Tractebel Energia



Results Presentation 1Q16

Disclaimer

The information contained herein has been prepared by Tractebel Energia S.A. ("Tractebel Energia", "Tractebel" or "the Company") solely for meetings to be held with investors and/or potential investors. This material does not constitute offering material in whole or part, and you must obtain further information before making an investment decision in respect of the common shares of the Company.

This material has been prepared solely for informational purposes and is not to be construed as a solicitation or an offer to buy or sell any securities and should not be treated as giving investment advice. It is not targeted to the specific investment objectives, financial situation or particular needs of any recipient. No representation or warranty, either express or implied, is made as to the accuracy, completeness or reliability of the information contained herein. It should not be regarded by recipients as a substitute for the exercise of their own judgment. Any opinions expressed in this material are subject to change without notice and Tractebel Energia is not under obligation to update or keep current the information contained herein.

The Company and their respective affiliates, agents, directors, partners and employees accept no liability whatsoever for any loss or damage of any kind arising out of the use of all or any part of this material.

You should consult your own legal, regulatory, tax, business, investment, financial and accounting advisers to the extent that you deem necessary, and you must make your own investment, hedging or trading decision based upon your own judgment and advice from such advisers as you deem necessary and not upon any view expressed in this material.

This material includes forward-looking statements subject to risks and uncertainties, which are based on current expectations and projections about future events and trends that may affect the Company's business. These statements include projections of economic growth and energy demand and supply, as well as information about competitive position, the regulatory environment, potential opportunities for growth and other matters. Several factors may adversely affect the estimates and assumptions on which these statements are based, many of which are beyond our control.

01

Highlights, Shareholding Structure, Market Share, Assets and Sales



Highlights

Main financial and operational indexes:

(in R$ million)	1Q16	1Q15	Chg.
Net Revenue from Sales (NRS)	1,602.7	1,618.0	-0.9%
Results from Operations (EBIT)	638.6	643.1	-0.7%
Ebitda [1]	792.7	789.8	0.4%
Ebitda / NRS - (%) [1]	49.5	48.8	0.7 p.p.
Net Income	347.1	344.8	0.7%
Net Debt [2]	1,074.9	2,229.1	-51.8%
Power Production (avg MW) [3]	5,493	5,974	-8.1%
Energy Sold (avg MW)	4,060	4,245	-4.4%
Average Net Sales Price (R$/MWh) [4]	177.29	167.35	5.9%
Number of Employees	1,167	1,180	-1.1%

Notes:
[1] Ebitda represents: net income + income tax and social contribution + financial results + depreciation and amortization.
[2] Adjusted amount, net of gains from hedge operations.
[3] Total electricity output from the plants operated by Tractebel Energia.
[4] Net of taxes and exports.

Highlights (cont'd)

The Photovoltaic Solar Energy R&D Project received the 23rd Expression in Ecology Award, Technological Innovation category.

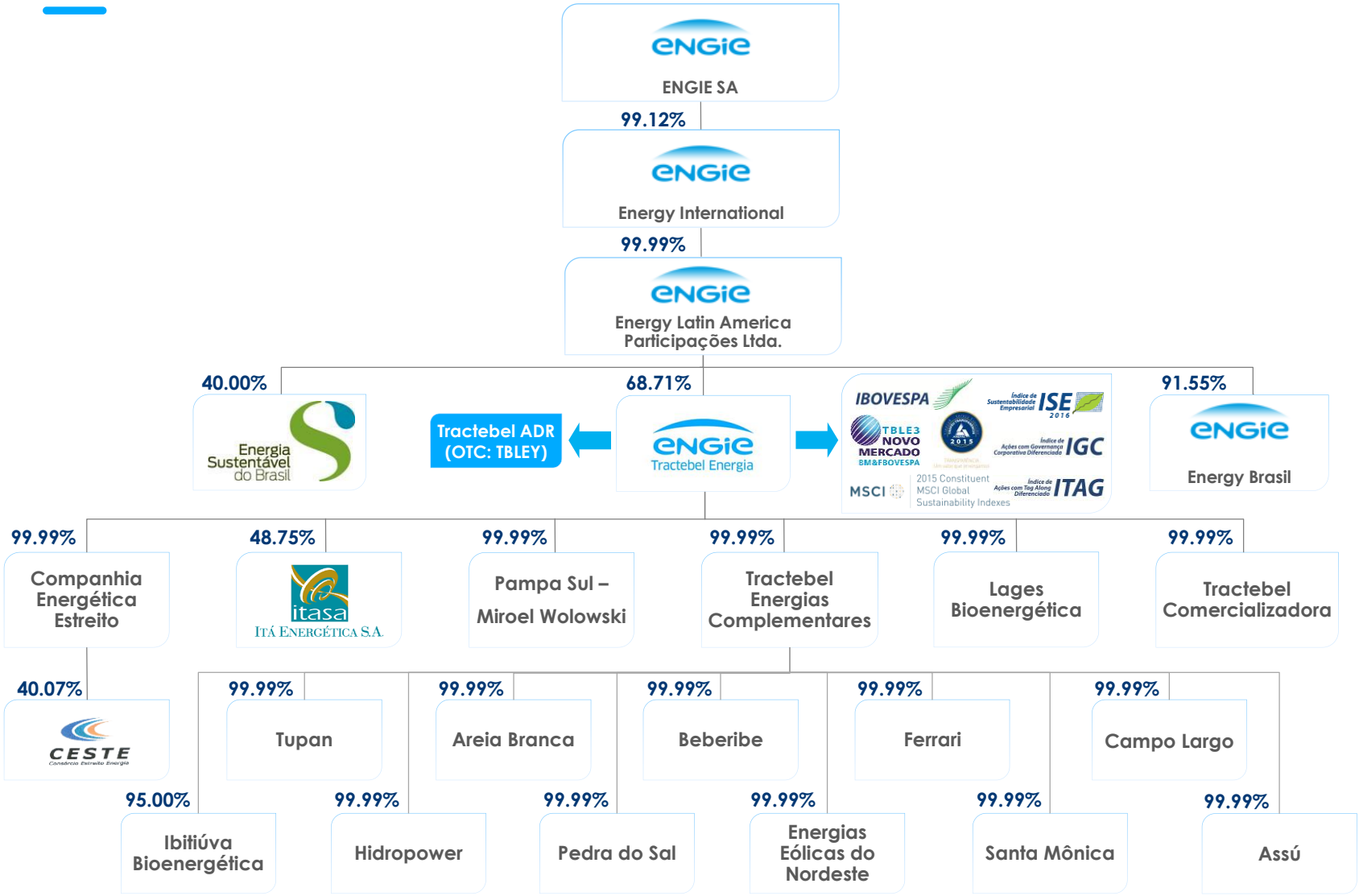
Fitch Ratings reiterated its Long Term National Rating at 'AAA(bra)' with a stable outlook. Ratings on the international scale were also reiterated at 'BBB' for local currency issues with a stable outlook and 'BBB-' with a negative outlook for foreign currency issues, the latter reflecting the recent downgrading in sovereign debt to 'BB+'.

The Company acquired 50% of the capital stock of ENGIE Solar, which is part of the Araxá Group, one of the leaders in the Brazilian market for the distributed solar generation.

In the context of projects under construction, the Pampa Sul TPP hired the suppliers of the coal conveyor and transmission line, whose DUP was issued by Aneel, additionally the first batch of metal structures of the boiler have arrived in the Country.

At the Santa Monica Wind Complex, the assembly of the first wind turbine tower was concluded using the unique Eolift mechanism.

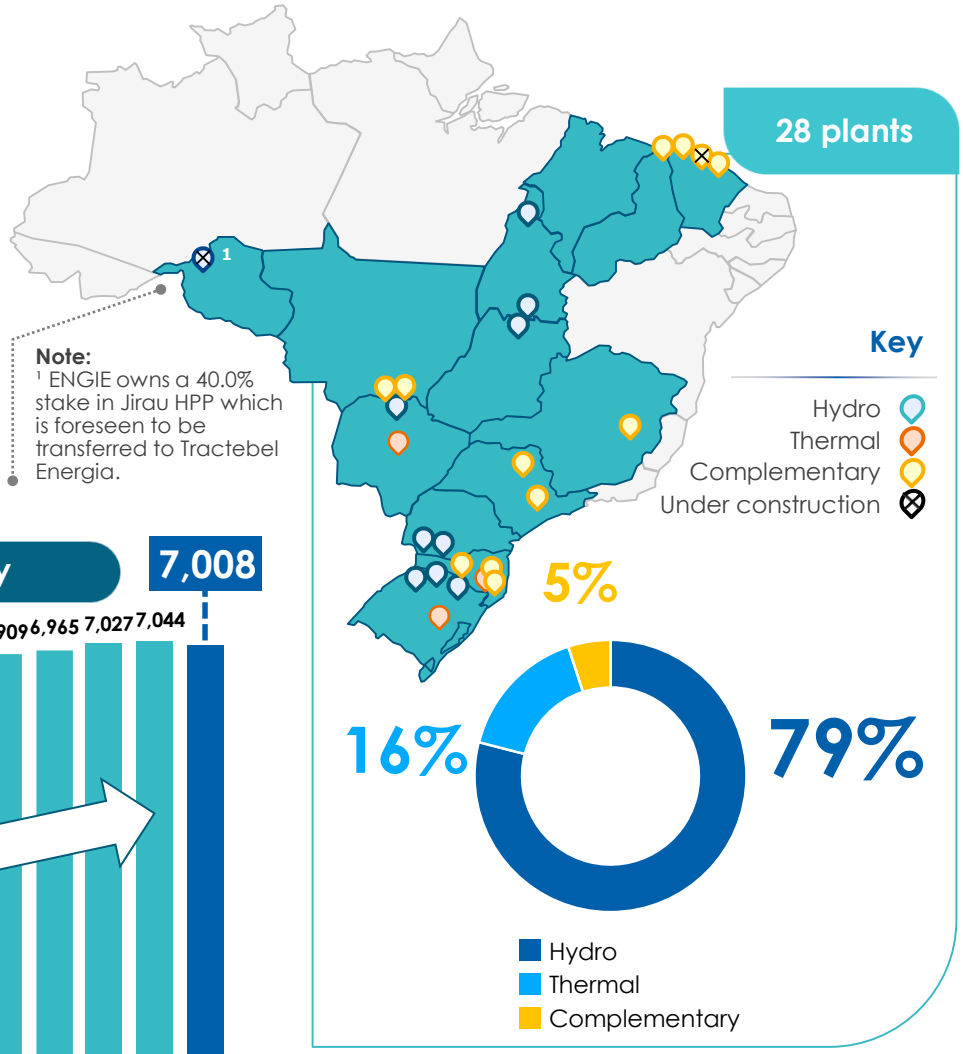
Shareholding structure of Tractebel Energia

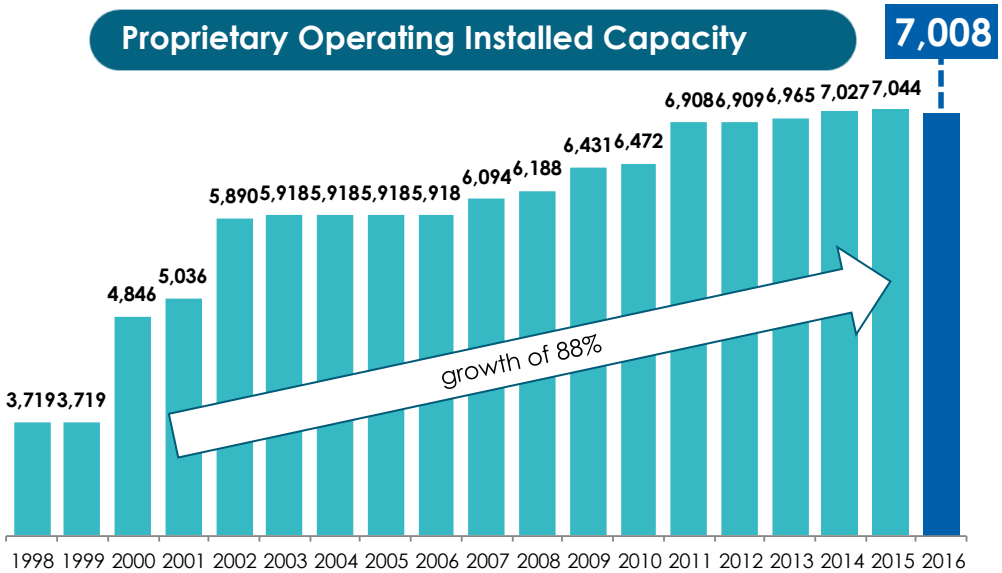


Simplified version

Diversified portfolio of assets, with strategic location

Own installed capacity of
7,008.3 MW from
28 plants
operated by the Company in a
diversified portfolio

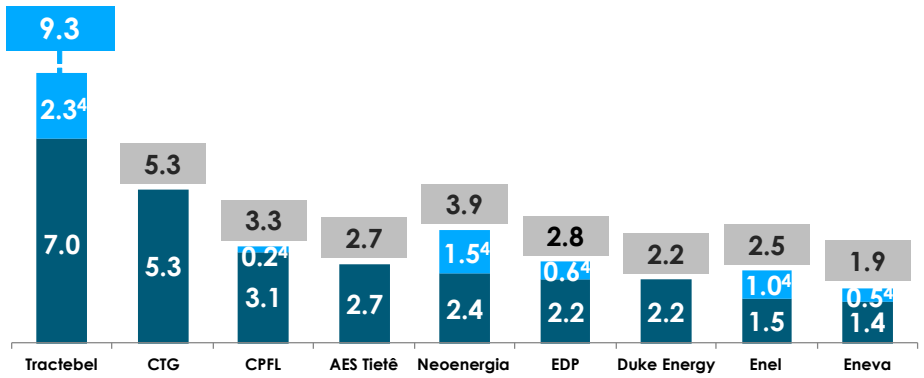




Leading position in the generating sector

Tractebel Energia is the largest private player in the Brazilian generating market...

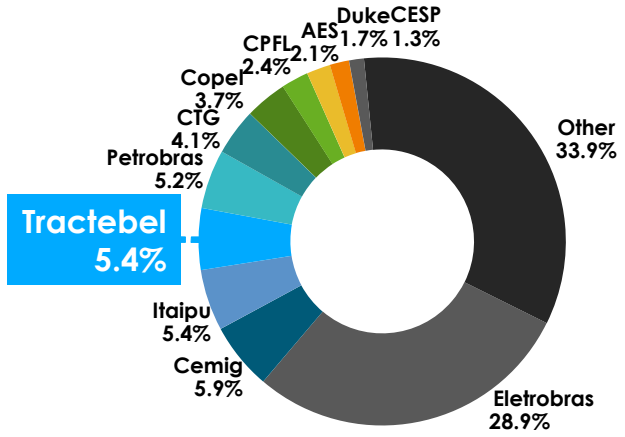
Private Sector – Installed Capacity[1] (GW)



Source: Aneel, Companies' websites and in-house studies.

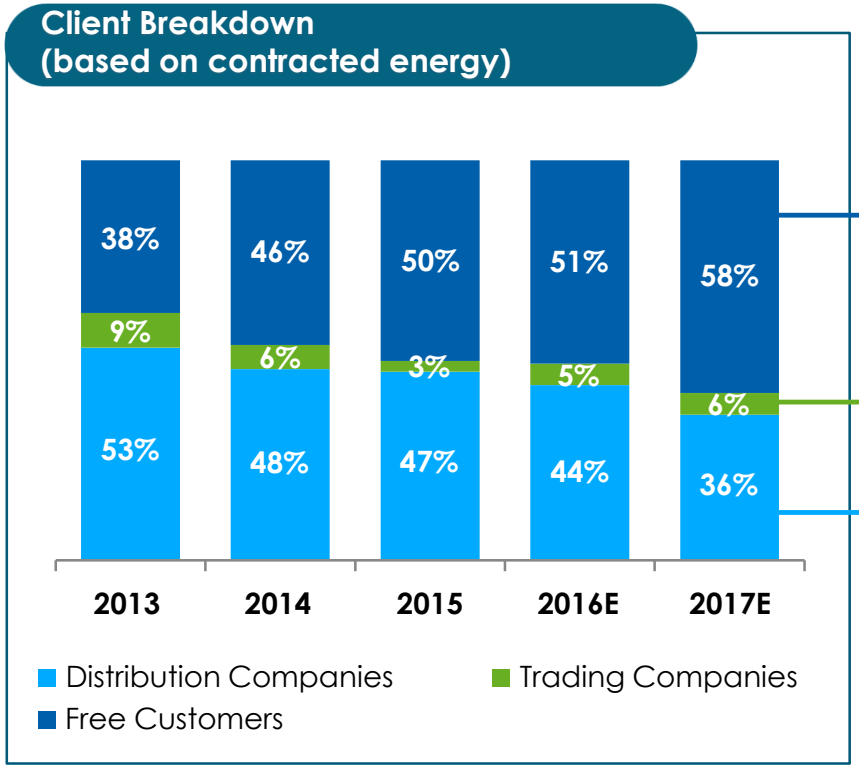
Notes:
[1] Apparent sum-related errors are a result from rounding of addends.
[2] Amount corresponding to SIN – National Interlinked System.
[3] Includes only the Brazilian part of Itaipu.
[4] Installed capacity under construction based on information from Aneel, ONS and internal study. For Tractebel, the figure includes the plants under construction according to slide 39 of this presentation.

Brazil – Existing Installed Capacity[2,3]



...and is well positioned to capture business opportunities.

Diversified portfolio among distribution, free customers and trading companies



First to consistently serve the free market…

- Flexibility (prices, terms and conditions) → Maximizes portfolio's efficiency
- Opportunistic contracts (purchase/sale) → Product assembly
- Largest consumer market
- Regulated and unregulated contracts

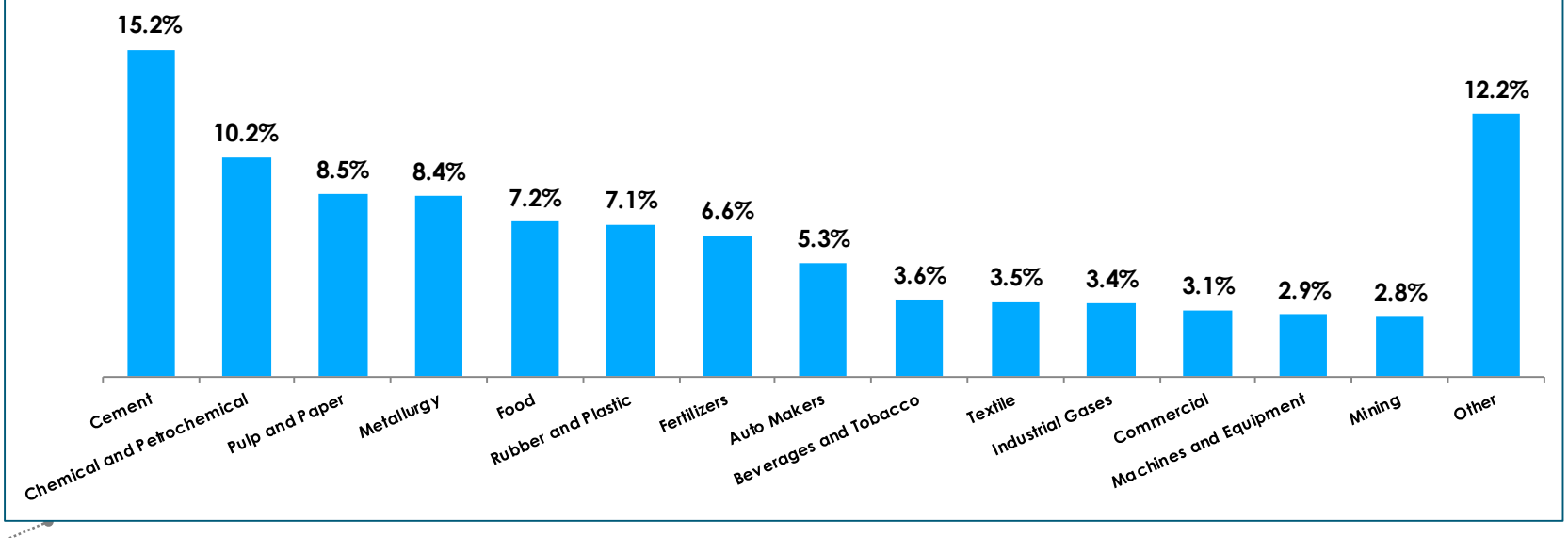
→ Long-term cash flow predictability

…to minimize risks and to maximize portfolio's efficiency.

Diversification also within the free customers portfolio

Free customer industry diversification and a strict credit assessment policy allow for a zero default reality.

Free customers total sales volume for 2016: 2,088 average MW



Source: Internal study based on IBGE's classification.

02

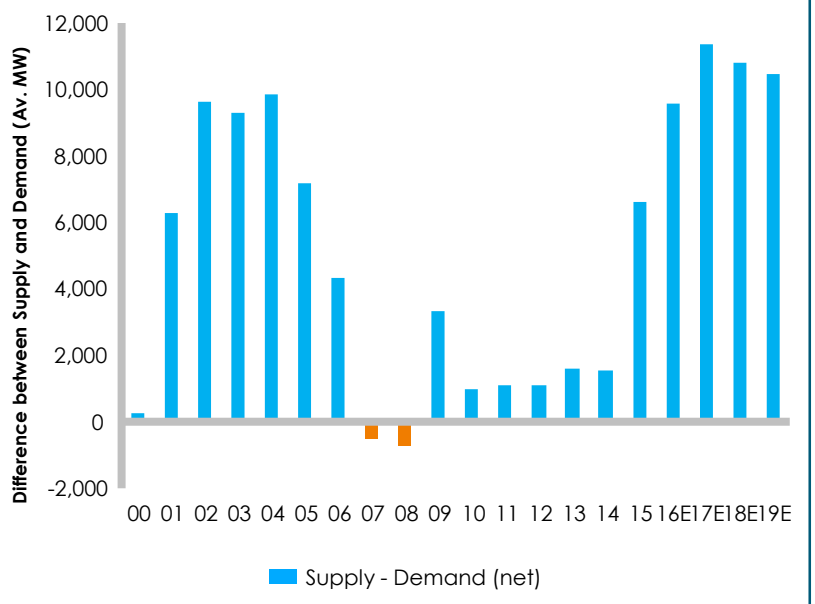
Energy Market In Brazil



Decline in demand brings theoretical improvement in the short term energy balance

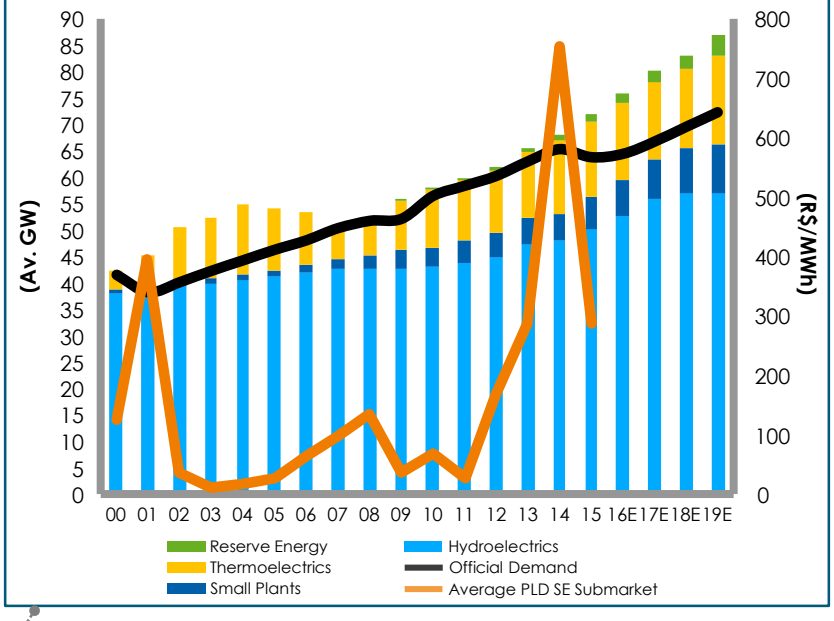
However, long term price support will be maintained due to the increased share of thermoelectric generation in the energy matrix and its dispatch to guarantee supplies to the system, delays in the implementation of projects, priority given to the construction of run-of-river hydroelectric plants, cost pressures following the recent devaluation of the Real and income redistribution.

Energy Market



Source: Tractebel Energia internal study based on the Monthly Operations Plan (PMO) for April 2016.

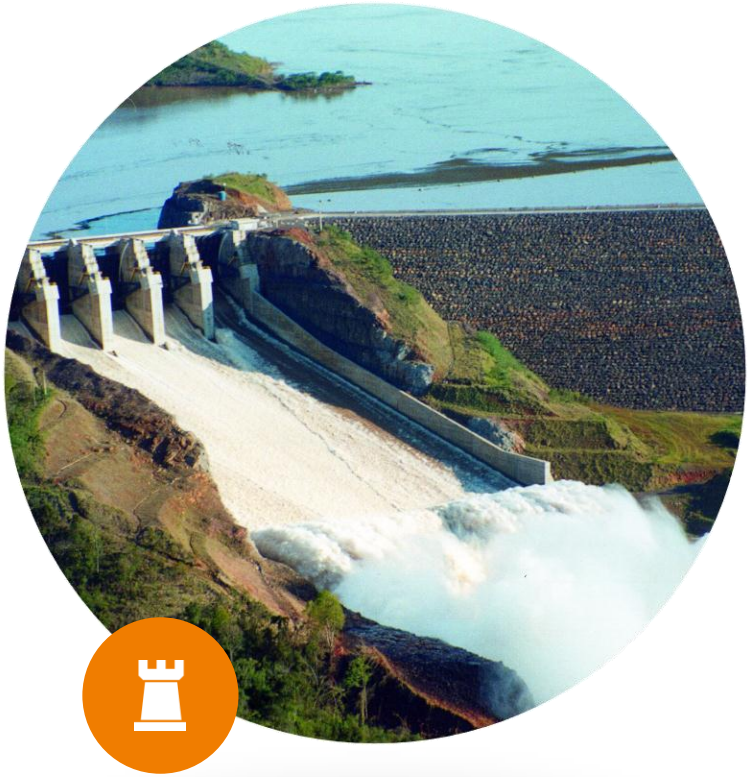
Distribution of Supply by Source



Source: Internal study based on ANEEL and ONS data.

03

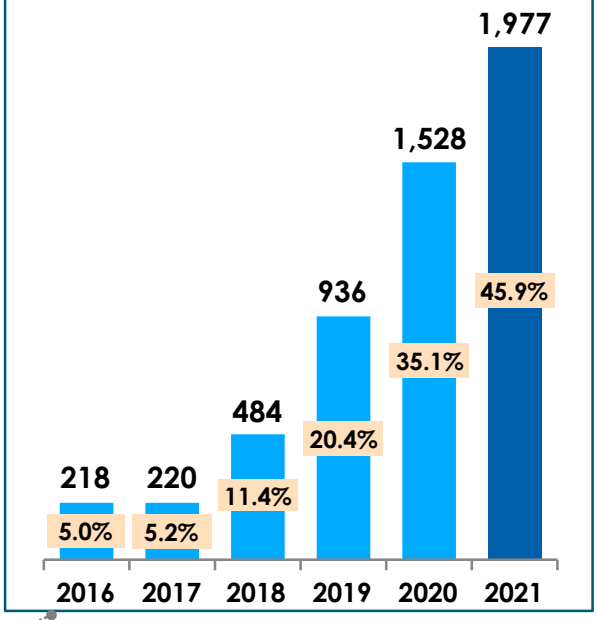
Sales Strategy



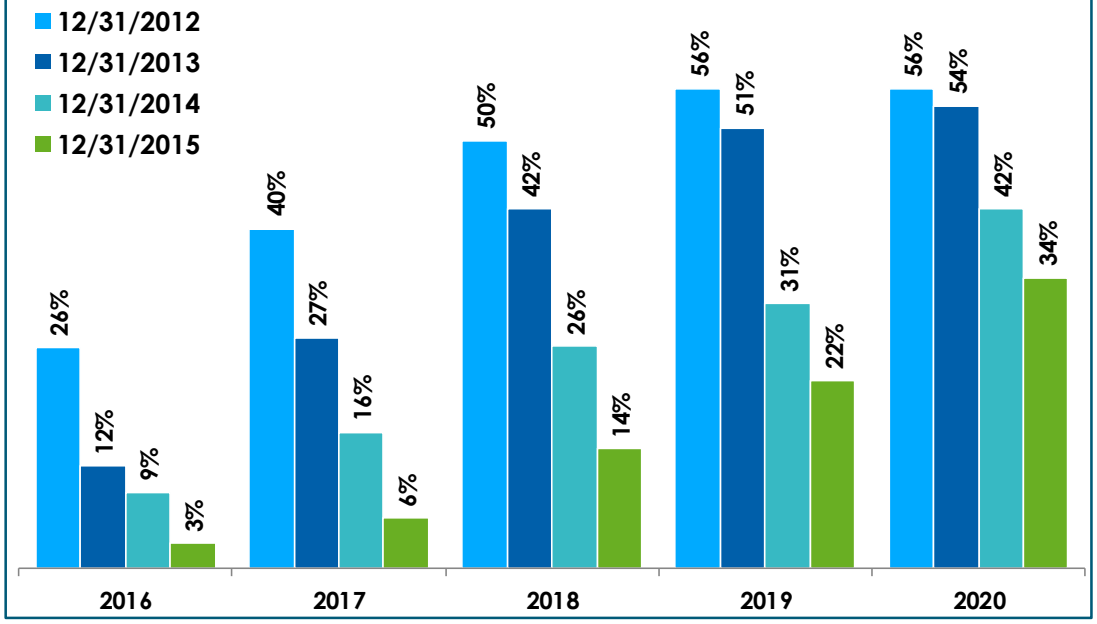
Tractebel`s commercial strategy considers the gradual sale of future availability

Tractebel Energia's uncontracted energy[1]

(average MW)



Tractebel: Uncontracted energy compared to the availability of a given year



Note:
[1] Percentage of total resources.

Energy balance

As of March 31, 2016

(in average MW)	2016	2017	2018	2019	2020	2021	Auction **Gross** Price (R$/MWh)	Reference Date	**Gross** Price Adjusted as of 03/31/2016 (R$/MWh)
Own Resources	3,534	3,542	3,585	4,014	4,007	4,015			
+ Purchases for Resale	859	691	668	569	347	295			
= Total Resources (A)	**4,393**	**4,233**	**4,253**	**4,583**	**4,354**	**4,310**			
Government Auction Sales[1]	1,673	1,323	1,371	1,765	1,612	1,612			
2005-EE-2009-08	345	-	-	-	-	-	94.0	Oct-05	160.8
2005-NE-2010-30	200	200	200	200	200	200	115.1	Dec-05	194.8
2006-NE-2009-30	493	493	493	493	493	493	128.4	Jun-06	213.8
2006-NE-2011-30	148	148	148	148	148	148	135.0	Nov-06	223.8
2007-NE-2012-30	256	256	256	256	256	256	126.6	Oct-07	201.1
2014-EE-2014-06	150	150	150	150	-	-	270.7	May-14	292.8
Proinfa	44	44	44	44	44	44	147.8	Jun-04	279.4
1st Reserve Energy Auction	14	14	14	14	14	14	158.1	Aug-08	254.3
Auction Mix (New Energy / Reserve / DG)	18	18	18	17	14	14	-	-	230.3
2014-NE-2019-25	-	-	-	295	295	295	183.5	Mar-14	217.1
2014-NE-2019-25	-	-	-	10	10	10	206.2	Nov-14	244.5
2014-NE-2019-20	-	-	-	83	83	83	139.3	Nov-14	158.8
2015-EE-2016-01	5	-	-	-	-	-	169.4	Dec-15	169.4
2015-NE-2018-20	-	-	46	46	46	46	188.5	Aug-15	197.4
8th Reserve Energy Auction	-	-	2	9	9	9	303.0	Dec-15	314.3
+ Bilateral Sales	2,502	2,690	2,398	1,882	1,214	721			
= Total Sales (B)	**4,175**	**4,013**	**3,769**	**3,647**	**2,826**	**2,333**			
Balance (A - B)	**218**	**220**	**484**	**936**	**1,528**	**1,977**			
Sales Average Price (R$/MWh) **(Net)**[2]:	177.9	175.3	176.0						
Purchases Average Price (R$/MWh) **(Net)**[3]:	206.5	181.1	181.7						

[1] XXXX-YY-WWWW-ZZ, where:
XXXX -> year of auction
YY -> EE = existing energy or NE = new energy
WWWW -> year of delivery start
ZZ -> supply contract duration (in years)

[2] Sales price is net of ICMS and taxes over revenue (PIS/Cofins, R&D), as of 03/31/16, i.e. future inflation is not considered.
[3] Purchase net price, considering benefits from PIS/Cofins credits, as of 03/31/16, i.e. future inflation is not considered.

Notes:
- The balance refers to the settlement point.
- The average prices are considered simply estimates and are based on financial planning revisions, not capturing volume changes, which are updated quarterly.
- Aneel agreed to the renegotiation of the hydrological risk with respect to the Company`s agreements negotiated through the Regulated Contracting Environment (ACR). Additional information can be found in the financial statements of 2015.

04

Expansion



Hydro Project under construction: **Jirau** | project update

3,750 MW project, out of which 40.0% held by ENGIE

- assured energy: 2,205 aMW

72.2% contracted under 30-year PPAs A-5 and A-3 Auctions - indexed by inflation, with protection against hydro generation deficit higher than 8% and 10%, respectively.

0.8% contracted under 3-year PPAs - indexed by inflation

Balance of energy available to be sold by ENGIE, Chesf and Eletrosul

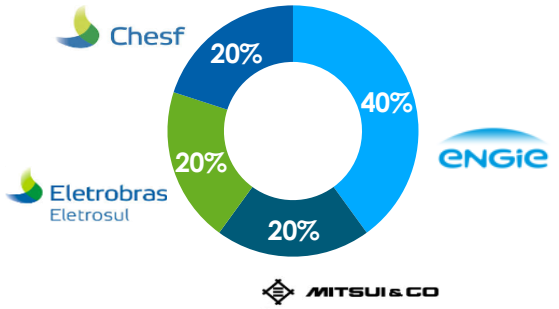
Legal decision issued in the First Instance (recognition of 535 days of force majeure)

Lawsuit remains under analysis in the second Instance

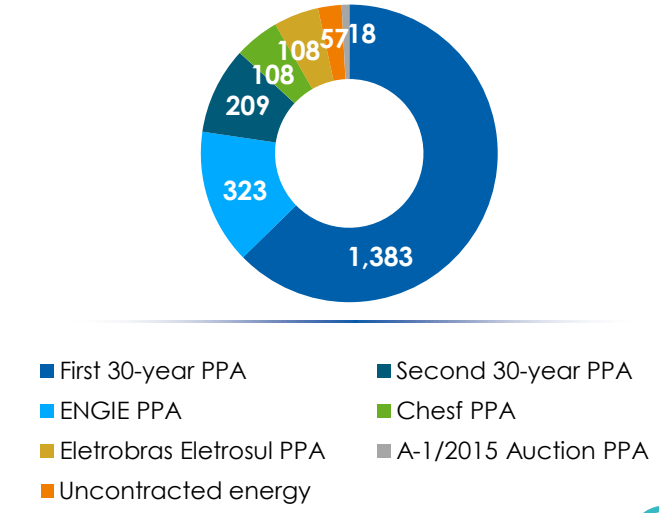
Financing conditions

- BNDES total financing: R$ 9.5 billion (initial R$ 7.2 billion + R$ 2.3 billion):
  - interest rate: TJLP + spread
  - amortization: 20 years
- spread: from 2.25% to 2.65%
- 100% of the debt is financed by BNDES, from which 50% is indirectly financed through a syndicate of banks

ESBR shareholders



ESBR PPA's portfolio aMW (2017 view)



Hydro Project under construction: **Jirau** | project update

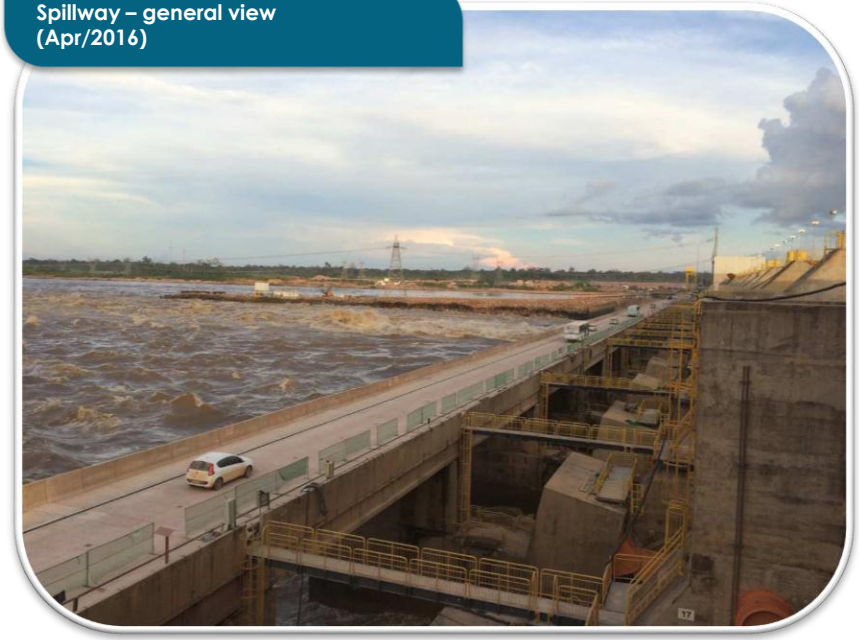
Project status

- 3,150 MW in commercial operation (42 units installed to date)
- 150 MW under assembling phase (2 units)
- full assured energy achieved in 2Q15 with the COD of the 33rd unit
- In 1Q16, total production was 3,686 GWh while uptime operating achieved 99.4%
- full COD foreseen for second half of 2016
- additional 20.5 aMW granted by Aneel as a result of hydraulic losses revision
- highest availability among the HPPs in the National Interlinked System (SIN)

Options to create additional value

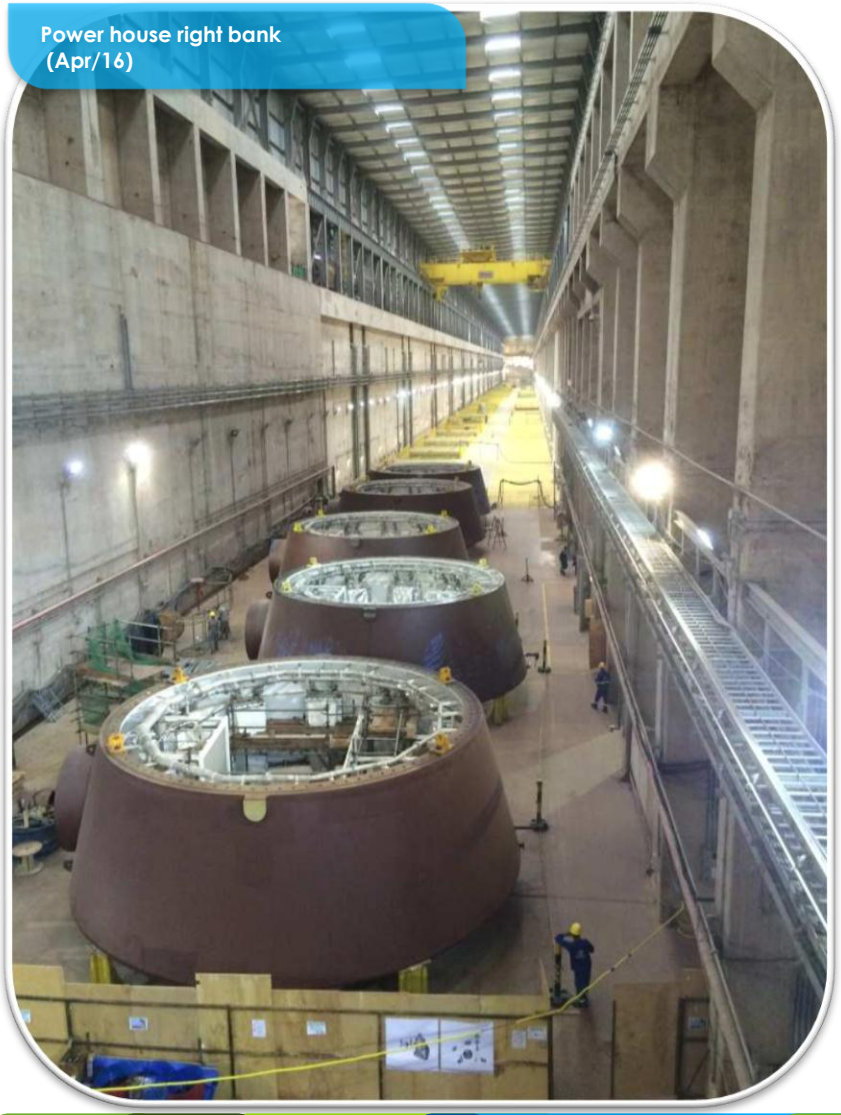
- additional assured energy through the operation of reservoir at constant levels
- additional long term tax incentives in the region

Spillway – general view (Apr/2016)

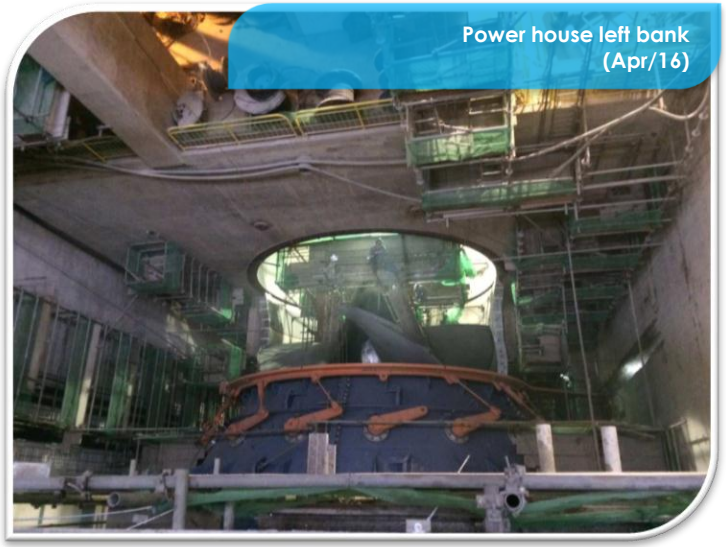


Hydro Project under construction:
Jirau | project update

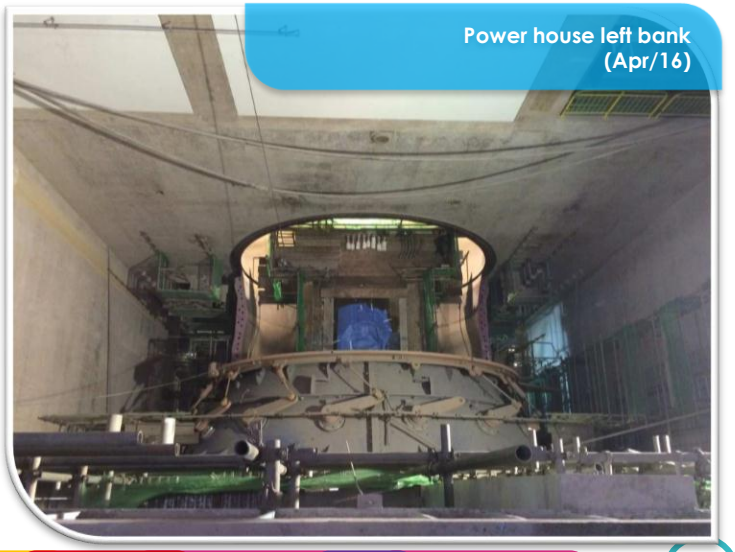
Power house right bank
(Apr/16)



Power house left bank
(Apr/16)



Power house left bank
(Apr/16)



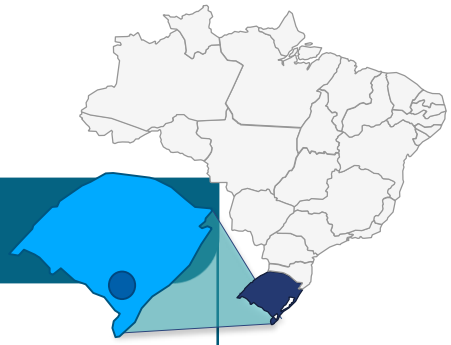
Thermal project under construction: **Pampa Sul TPP**

Project description

The Plant will fire thermal coal from reserves also located in Candiota (RS).



Pampa Sul TPP under construction.



Pampa Sul TPP - RS

Installed Capacity: 340.0 MW
Commercial Capacity: 294.5 aMW
Contracted Price: R$ 201.98/MWh
Contract Term: 25 years (as from Jan/2019)
Investment (R$mm)[1]: 1,800
Start of construction: 2015
Start of operation: 2H18
Installation License: June 19, 2015

Note:
[1] Approximated historical value.

Wind project under construction:
Campo Largo Wind Complex (phase I)

Total 11 plants

Project description

In an A-5 Auction, 82.6 aMW were sold. This commercial capacity will come from six wind farms which add an installed capacity of 178.2 MW.

At the same time, another five wind farms will be constructed with installed capacity of 148.5 MW (75.2 aMW).

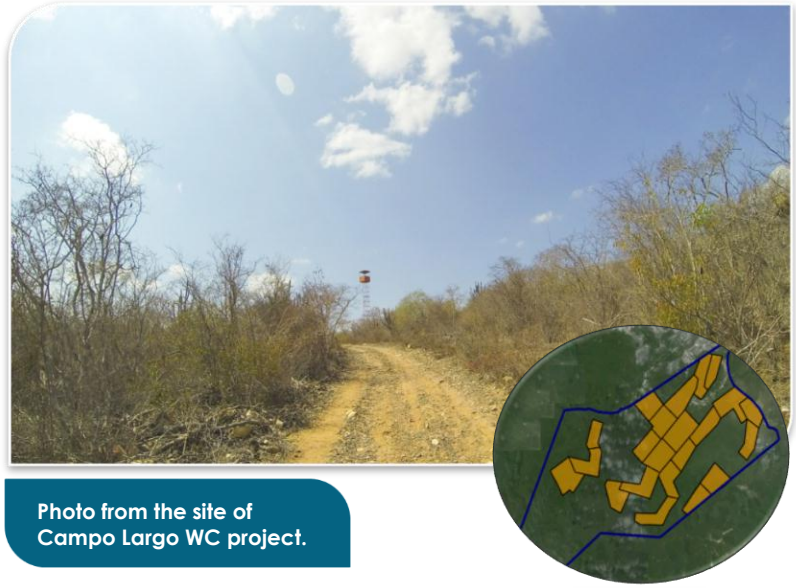
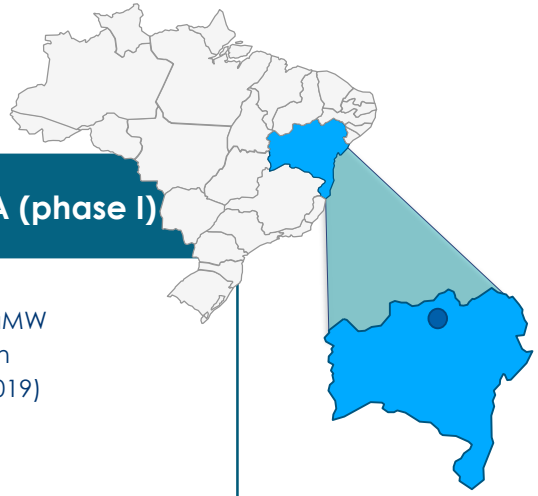


Photo from the site of Campo Largo WC project.



Campo Largo WC – BA (phase I)

Installed Capacity: 326.7 MW
Commercial Capacity: 157.8 aMW
Average Price[1]: R$ 139.29/MWh
Term[1]: 20 years (as from Jan/2019)
Investment (R$mm)[2]: 1,700
Start of construction: 2016
Start of operation: 2019
Nº of wind turbines: 121 (2.7 MW each)

Notes:
[1] With respect to the portion allocated to the Regulated Contracting Environment (ACR).
[2] Approximated historical value.

Wind project under construction: **Santa Mônica Wind Complex**

Total 4 plants

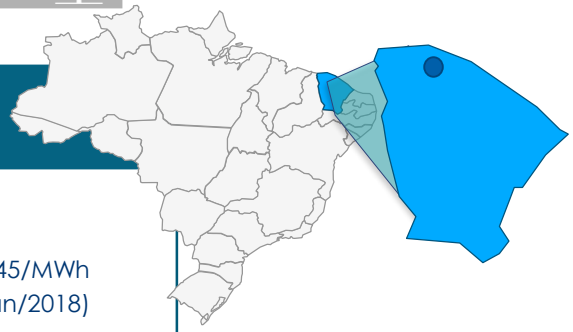
Project description

Santa Monica Wind Complex is already under construction alongside the Trairi Wind Complex.



Santa Mônica WC under construction.

Estrela (29.7 MW)	11 wind turbines
Ouro Verde (29.7 MW)	11 wind turbines
Cacimbas (18.9 MW)	7 wind turbines
Santa Mônica (18.9 MW)	7 wind turbines



Santa Mônica WC - CE

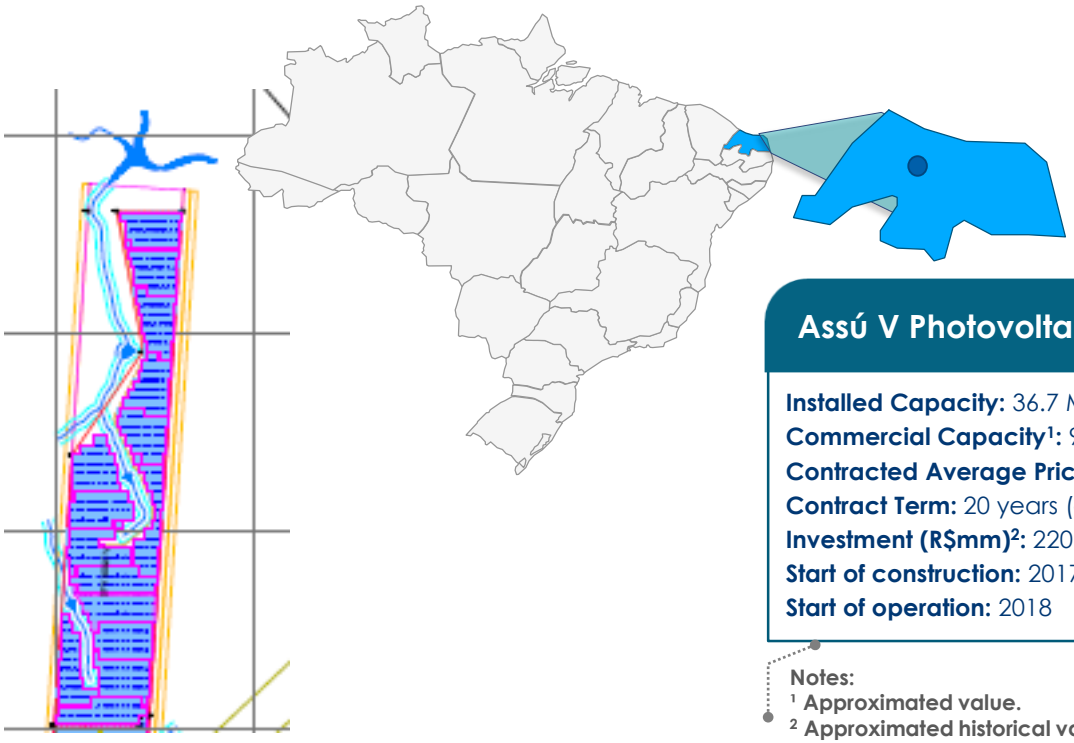
Installed Capacity: 97.2 MW
Commercial Capacity[1]: 48.7 aMW
Contracted Average Price: R$ 188.45/MWh
Contract Term: 20 years (as from Jan/2018)
Investment (R$mm)[2]: 460.0
Start of construction: 2014
Start of operation: 2016

Notes:
[1] Approximated value.
[2] Approximated historical value.

Solar project under construction: **Assú V Photovoltaic Central**

Project description

Assú V Photovoltaic Central commercialized 9.2 average MW at an average total price of R$ 302.99/MWh, for a term of 20 years, from November 1st, 2018.



Assú V Photovoltaic Central - RN

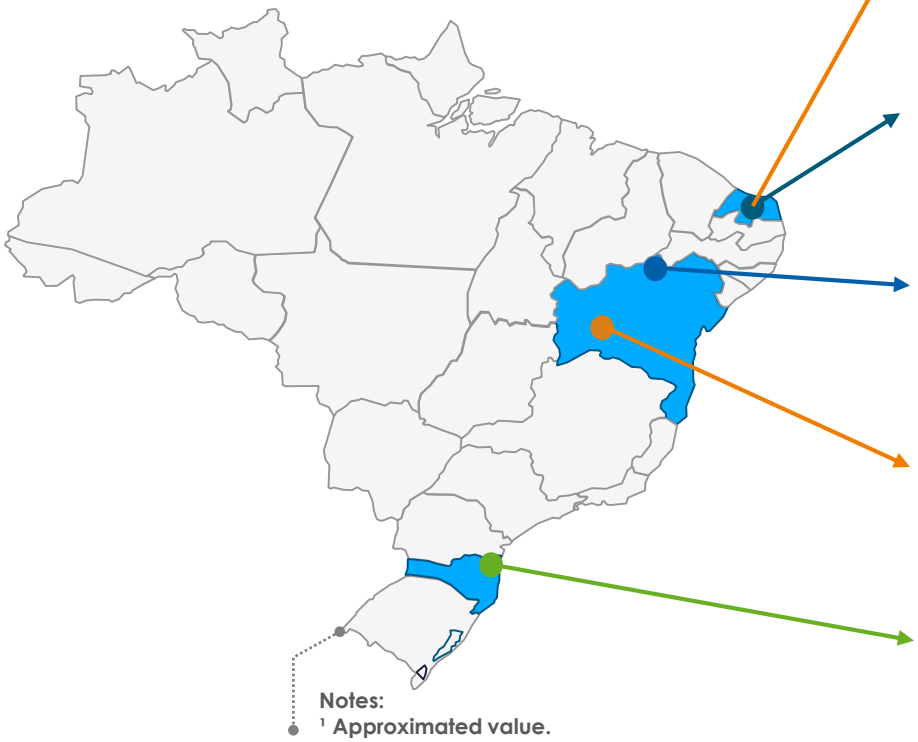
Installed Capacity: 36.7 MWp
Commercial Capacity[1]: 9.2 aMW
Contracted Average Price: R$ 302.99/MWh
Contract Term: 20 years (as from Nov/2018)
Investment (R$mm)[2]: 220.0
Start of construction: 2017
Start of operation: 2018

Notes:
[1] Approximated value.
[2] Approximated historical value.

Projects under development

Tractebel has some projects in its portfolio which are currently under development. Some of them are presented below.

Projects descriptions



Notes:
[1] Approximated value.

Assú I and II Photovoltaic Centrals - RN

Installed Capacity[1]: 73.4 MWp

Sto. Agostinho WC - RN

Installed Capacity: 600 MW
Commercial Capacity[1]: 300 aMW

Campo Largo WC - BA (Fase II)

Installed Capacity[1]: 330.0 MW
Commercial Capacity: ~ 160.0 aMW

Alvorada Photovoltaic Complex - BA

Installed Capacity[1]: 90 MW

Norte Catarinense TPP - SC

Installed Capacity: 600 MW
Commercial Capacity[1]: 400 aMW
Fuel: natural gas

Project under development – distributed solar generation

Project description

In April, the Company acquired 50% of the capital stock of ENGIE Solar which is part of the Araxá Group, one of the leaders of the Brazilian market for distributed solar generation.

This investment represents a medium through which the Company is entering the distributed photovoltaic energy sector.

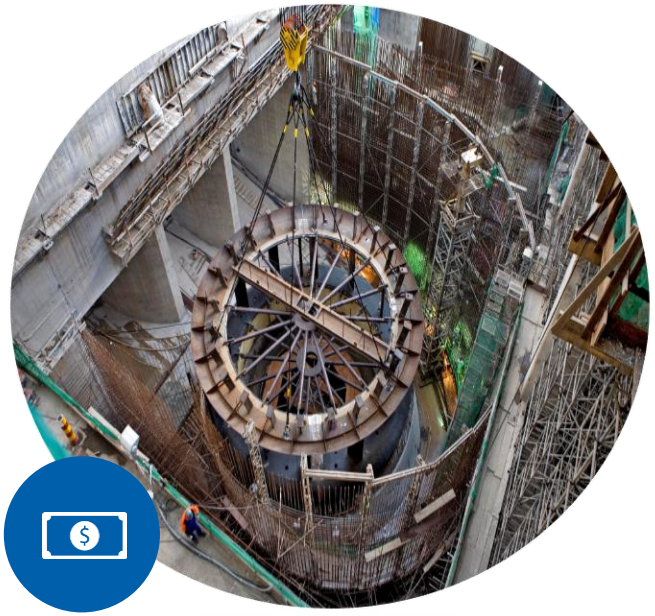
Total investment may amount to as much as R$ 24.3 million and will be used to strengthen the execution and management capacity of the company and provide the necessary working capital for its development.





05

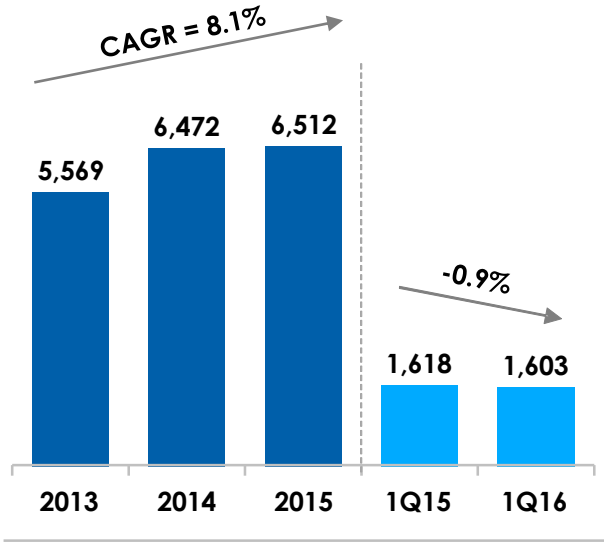
Financial Performance



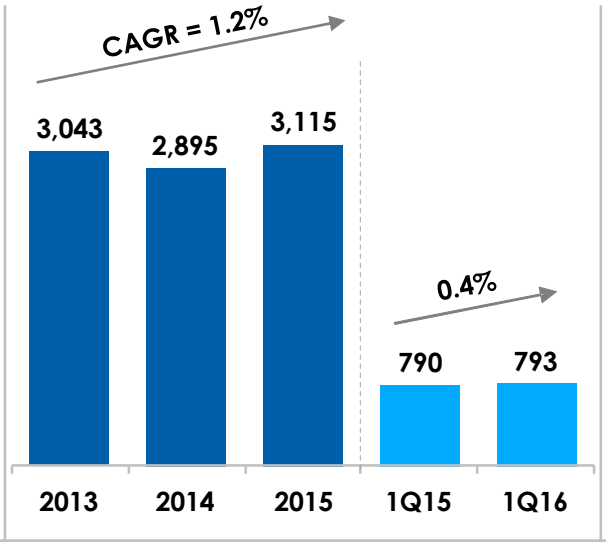
Solid financial performance

Efficiency in the management of the client portfolio and the focus on contracting strategies has enabled the Company to report stability in revenue generation, Ebitda and net income despite recent instability that affected the electricity sector and the Brazilian economy as a whole.

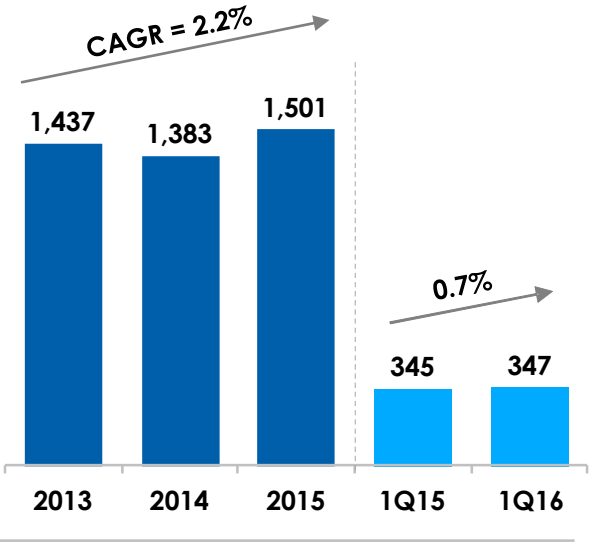
Net Revenue (R$ million)



Ebitda (R$ million)

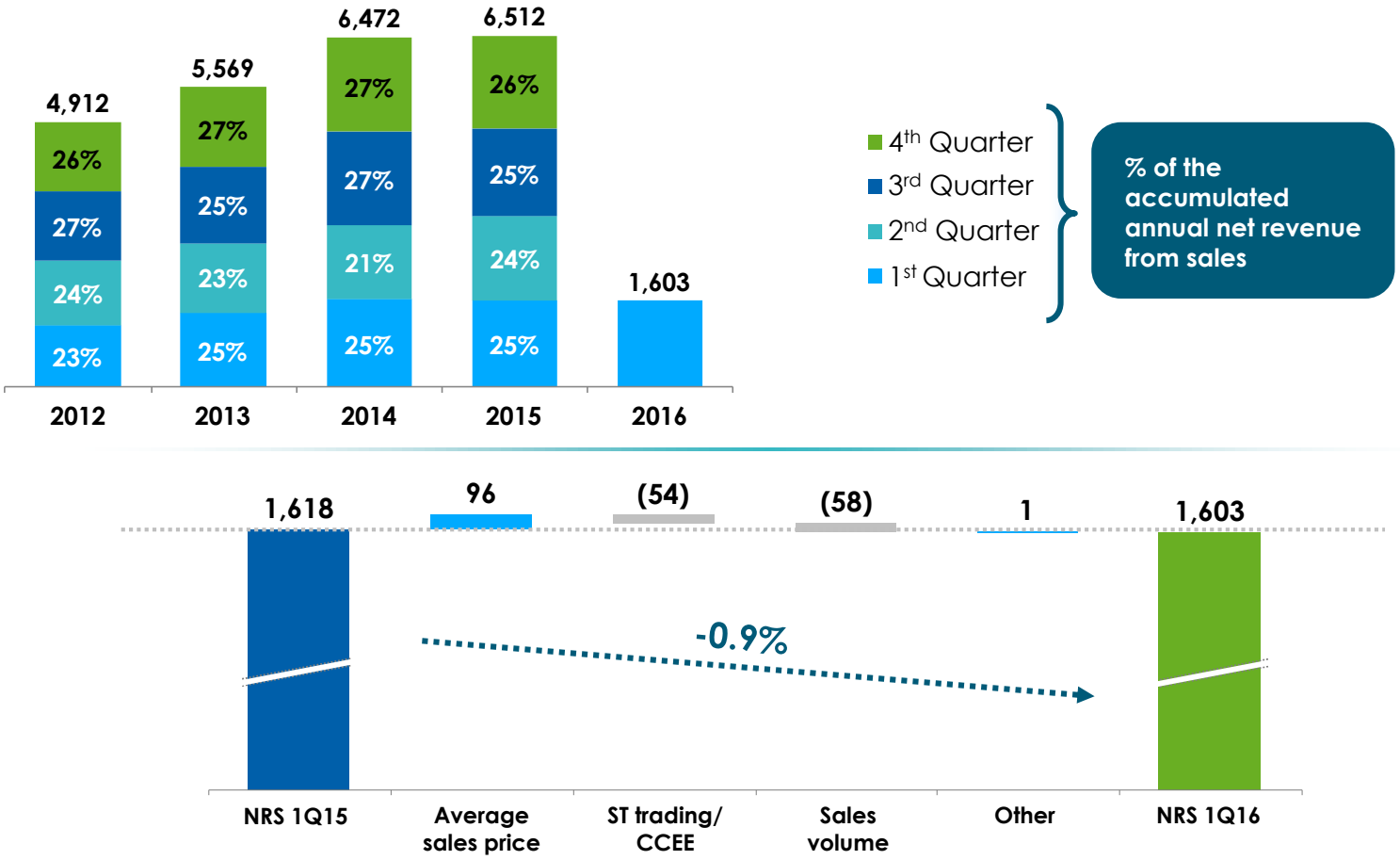


Net Income (R$ million)



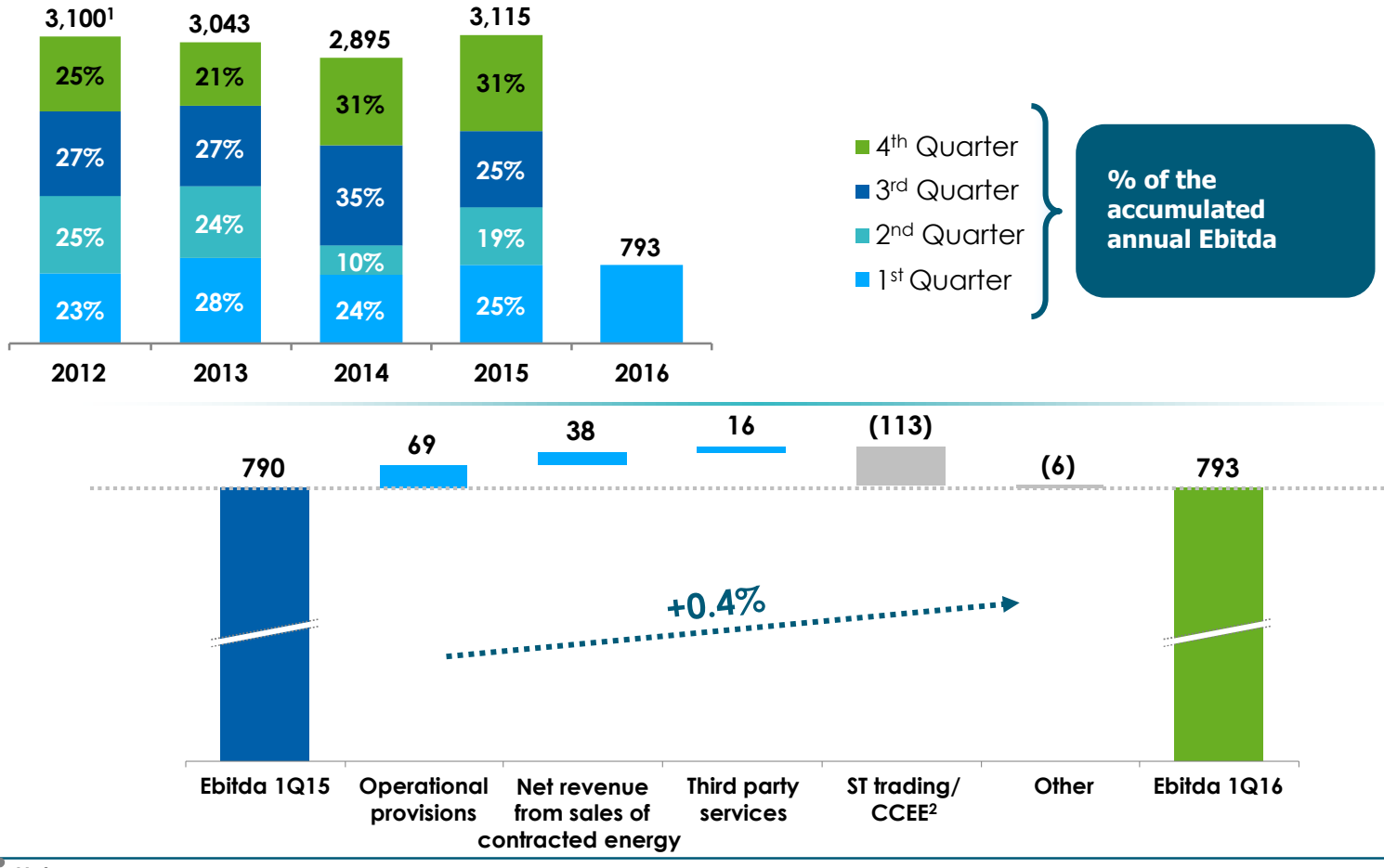
Net revenue from sales change (R$ million)

Net revenue from sales change (R$ million)



Ebitda change (R$ million)

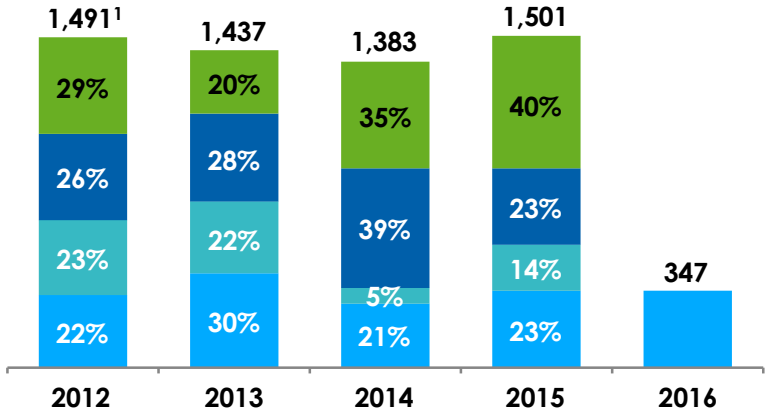
Ebitda change (R$ million)



Notes:
[1] Adjustment due to change in accounting practice.
[2] Considers the combined effect of changes in revenue and expenses.

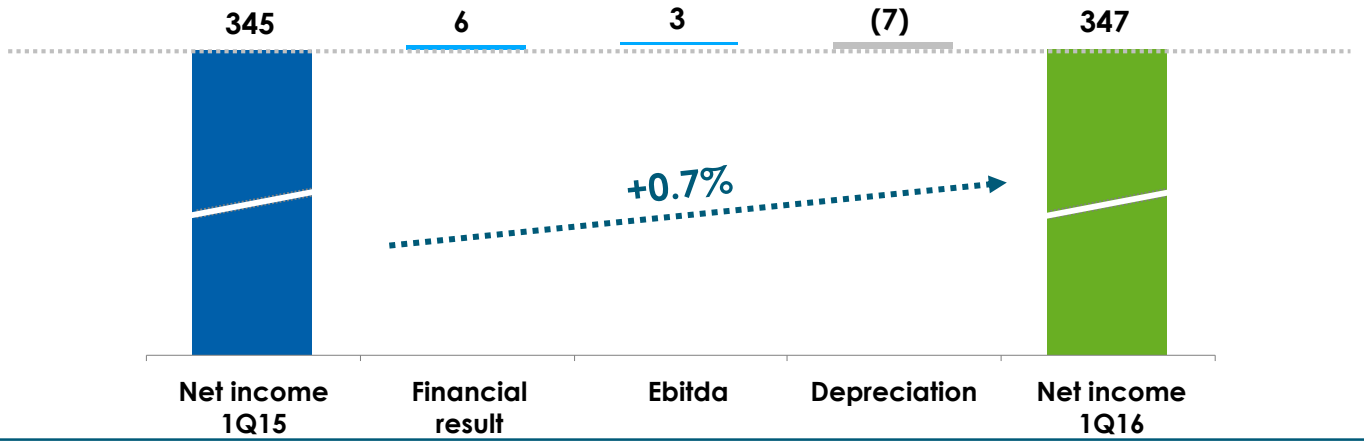
Net income change (R$ million)

Net income change (R$ million)



- 4th Quarter
- 3rd Quarter
- 2nd Quarter
- 1st Quarter

% of the accumulated annual net income

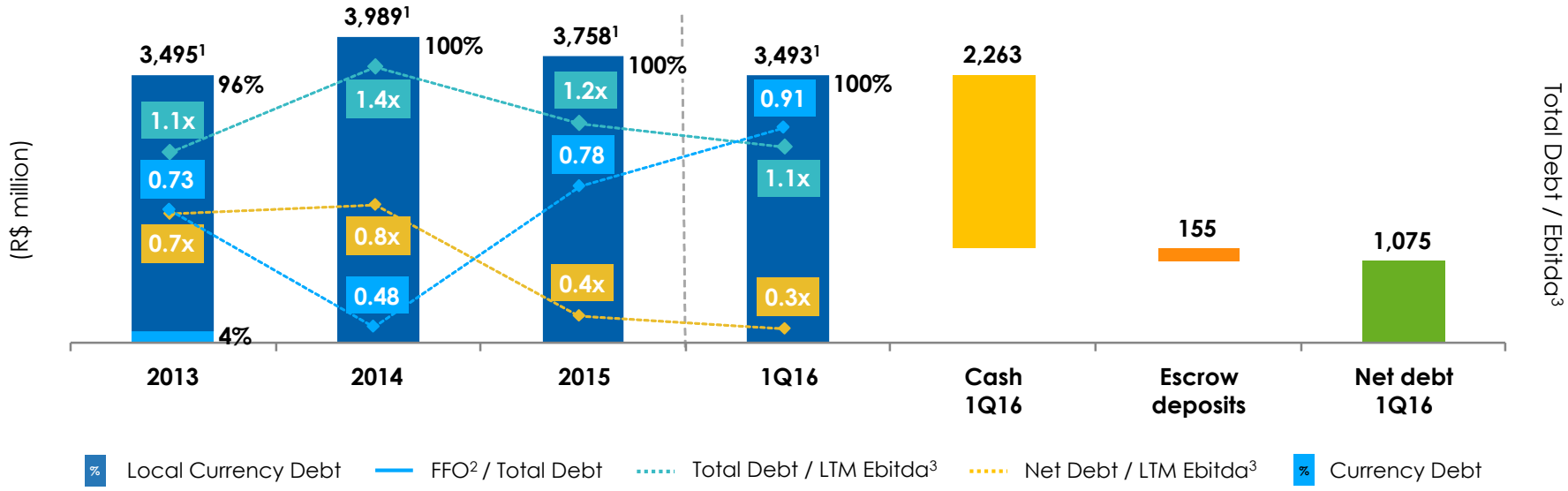


Note:
[1] Adjustment duo to change in accounting practice.

Limited debt with no currency exposure

The Company's low debt level allows it to capture growth opportunities.

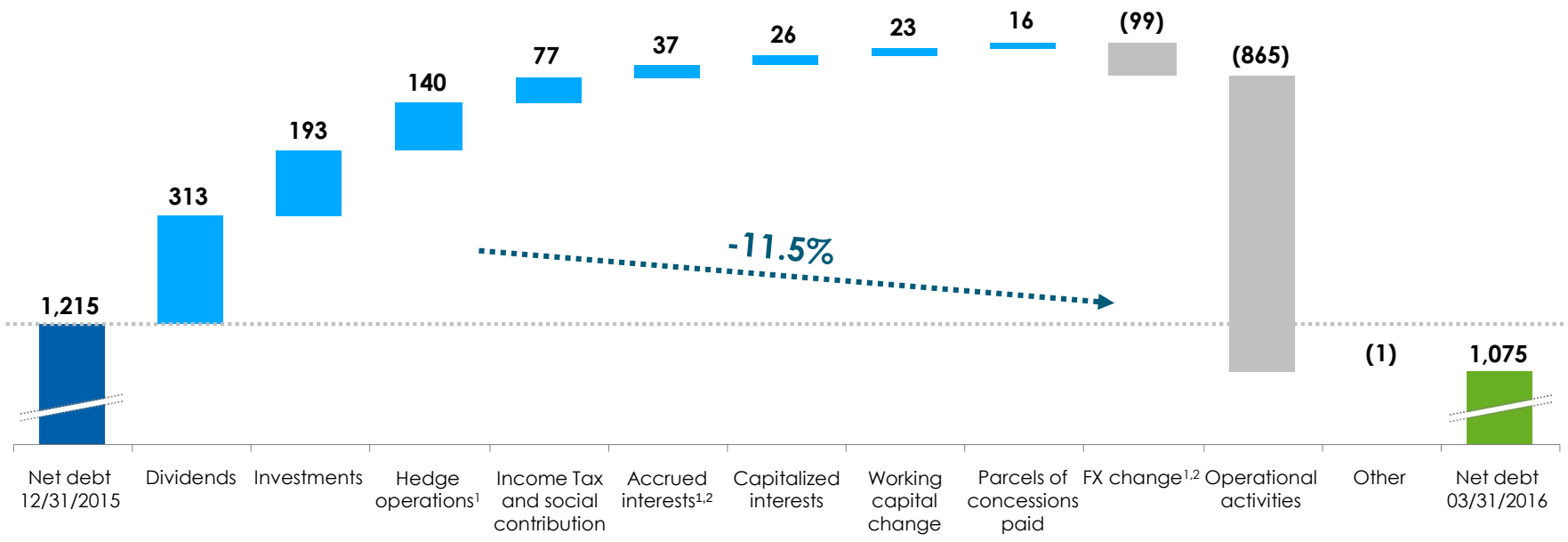
Debt Overview (R$ million)



Notes:
[1] Debt net of hedge operations.
[2] Funds from Operations.
[3] Ebitda in the past 12 months

Net debt change (R$ million)

Net debt change (R$ million)

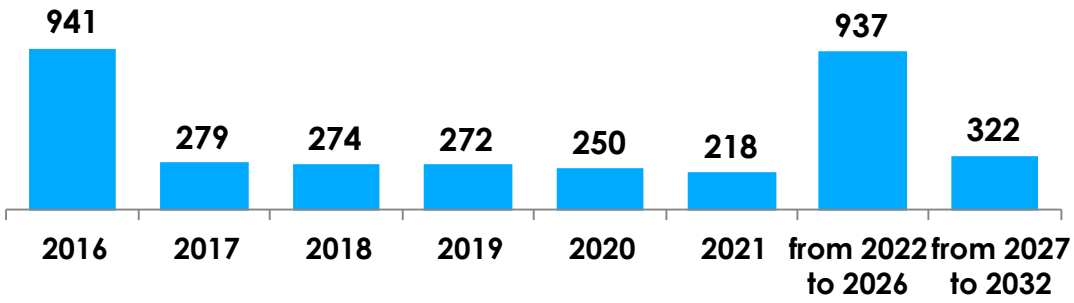


Notes:
[1] Does not impact the Company's cash position.
[2] The interests and FX change refer only to the Company's financial debt (loans, financing and debentures).

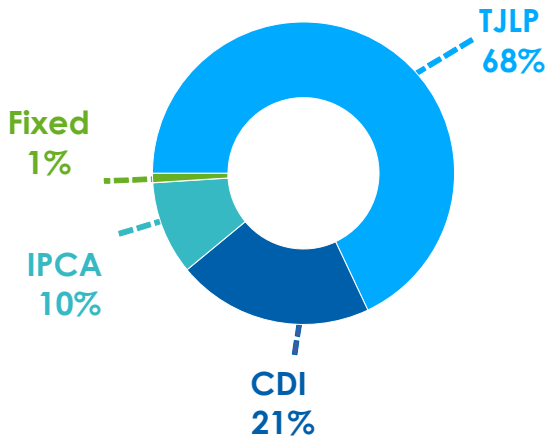
Medium and long-term debt, with low costs and defensive indexes

Debt profile and strong cash generation reduce refinancing risk.

Maturity debt schedule (R$ million)



Composition of debt

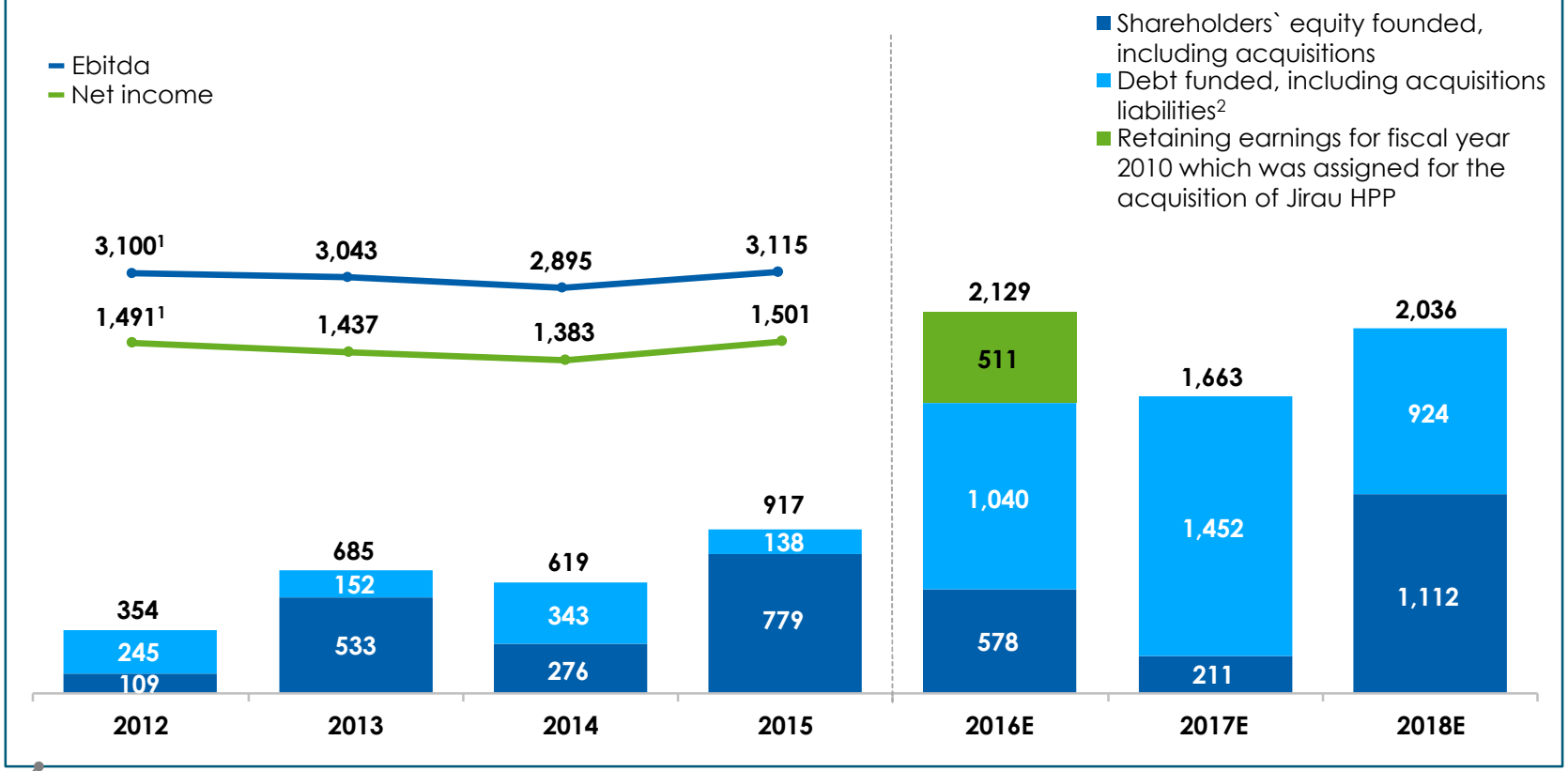


Nominal cost of debt: 11.2%

Remuneration of short-term debt is compatible with that of cash.

Expansion plan and maintenance CAPEX are supported by a strong cash flow generation and prudent funding strategy

Accomplished/expected CAPEX and corresponding financing sources (R$ million)

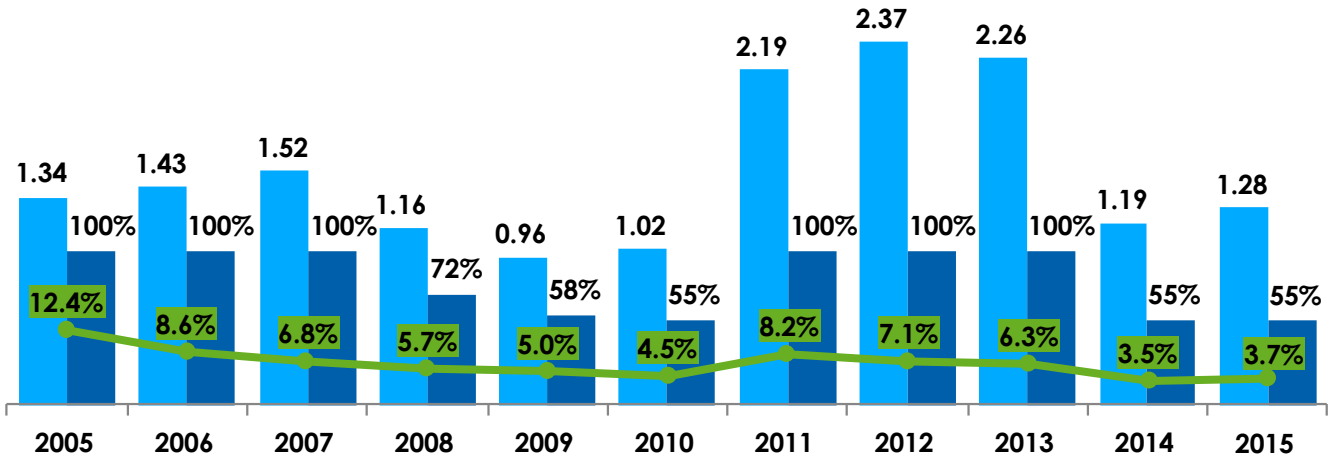


Notes:
1 Adjustment due to change in accounting practice.
2 Does not consider interests incurred during the construction.

Dividend policy

- By-law minimum payout: 30% of payable net income.
- Management commitment: minimum payout of 55% of payable net income.
- 3 dividends per year: semi-annual dividends and interest on shareholders' equity (annual).

Dividends (based on distributable net income)



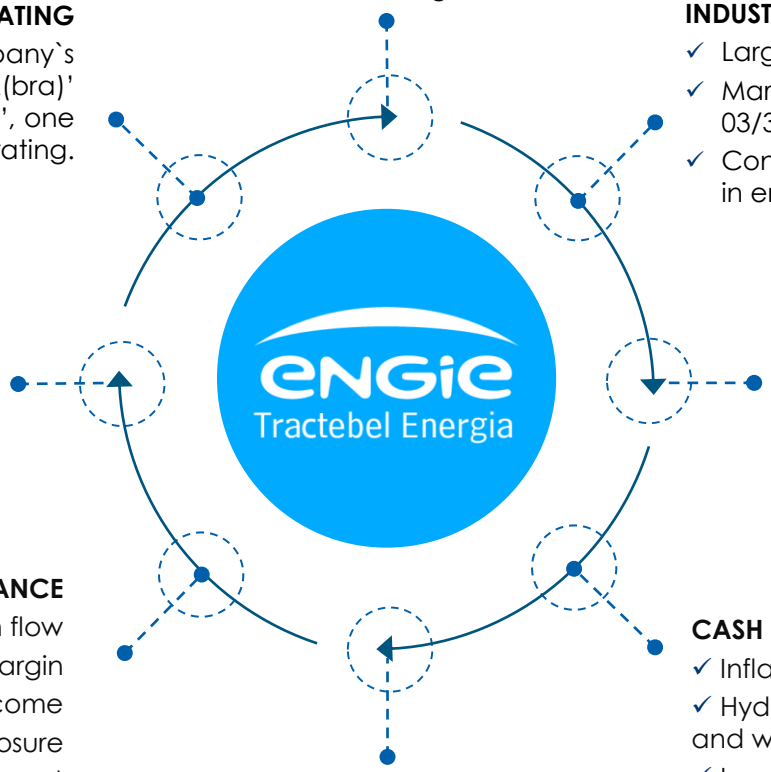
Notes:
[1] Considers the annual payable net income.
[2] Based on volume-weighted closing price of ON shares in the period.

Competitive advantages

STRATEGIC INDUSTRY
- ✓ Defensive profile in times of crisis
- ✓ Attractive funding conditions

PREMIUM RATING
- ✓ Fitch Ratings rated the Company`s Local Long Term Rating as 'AAA(bra)' and in global scale "BBB-(bra)", one higher level the sovereign rating.

INDUSTRY LEADERSHIP
- ✓ Largest private generator in Brazil
- ✓ Market cap: R$ 23.9 billion in 03/31/2016
- ✓ Controlled by ENGIE, world leader in energy



HIGH-CALIBER CORPORATE GOVERNANCE AND SUSTAINABILITY
- ✓ Experienced executives
- ✓ Discipline track record in investment decisions, based on triple bottom line concepts
- ✓ First class controlling shareholder

CLEAR COMMERCIAL STRATEGY
- ✓ Heavily contracted in the next years
- ✓ Diversified portfolio between free customers (over different industries) and regulated ones (distribution companies)
- ✓ Benefits from windows of opportunities

STABLE FINANCIAL PERFORMANCE
- ✓ Strong cash flow
- ✓ High average Ebitda margin
- ✓ Consistent net income
- ✓ No FX exposure
- ✓ Active financial management

CASH FLOW PREDICTABILITY
- ✓ Inflation-indexed contracts
- ✓ Hydro basis, completed by thermal and wind
- ✓ Long-term contracting strategy

HIGH OPERATIONAL PERFORMANCE
- ✓ Benchmark indexes of availability
- ✓ ISO 9001 (quality management), 14001 (environment management) and OHSAS 18001 (occupational health and safety) certified plants

Contacts

Tractebel Energia:

Eduardo Sattamini
Finance and Investor Relations Director
sattamini@tractebelenergia.com.br

Rafael J. Caron Bósio
Investor Relations Manager
rbosio@tractebelenergia.com.br
+55 48 3221 7221

www.tractebelenergia.com.br

ENGIE Energy Latin America (pre-transfer projects):

Anamélia Medeiros
Market Relations Manager
anamelia.medeiros@gdfsuezla.com
+55 21 3974 5400

06

Support Data



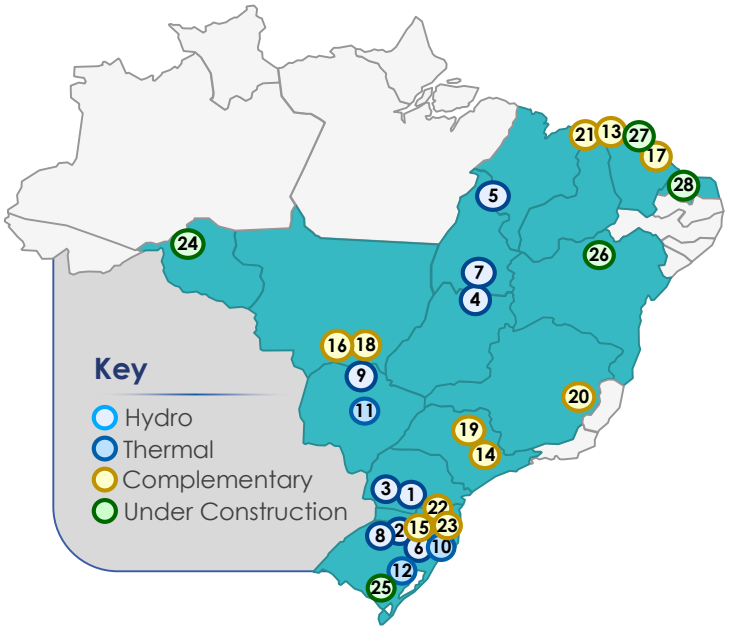
Diversified portfolio of assets, with strategic location

Installed capacity of 7,008.3 MW from 28 plants operated by Tractebel Energia: 79% hydro, 16% thermal and 5% complementary. This capacity stands for 88% increase since 1998.

	Hydro Power Plants	Installed Capacity (MW)	Commercial Capacity (MWa)[1]
1	Salto Santiago	1,420.0	735.2
2	Itá	1,126.9[2]	544.2[2]
3	Salto Osório	1,078.0	522.0
4	Cana Brava	450.0	273.5
5	Estreito	435.6[2]	256.9[2]
6	Machadinho	403.9[2]	147.2[2]
7	São Salvador	243.2	151.1
8	Passo Fundo	226.0	119.0
9	Ponte de Pedra	176.1	132.3
	Total	5,559.7	2,881.4

	Thermal Power Plants	Installed Capacity (MW)	Commercial Capacity (MWa)[1]
10	Jorge Lacerda Complex[3]	857.0	649.9
11	William Arjona	190.0	136.1
12	Charqueadas	36.0	22.9
	Total	1,083.0	808.9

	Complementary Power Plants	Installed Capacity (MW)	Commercial Capacity (MWa)[1]
13	Trairi Complex[4]	115.4	63.9
14	Ferrari (Biomass)	80.5	35.6
15	Lages (Biomass)	28.0	25.0
16	Rondonópolis (SHP)	26.6	10.1
17	Beberibe (Wind)	25.6	7.8
18	José G. da Rocha (SHP)	23.7	9.2
19	Ibitiúva (Biomass)	22.9[2]	13.9[2]
20	Areia Branca (SHP)	19.8	10.4
21	Pedra do Sal (Wind)	18.0	5.7
22	Cidade Azul (Solar)	3.0	n/a
23	Tubarão P&D (Wind)	2.1	n/a
	Total	365.6	181.6



	Power Plants Under Construction	Installed Capacity (MW)	Commercial Capacity (MWa)[1]
24	Jirau (Hydro)[5]	1,500.0	882.0
25	Pampa Sul (Thermal)	340.0	323.5
26	Campo Largo Complex (Wind)	326.7	157.8
27	Santa Mônica Complex (Wind)	97.2	48.7
28	Assú V (Solar)	36.7	9.2
	Total	2,300.6	1,421.2

Notes:
[1] Figures following specific legislation.
[2] Portion owned by Tractebel Energia.
[3] Complex comprised by 3 power plants.
[4] Considers Trairi, Guajiru, Fleixeiras I and Mundaú Wind Farms.
[5] The Parent Company's stake (40% of 3,750 MW) might be transferred to Tractebel.

Sustainability indicators[1]

Dimension[2]	Index[3]	GRI disclosure[4]	1Q16	1Q15	Change
Quality	Operating plants	EU1, G4-9	28	27	1
	Installed capacity	EU1, G4-9	8,729	8,748	-0.2%
	Number of certified plants	EU6, G4-15	14	14	-
	Certified installed capacity (MW)	EU6, G4-15	7,294	7,330	-0.5%
	Certified installed capacity in relation to the total	EU6, G4-15	83.6%	83.8%	-0.3%
	Installed capacity from renewable sources	EU1, G4-9	7,646	7,629	0.2%
	Installed capacity from renewable sources in relation to the total	EU1, G4-9	87.6%	87.2%	0.4%
	Energy generation (GWh)	EU2	11,996	12,904	-7.0%
	Certified energy generation	EU6, G4-15	10,357	11,230	-7.8%
	Certified energy generation in relation to the total	EU6, G4-15	86.3%	87.0%	-0.8%
	Energy generation from renewable sources (GWh)	EU2	10,935	11,259	-2.9%
	Energy generation from renewable sources in relation to the total	EU2	91.2%	87.2%	4.5%
	Uptime ratio, excluding scheduled stoppages	EU30	96.3%	96.1%	0.3%
	Uptime ratio, including scheduled stoppages	EU30	86.3%	87.0%	-0.9%
Environment	Saplings donated and planted (sum-total of planted and donated saplings)[5]	G4-EN27	97,517	50,935	91.5%
	Number of visitors at the plants[5]	G4-26	11,388	11,233	1.4%
	CO2 Emissions (fossil fuel plants) (t/MWh)	G4-EN15	1.001	0.985	1.6%
	CO2 Emissions from Tractebel Energia's generation complex(t/MWh)	G4-EN15	0.118	0.126	-6.1%
Occupational Heath and Safety (OH&S)	Average number of employees[6]	G4-10, G4-LA1	1,133	1,142	-0.8%
	Frequency Rate ("Taxa de Frequência" - TF), except for outsourced positions[7]	G4-LA6	0.000	0.000	-
	Severity Rate ("Taxa de Gravidade" - TG), except for outsourced positions[8]	G4-LA6	0.000	0.000	-
	Frequency Rate ("Taxa de Frequência" - TF), including outsourced positions[7]	G4-LA6	1.680	0.000	⬆
	Severity Rate ("Taxa de Gravidade" - TG), including outsourced positions[8]	G4-LA6	0.000	0.000	-
Social Responsibility[9]	Non-incentive investments	G4-EC8, G4-SO1	1,175.0	766.1	53.4%
	Investments via Children and Teenagers Fund	G4-EC8, G4-SO1	671.3	53.8	1147.8%
	Investments via Cultural Incentives Act	G4-EC8, G4-SO1	5,443.5	4,714.7	15.5%
	Investments via Sport Incentives Act	G4-EC8, G4-SO1	150.00	350.00	-57.1%
	Other Investments via Incentive Acts (health and others)	G4-EC8, G4-SO1	0.0	300.0	⬇

Notes:
[1] Additional indices available from ITR (Tractebel website / Investors / Financial Information/ Financial Statements).
[2] Reference: Tractebel Energia's Sustainable Management Policy.
[3] Indices don't consider Alegrete Thermoelectric Plant (in process of returning to the Union since 2013), except for OH&S, as there are activities in course at the plant, by
[4] GRI: Global Reporting Initiative.
[5] Ceste not included.
[6] Average nº in the period of own employees working at power plants in operation, at the headquarters and at the São Paulo's office.
[7] TF = number of occupational accidents for every million hours of exposure to hazards, considered the same employees of item 19.
[8] TG = number of days lost due to occupational accidents for every one thousand hours of exposure to hazards, considered the same employees of item 19 and the outsourced working in the same places.
[9] In millions of R$.

Thermal side: exposure to spot prices

375
avg MW

Expected minimum dispatch due to an annual inflexibility (based on the purchase of some 230,000 tons of coal a month)

+

375
avg MW (maximum exposure)

Thermal substitution energy

purchase in spot market

=

750
avg MW

Estimated commercial capacity (on a yearly basis)

Notes:
[1] Tractebel Energia has been fully contracted → purchase of thermal substitution energy.
[2] On a monthly basis, inflexibility variations may occur.
[3] Figures related to the Energy Trading Board (CCEE) settlement point.

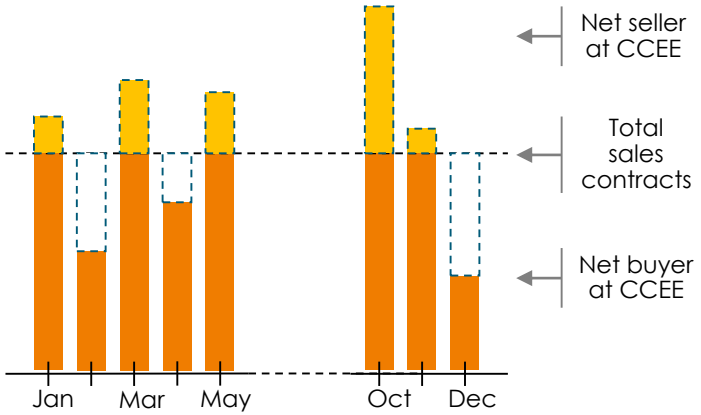
Power seasonalization

How does the allocation of resources at CCEE (the energy trading board) over the months interfere with a genco quarterly results?

- Gencos can allocate their resources over the following year's months;
- Monthly fluctuations on sales is also a driver for exposure to spot price;
- Monthly energy differences are settled at spot price, i.e., PLD (Price for Settlement of Differences);
- As penalties apply for gencos with short positions considering the past twelve months, a "monthly closing" market is available for those gencos;
- The pricing for the "monthly closing" market is strongly linked to the spot price..

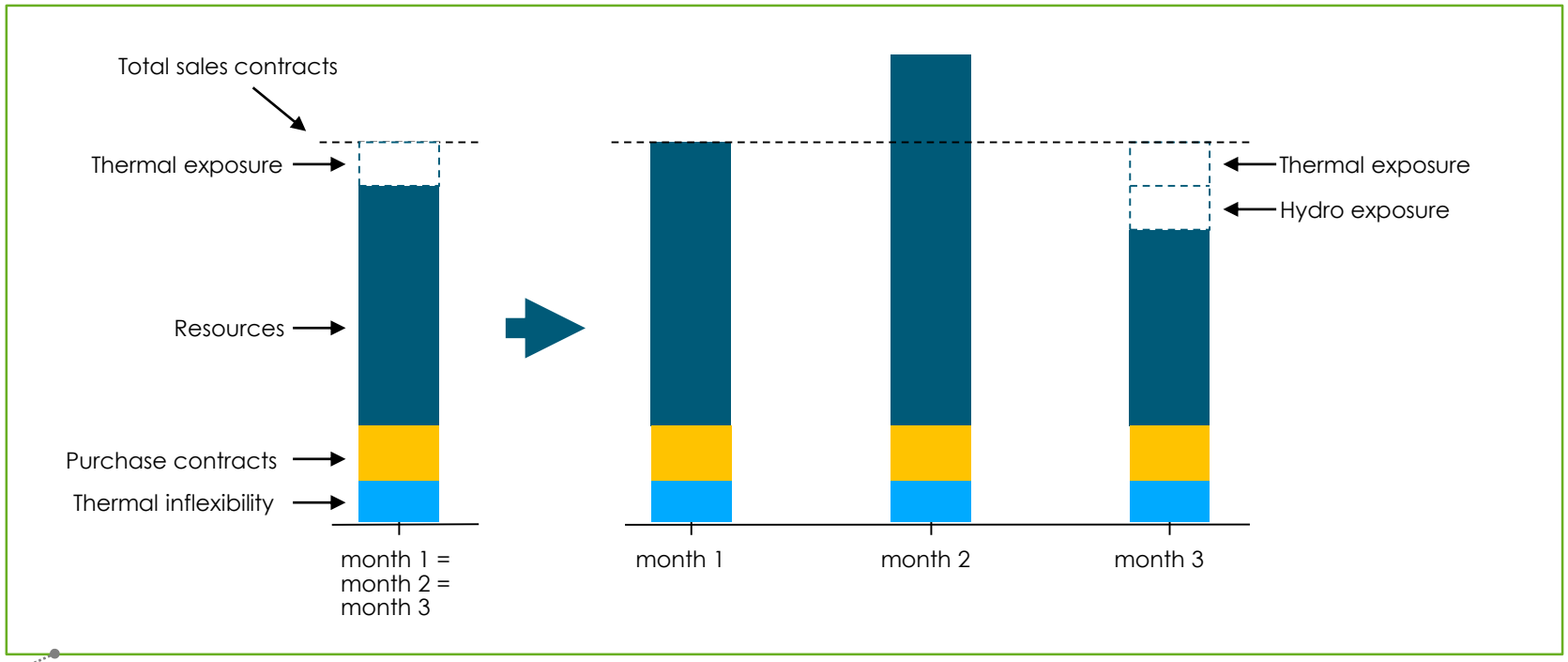
Annual resources

monthly allocation over year x1 (decision taken in Dec year x0)



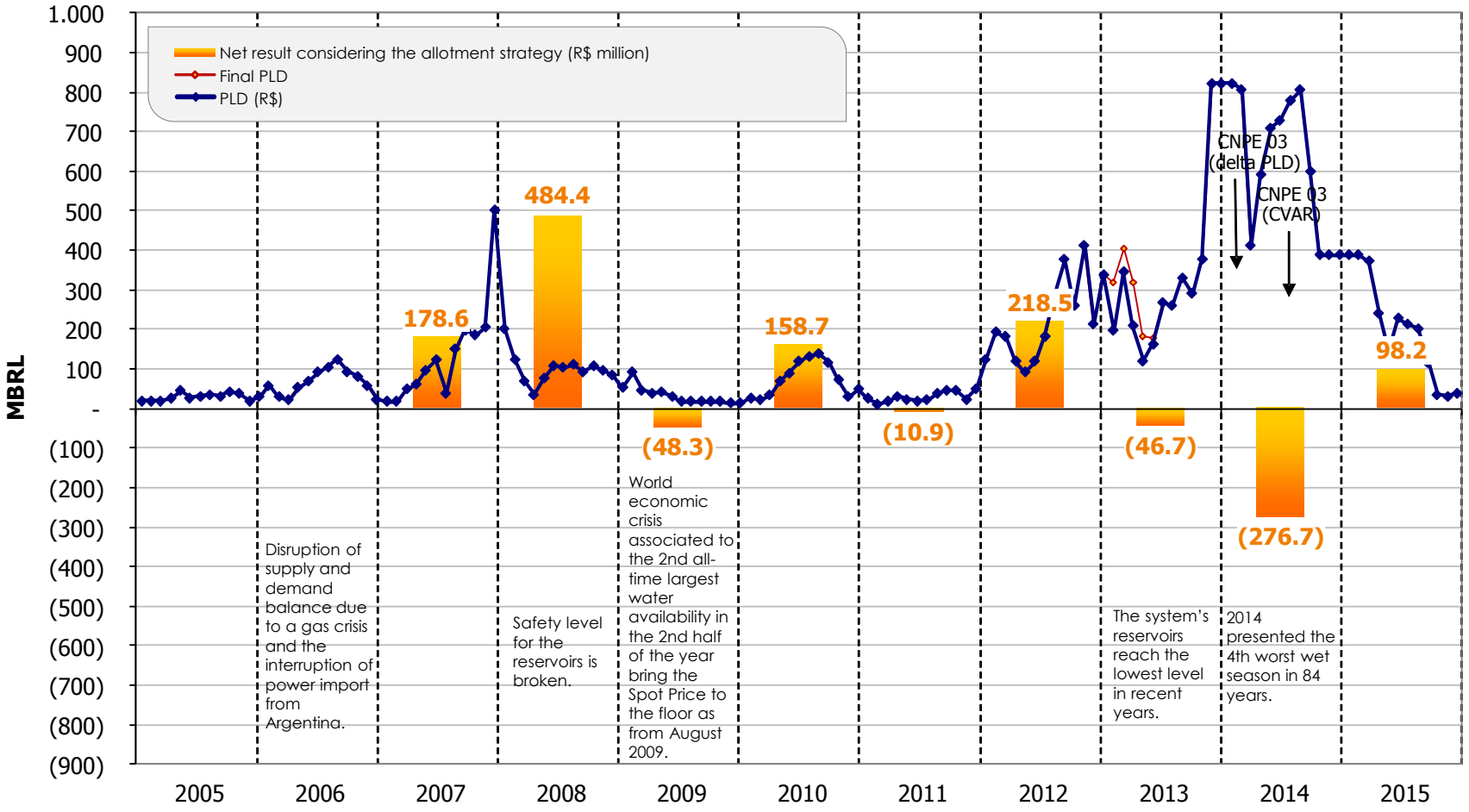
Mechanisms to mitigate exposure from the thermal side

As a consequence of the two previous slides, an appropriate monthly allocation of the resources over the year can mitigate the exposure arising from the thermal substitution energy to be purchased at spot price. An example follows:



Note: exposure box sizes are out of scale.

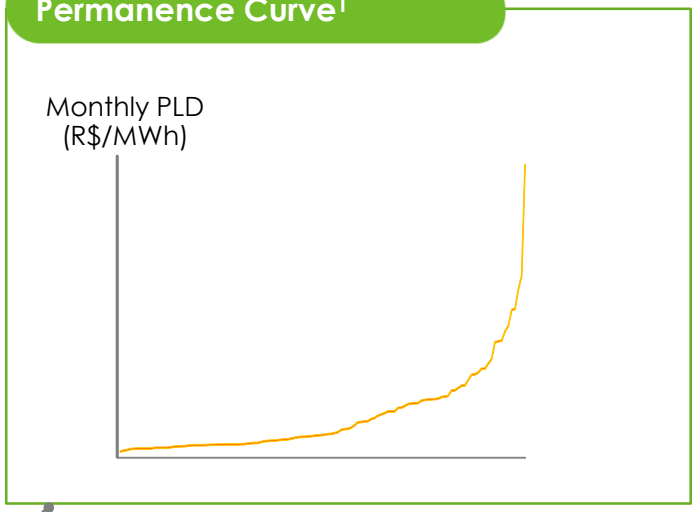
Impacts from energy allotment net result



Main drivers and distribution curve of spot prices

- Reservoir levels of hydro plants;
- Rainfall behavior;
- Forecast of demand for power;
- Current and future availability of power plants and transmission lines;
- Availability of natural gas.

Permanence Curve[1]



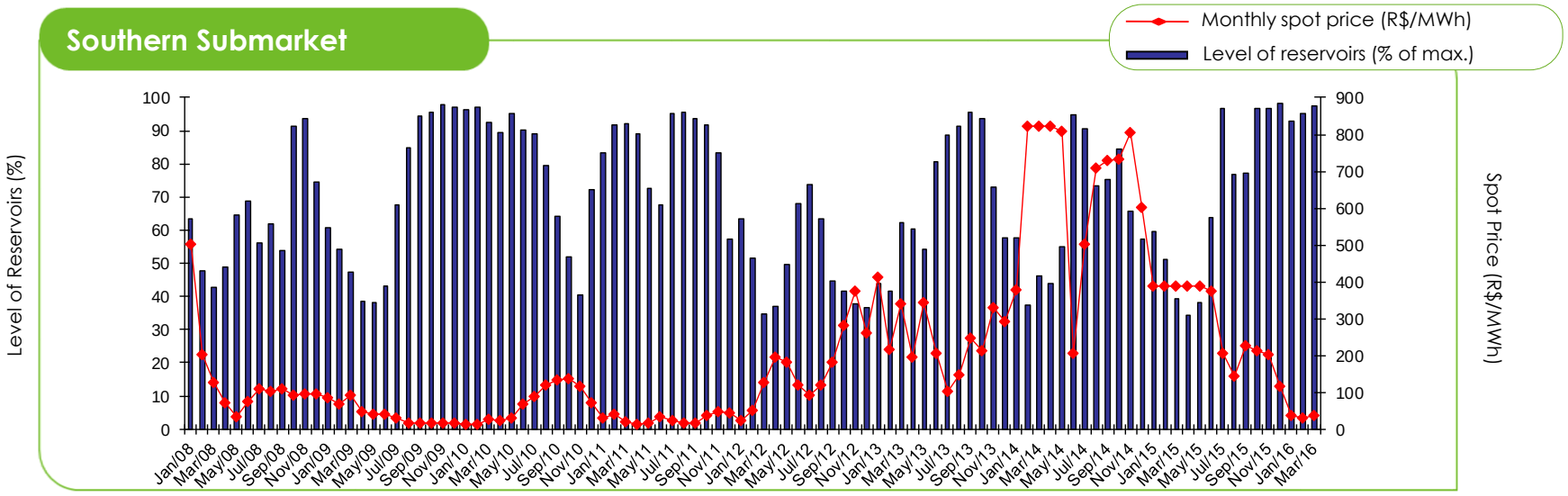
Occurrence[2]

	May/2003 - Sep/2012	Oct/2012 - Mar/16
Avg. PLD (in R$)	100.71	437.65
PLD Std Deviation (in R$)	104.97	275.08
Monthly PLD > R$ 100.00	37%	93%
Monthly PLD > R$ 200.00	12%	86%

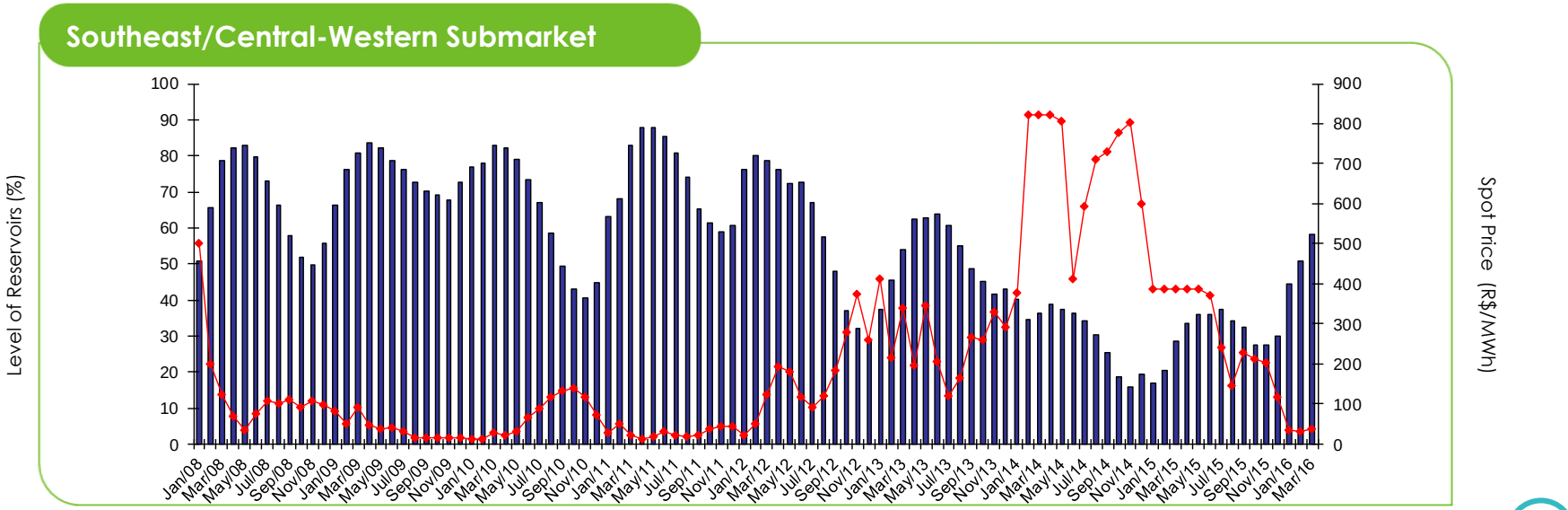
Notes:
[1] Figures have been ordered from the lowest. Values adjusted by IPCA (inflation index).
[2] PM 579 was published on September 11, 2012. Values adjusted by IPCA (inflation index).

Correlation between reservoir levels and spot prices

Southern Submarket

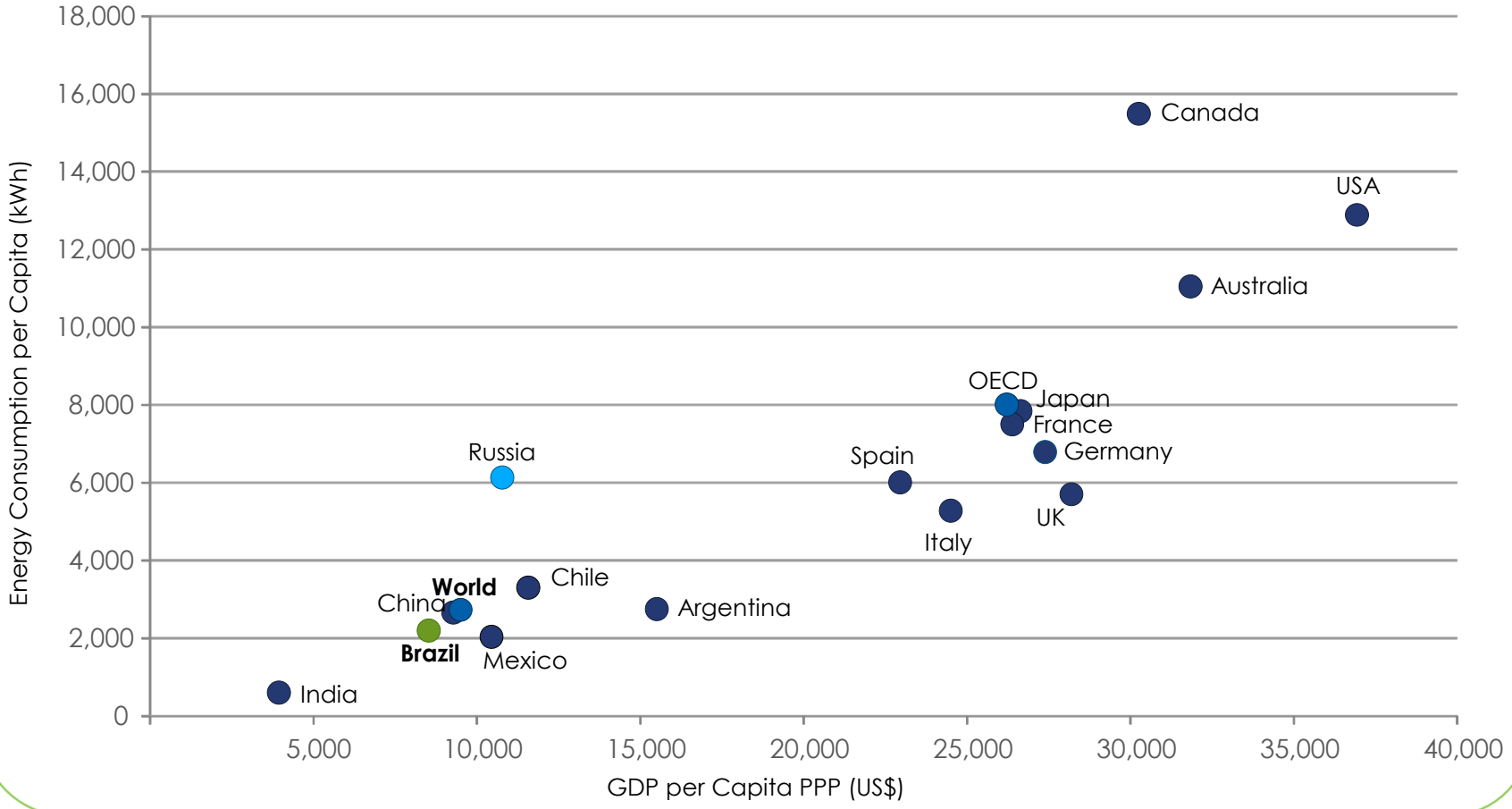


Southeast/Central-Western Submarket



Electricity: large growth potential

Electricity Consumption (per capita, yearly)



Source: MME, Aug/12 (consolidated information for 2009)