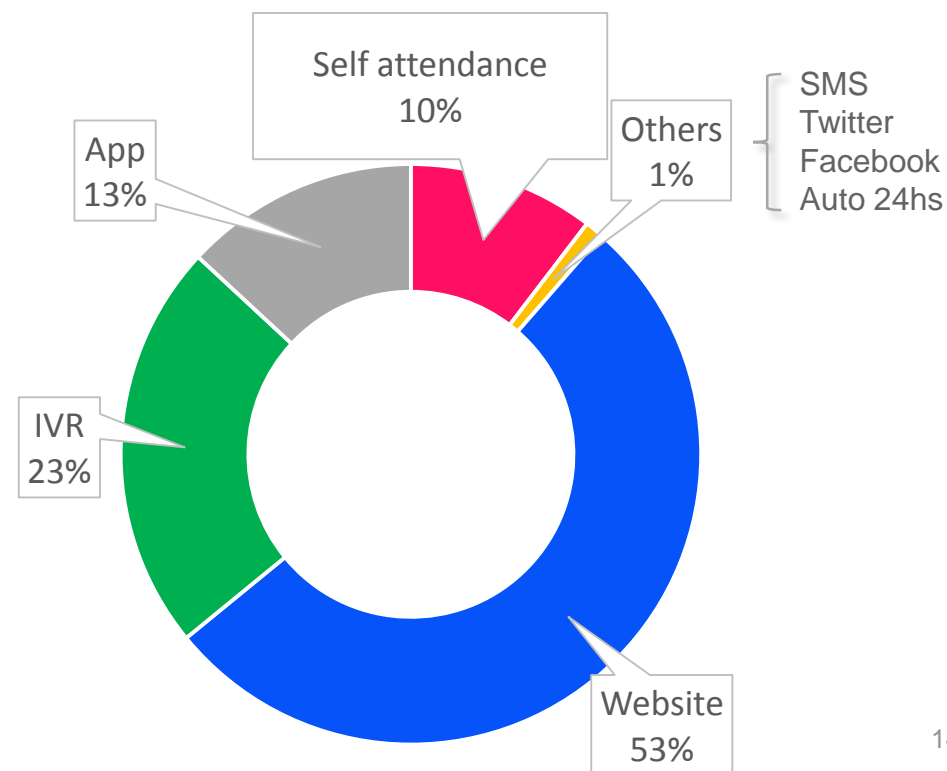
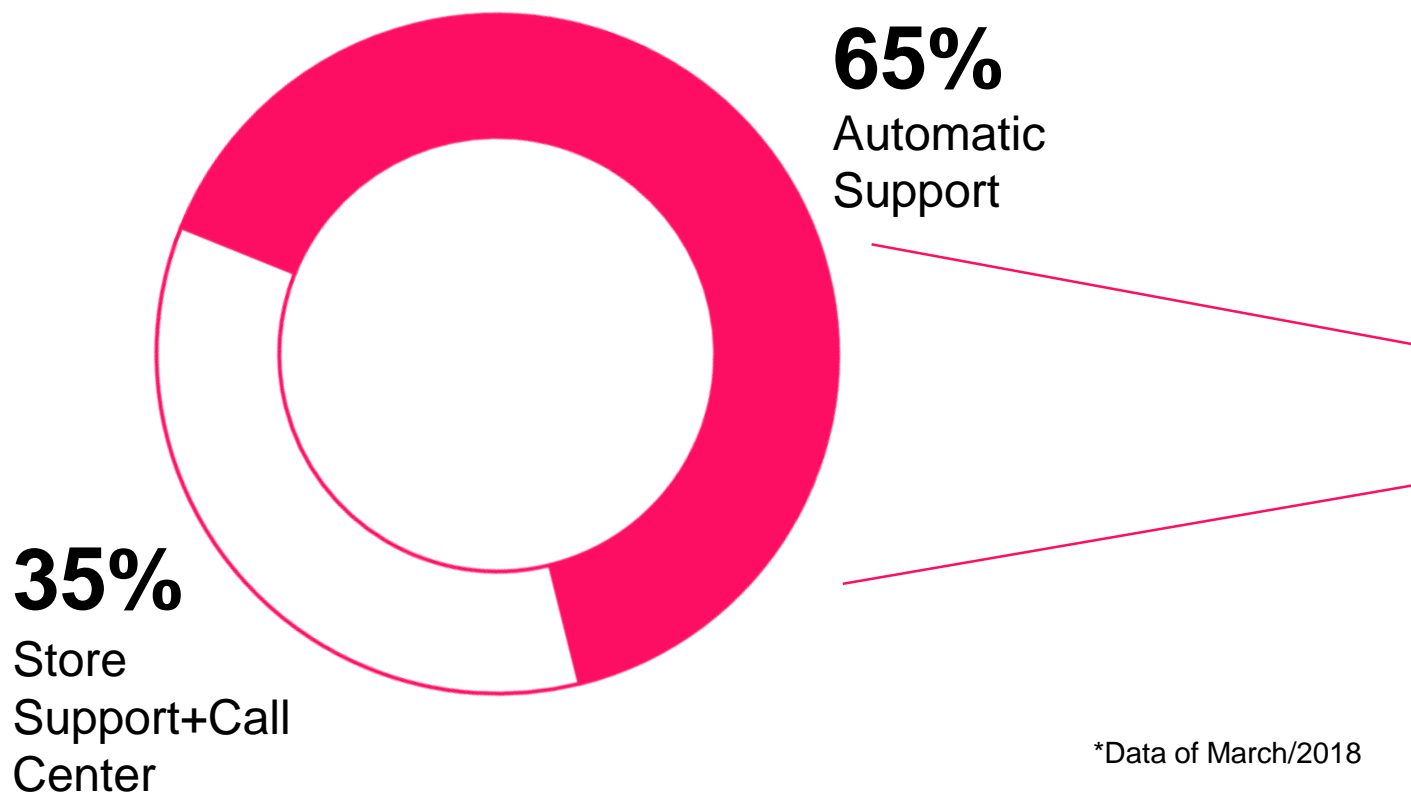
Support in 2018
(2017 x 2018 = +24%)

9.841.064

Automatic Channels
(2017 x 2018 = +46%)

5.258.205

Conventional Channels
(2017 x 2018 = -4%)

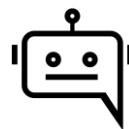


*Data of March/2018

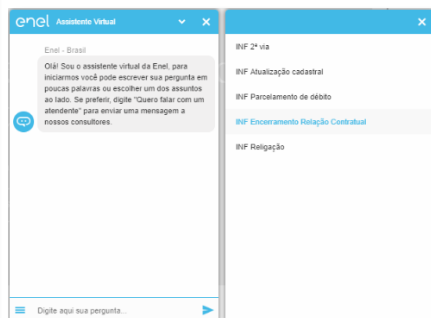
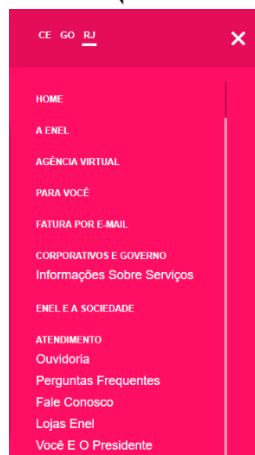
Digitalization



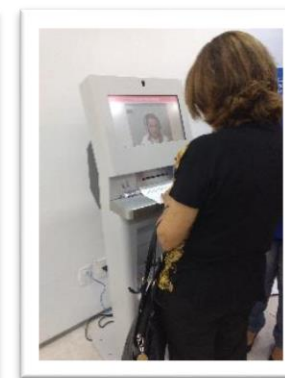
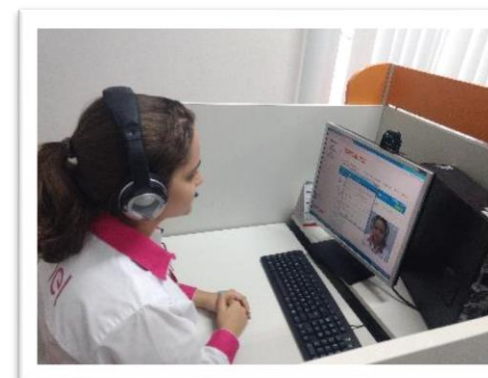
What else are we doing to make our service more efficient?



CHATBOT



Self attendance Video



Share stores



Large Customers Support Service

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Sustainability

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Sustainable Strategy




Enel commitments to the global SDGs - 2017

Contribution Enel Brasil 2015 to 2017

Main Challenges Enel Brasil

4 QUALITY EDUCATION
 **400,000 people by 2020**


119.738  **24%**

7 AFFORDABLE AND CLEAN ENERGY
 **3 million people by 2020, mainly in Africa, Asia and Latin America**

891.884  **52%**

8 DECENT WORK AND ECONOMIC GROWTH
 **1.5 million people by 2020**

181.563  **12%**

13 CLIMATE ACTION
 **< 350 gCO₂ /kWh_{eq} by 2020 (-25% vs base year 2007)**

< 90,7 gCO₂ /kWh_{eq} by 2017

Expand integrated work with the business lines to solve questions as losses, billing defaults and community relations

Expand the measurement of the value returning for the company and the projects develop for the society

Application of the Shared Value Creation tools in all assets of the company

Use digitalization in the community projects and in our internal processes

Maintain the contribution with Agenda 2030: Sustainable Development Targets

Value creation



252 Social projects,
cultural and environmental

6.8 million
benefited people

18 states
benefited

2.4 million
of income generated

431 Community leaders
engaged

Brazilian Committee of the Global Compact board member

Strategic goals for 4 of the 17 UN sustainable development goals

Recognized by “Guia Exame de Sustentabilidade” and as a Pro-Ethics company

Enel Distribuição Ceará won first place in the Abradee Prize – 2017 in Social and Environmental Responsibility category

Sustainability report in the GRI guidelines | Gold Community



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Financial Focus

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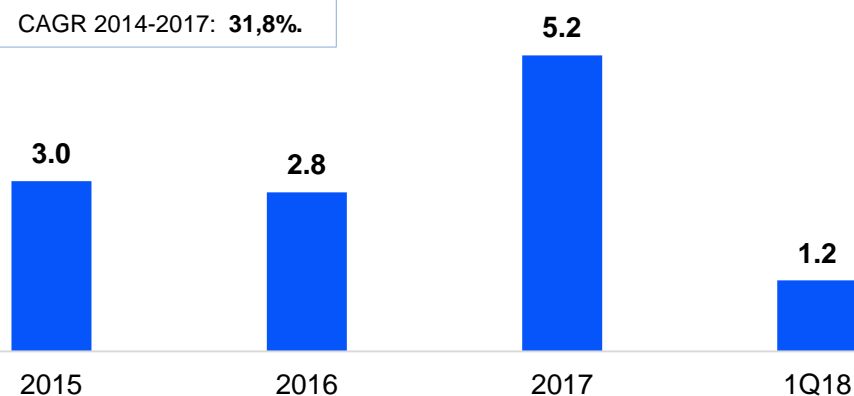
Financial Focus

Focus on Brazil (US\$ bn)

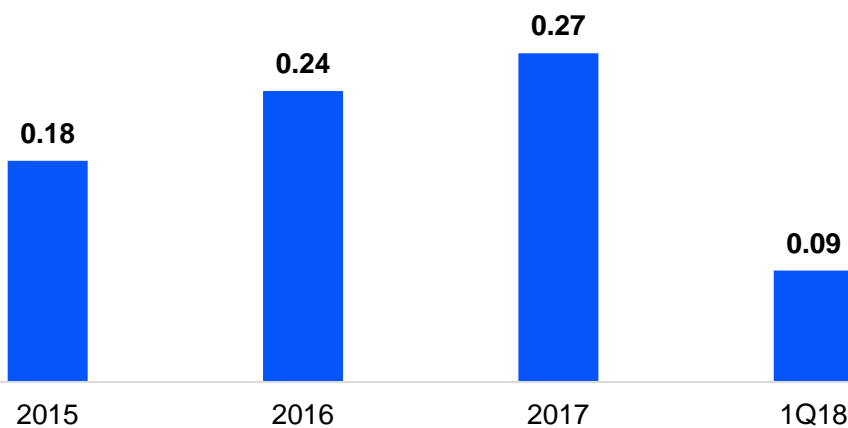


Revenues

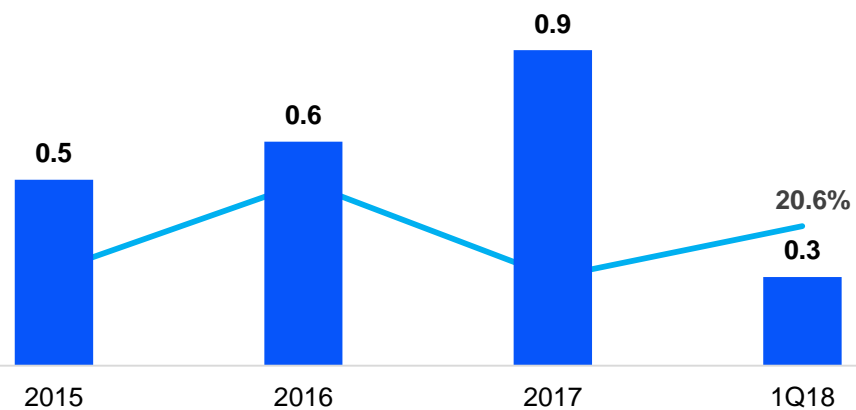
CAGR 2014-2017: 31,8%.



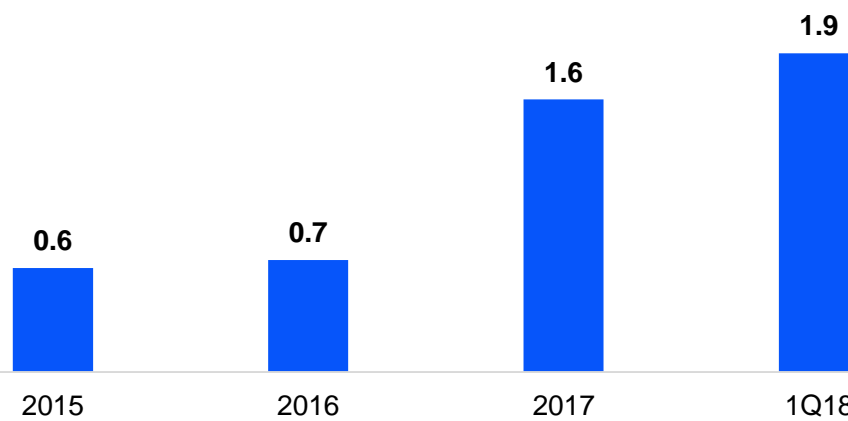
Net Income



EBITDA and Margin EBITDA



Net Debt

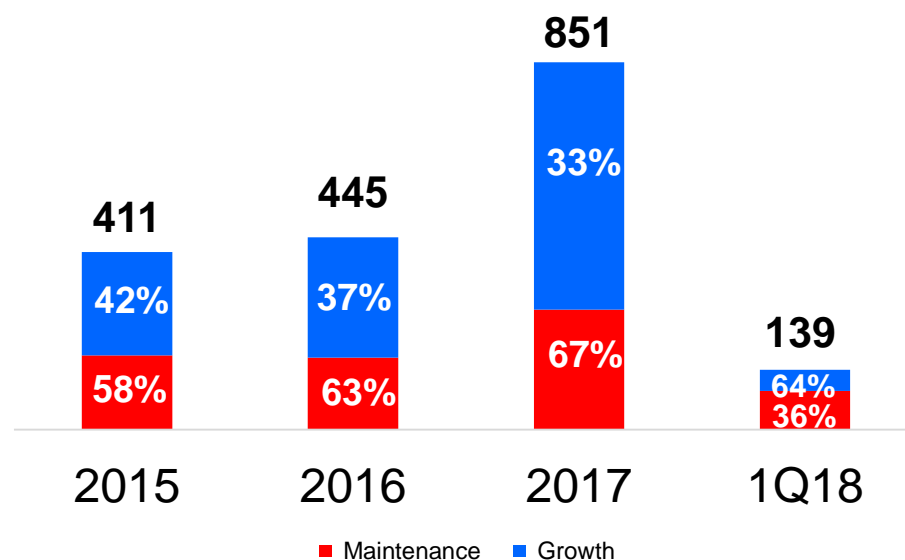


Financial Focus

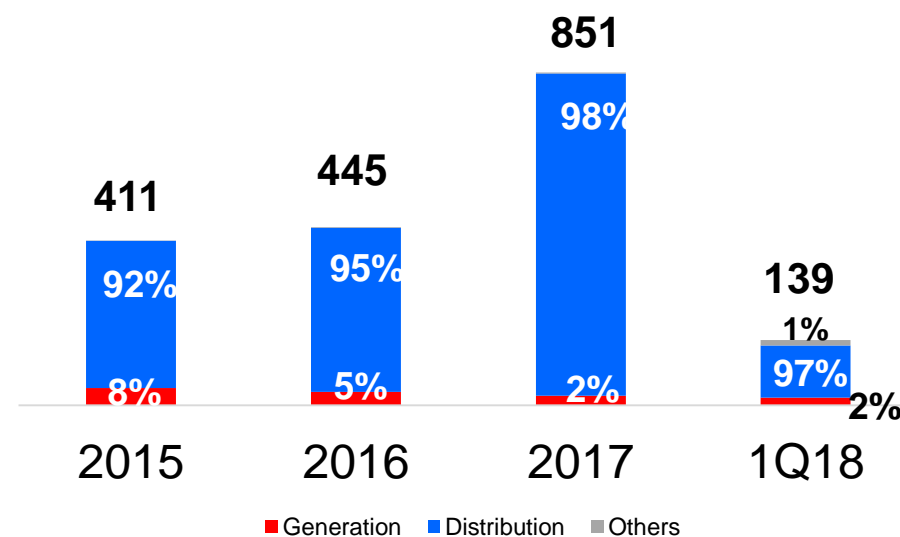
Gross Capex (US\$ m)



By Activity



By Business



Estimated investment 2018-2020: 1.5 €bn*

* Not considering M&A.

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Hot topics

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Brazil | Follow-up TermoFortaleza

Unilateral termination of the gas supply contract by Petrobras - Status, June 2018



Regulatory



Actions taken

- ✓ Presentation of two alternatives to the MME:
 - ① **Amendment to the provisional measure “MP814” (Eletrobras):** Increase of gas cost – pass through to all consumers
 - ⚠ MP 814 expired: Congressmen decided not to vote the MP
 - ② **Revision of interministerial ordinance:** increase of gas cost – pass through to Enel CE

Next Steps

- Structural Solution:
- New MP;
 - Specific Law proposal;
 - Inclusion of amendment on the Sector Reform’s Law proposal
 - Interministerial ordinance (Ministries of Mines and Energy + Finance): increase of gas cost – pass through to Enel CE

Legal



- ✗ Lawsuit closed due to Arbitration (appealed)
- ✓ New injunction to restore gas supply
- ✓ State of Ceara presented a new lawsuit to restore gas supply
- ✓ Arbitration: Actions questioning its validity

- Updating from Rio and Ceara’s lawsuits;
- Arbitrator to be nominated by ICSID (likely): parties will agree about deadline to present defenses.
- Legal Actions ongoing to cancel Arbitration

Institutional and Media



- ✓ Newspaper Article explaining the cost of activities thermal interruption for the consumers

- Work with Government and Congressmen to support the structural solution

Timeline



September 2017

Notification from Petrobras ending the gas contract



November 2017

Enel attained an injunction ensuring the gas supply



February 2018

Judge denied the injunction



March 2018

Gas Supply was interrupted
Termofortaleza out of operation



June 2018

New injunction ensuring gas supply
Termofortaleza restored operation

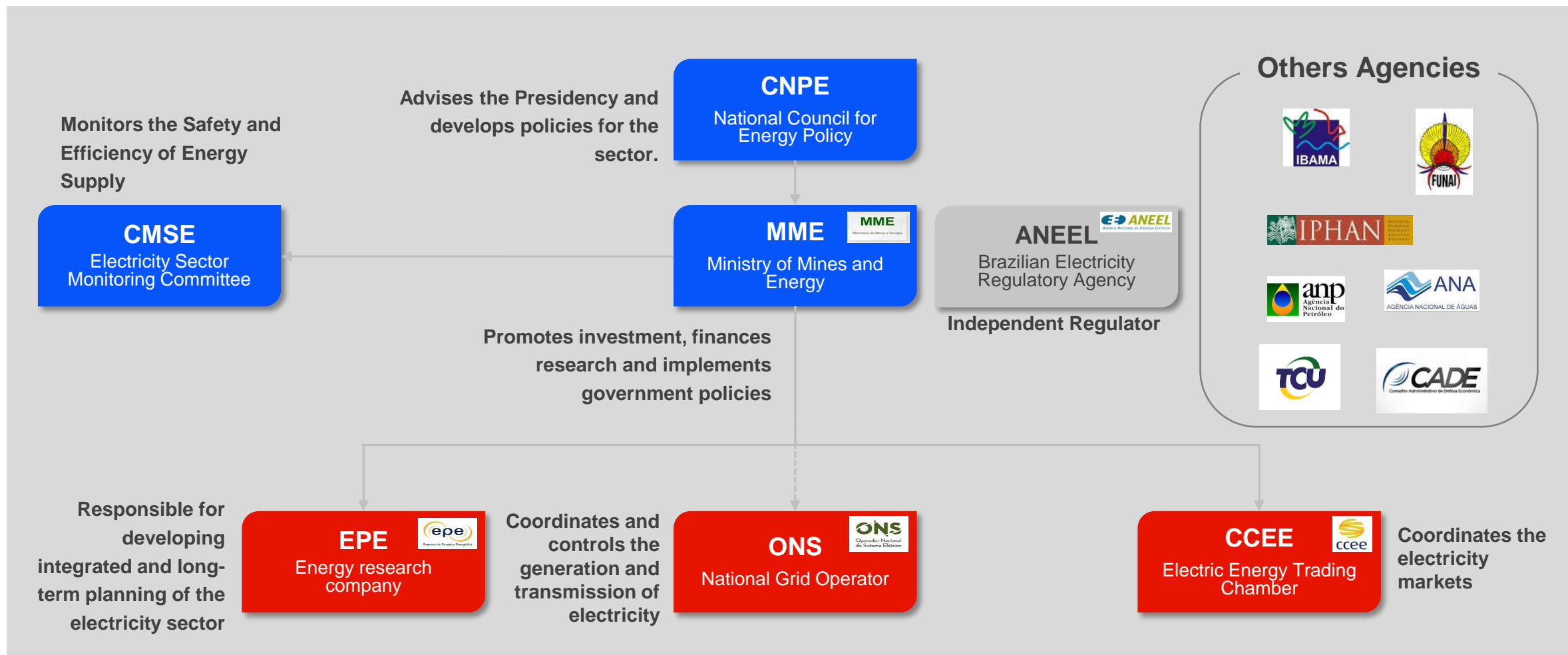
Brazilian Regulatory Framework

Anna Pacheco

*Head of Regulation
Enel Brasil*

Sectorial Context | Sector Governance

Main government agency



Sectorial Context | Energy Market Structure

Rules and structure



Who can participate?

Large consumers (≥ 3 MW)

Special consumers ($0,5 \text{ MW} \leq \text{cl} < 3 \text{ MW}$)
renewable energy only

What is the term of PPAs in regulated auctions?

New energy: 15-30 year contracts

Existing energy: 1-15 year contracts




How does Settlement Market work?

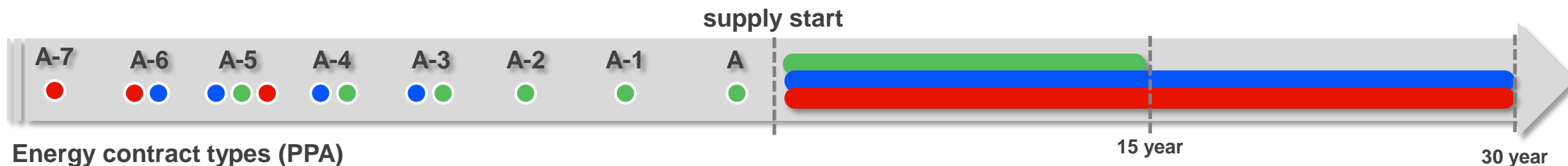
Monthly settlement of the difference between generation and contracts at Spot Price (PLD)

Sectorial Context | Regulated Auctions

Promoted by MME to guarantee energy supply



Energy	Existing energy 	New energy 	New energy + Transmission 
	<ul style="list-style-type: none"> ▪ supply start: same year (A) – until 5th year (A-5) ▪ PPA: between 1-15 years 	<ul style="list-style-type: none"> ▪ supply start: from 3rd year (A-3) to 6th year (A-6) ▪ PPA: between 15-30 years 	<ul style="list-style-type: none"> ▪ supply start: from 5th year (A-5) to 7th year (A-7) ▪ PPA: between 15-30 years



Energy contract types (PPA)

Availability	<ul style="list-style-type: none"> ▪ Fixed: assets remuneration and fixed costs ▪ Variable: declared cost in auction x MWh ▪ Thermal, wind and solar plants 	Quantity	<ul style="list-style-type: none"> ▪ MWh x Price (auction) – function of amount of energy contracted ▪ Hydro, wind and solar sources
	Other Auctions		<ul style="list-style-type: none"> ▪ Adjustment Auction: Up to 5% of the Dx load with supply up to 2 years ▪ Reserve Auction: Objective of guaranteeing energy security. Paid by all consumers (Sector Charge)

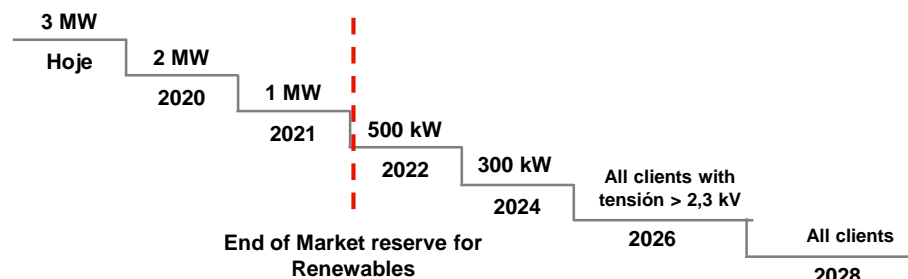
Sectorial Context | Electricity Market reform

Draft bill 1917/2015



Free Market Growth

- **Gradual opening of the free market to all consumers until 2028**
- By 2022 the government will have to present a study to extend liberalization to the low voltage (LV) market



Separation energy and capacity

- **Separation of capacity and Energy from 2021:** capacity paid through sectorial charge by all consumers
- **Auctions segmented by energy source, attributes valuation,** hybrid projects and storage



Possibility minimum renewable purchase requirement for each consumer
(free and regulated)

Carbon Market

- **Creation of a low carbon emission market on 2021**



Sectorial Context | Electricity Market reform

Draft bill 1917/2015



Price and Operation

- Possibility of change from computer system cost optimization model dispatch to price offer dispatch
- Hourly SPOT price starting from 2020

Distribution tariff model

- Possibility of distribution tariff independent of the distributed energy volume



~ 99% of the Enel Dx meters (~ 10 million) needed to be replaced to be able to apply the binomial rate

Delinquency and losses

- Legal reinforcement of actions to combat loss and delinquency
- Compulsory adhesion to prepaid tariff modality for customers with recurring delinquency

The law proposal is not very specific, relevant details that can make the difference will be defined in subsequent secondary regulation

Sectorial Context | Main events in coming months

Next generation, transmission and distribution auctions



■ Distribution Auctions:

- **6 distributors** from the states of Amazonas, Acre, Roraima, Rondônia, Piauí and Alagoas
- **4,6 million consumers** (5,7% of Brazilian market)
- Approximately **2,46 million km²** (29% of the national territory)
- **Scheduled for July 26**

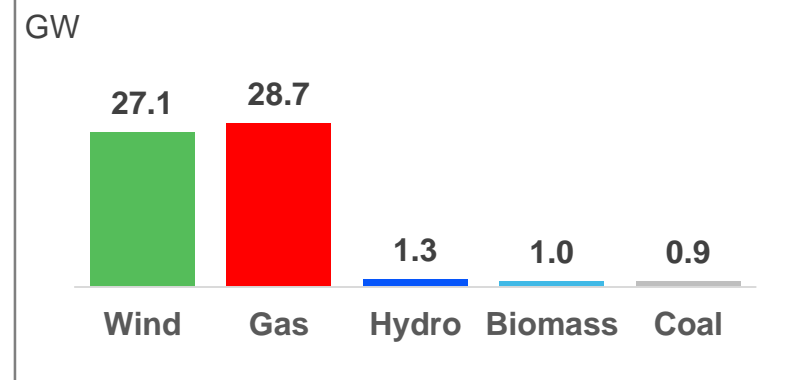
■ A- 6 Energy Auctions:

- **Scheduled for August 31**
- **1.090 Registered Projects** – 59 GW capacity

■ Transmission Auction:

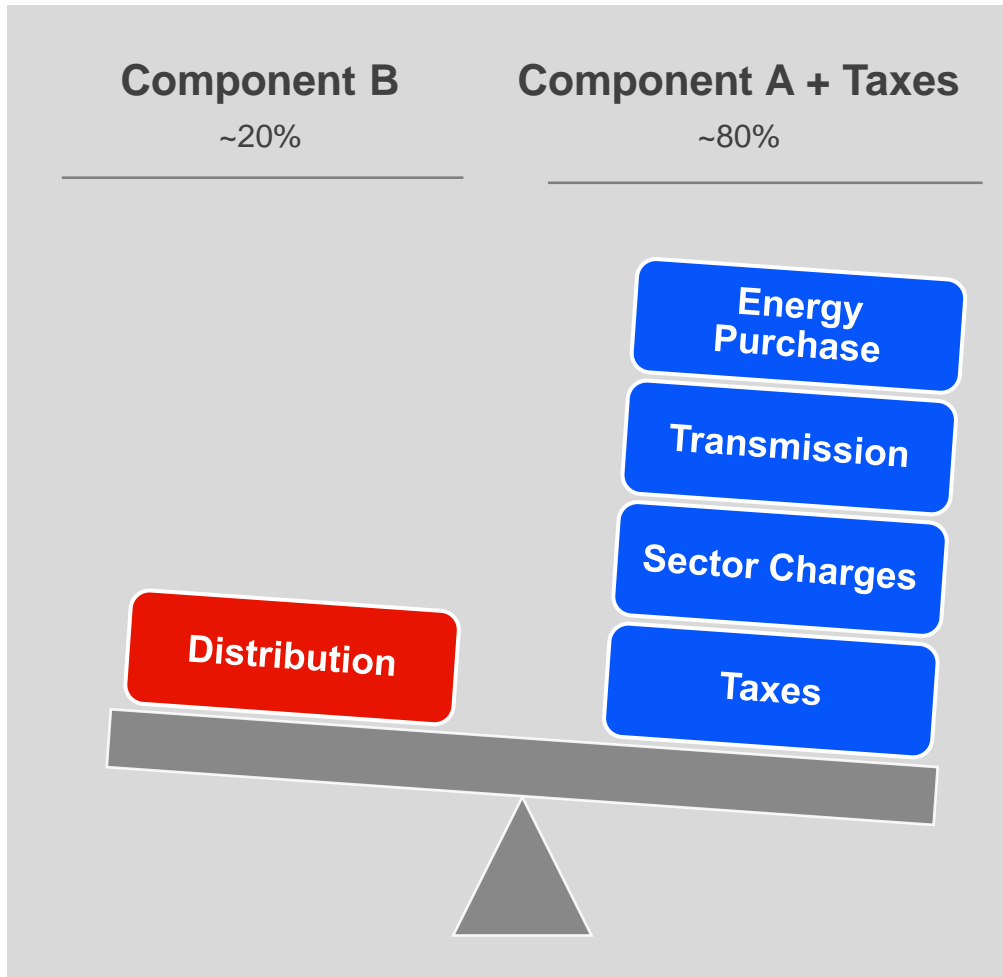
- **Scheduled for June 28**
- **24 lots with 60 projects located in 18 states:**
3.954 Kilometers of transmission lines

Registered Projects



Dx Regulation | Tariff Structure

The tariff is divided into two parts, Components A and B



Power Purchase

- **Public auctions based on lowest price** (negotiations between Dx and Gx are not allowed)
- **Obligation of 100% long term contractual coverage** (with pass-through tariff up to 105%)

Transmission

- **National grid costs are shared between Dx, Gx and free consumers** (50% for Gx side and 50% for consumption side)

Sectorial Charges

- **Tariff subsidies costs are shared between all Dx** (low income customer, renewable generation, thermal power plant fuel costs, etc)

Distribution

- **Distribution Opex and Investment Remuneration**
- **Regulatory losses and delinquency costs**

Dx Regulation | Tariff Structure

The tariff is divided into two parts, Components A and B



When Tariff is update?

- Annually in the Tariff Adjustment
- Every 4/5 years in the Periodic Tariff Reviews

How Tariff is update?

- **Component A items:** The new costs are pass-through to consumers annually (in the Annual Tariff Adjustment and in the Periodic Tariff Reviews)
- **Component B:**
 - **Annual Tariff Adjustment:** Component B is update by market growth + inflation (discounted factor of quality and productivity)
 - **Periodic Tariff Reviews:** Component B is recalculated

How is Component B defined in the Tariff Reviews?

Operational Costs

OPEX Benchmarking Analysis

Investment remuneration

Net Remuneration Asset Base x WACC

Depreciation

Gross Remuneration Asset Base x % of depreciation

Losses and default rate

Non Technical Losses and delinquency rate based on socioeconomic model and benchmarking

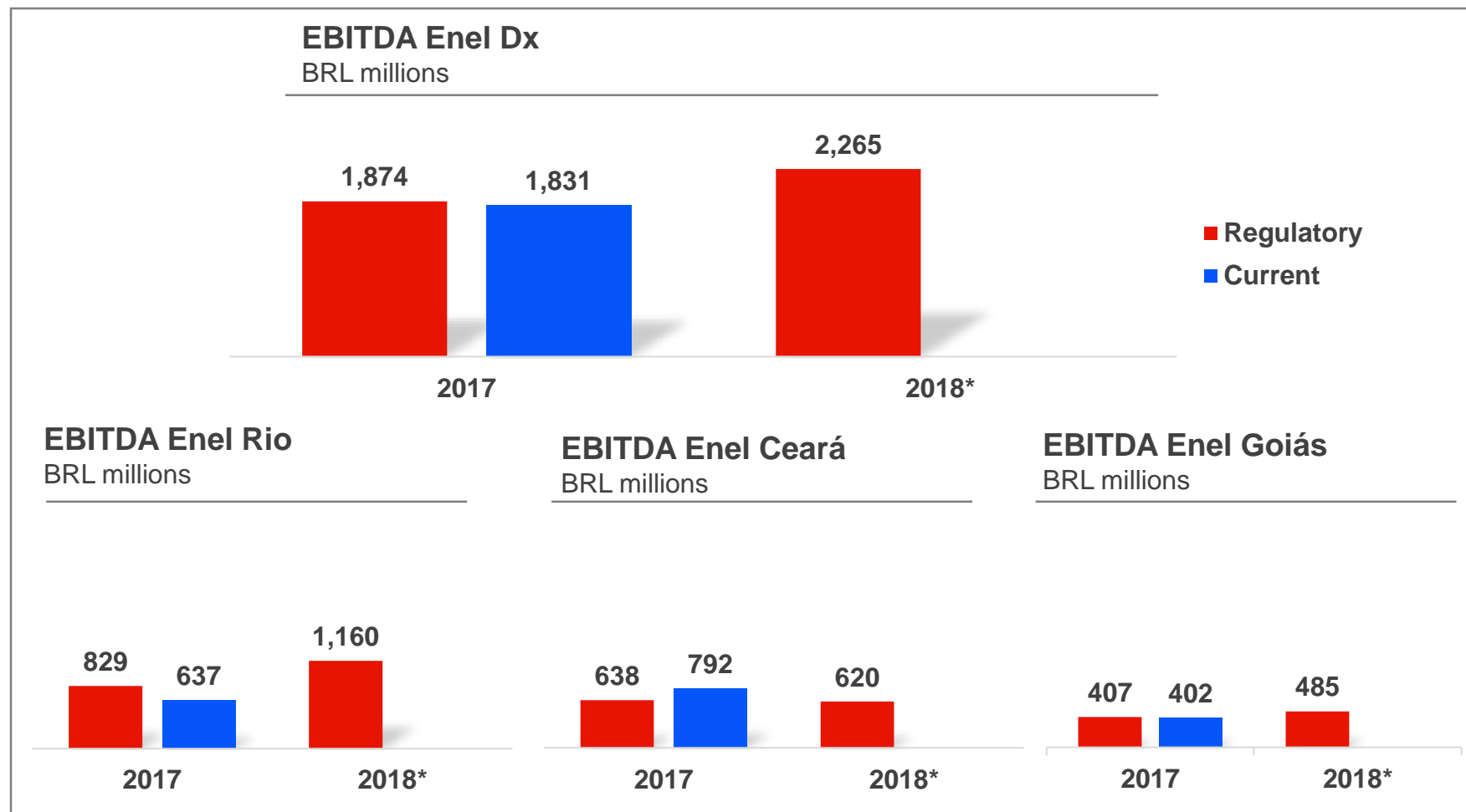
Dx Regulation | Regulatory vs. Real

Current situation



Key issues

- **Enel Rio:** The main offenders remain the non-technical losses, delinquency rate and the adequacy of the quality indicators the company's service to the regulatory standards
- **Enel Ceará:** The Company is in a better position than the defined regulatory parameters. Losses remain a regulatory challenge
- **Enel Goiás:** 2018 tariff revision should increase the gain from October. The main challenge is to adapt the quality of service indicators to the regulatory standards



Source: Aneel

*Based on the result of 2018 tariff adjustments defined by Aneel

Dx Regulation | Ongoing actions

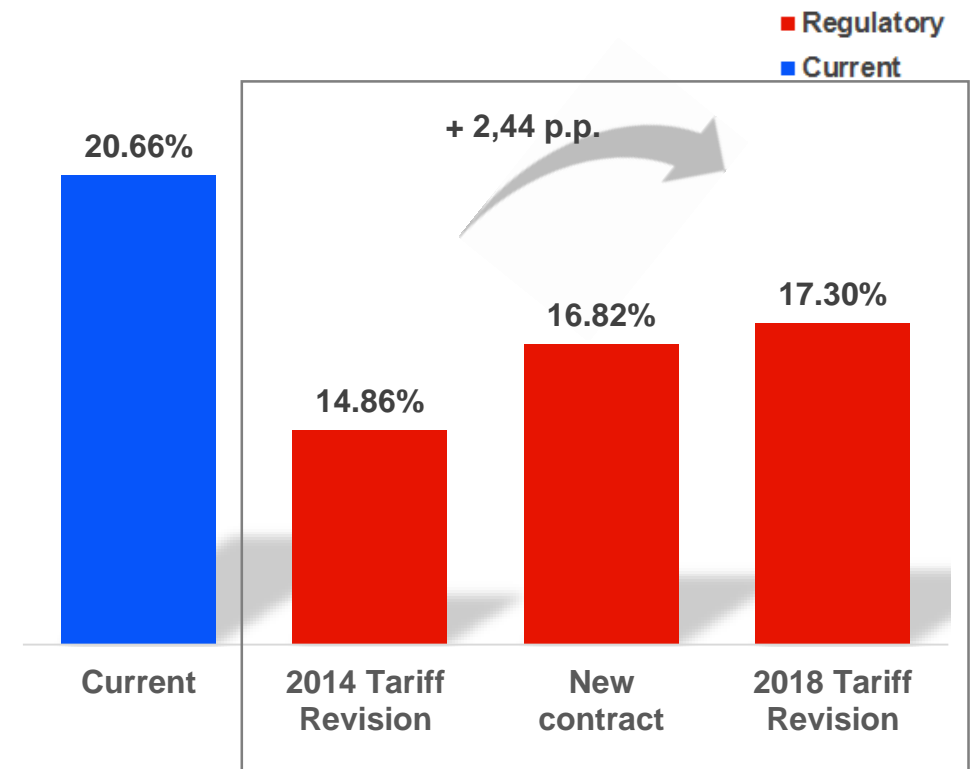
What is being discussed with the Regulator



Enel Rio Energy losses

- **The new contract addendum and the 2018 Tariff Review** led to a partial recognition of the risk areas and to the full recognition of the technical losses of the distributor
- Enel is working with the Pontificia Universidade Catolica of Rio, the Federal University Fluminense and Siglasul consultants to ensure the recognition of losses in the areas of Risk
- **The non-technical regulatory losses of Enel Rio should be defined until March 2019**

Enel Rio Energy Losses from apr/2017 to mar/2018
% Energy demand



- **New Contract:** partial recognition of Risk Areas
- **Tariff revision:** New Regulatory Technical losses

Dx Regulation | Ongoing actions

What is being discussed with the Regulator



Enel Rio Delinquency

- Enel is working with the Pontificia Universidade Catolica of Rio, the Federal University Fluminense and Siglasul consultants to ensure the recognition of delinquency rate in the risk areas
- The issue should be discussed with Aneel together non-technical losses

Enel Rio Quality of Service

- Enel has been working with Aneel to ensure a flexibility in the quality of service targets with the recognition of the impacts of risk areas
- During 2018 will be discussed by Aneel changes in the methodology used to defined the financial compensation for noncompliance with quality indicators

Enel Américas' 2018 Analyst Update Meeting

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