

Prospects for the Electric Energy Market

Manoel Arlindo Zaroni Torres

São Paulo, March 5, 2015

Retrospective 2014

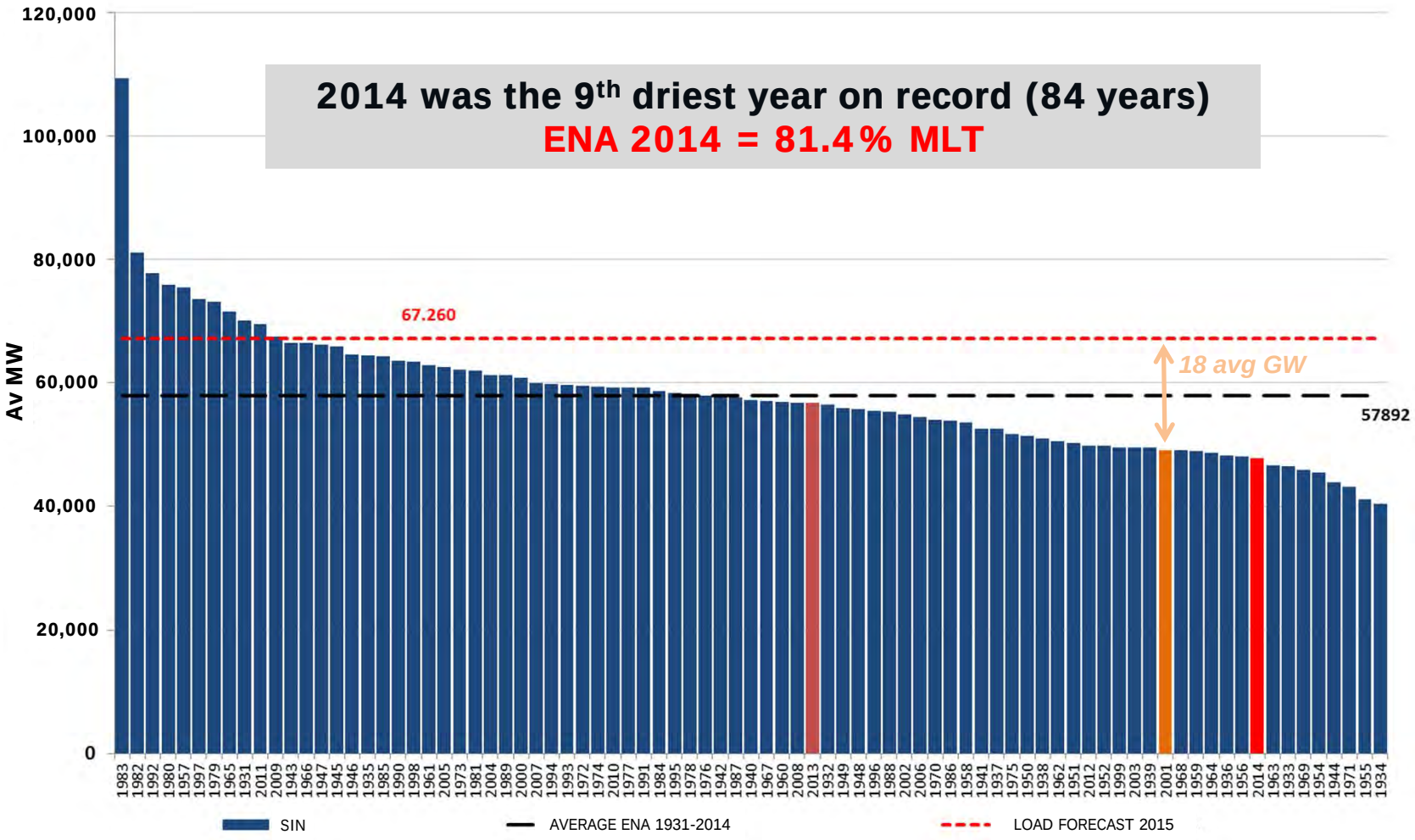
- A highly adverse hydrological scenario
  - 2014 was the 9th driest on record (84 years)
  - Substantial thermoelectric deployment
  - High short-term PLD prices
  - Low GDP growth proved to be a blessing in the light of the situation

- Consequences for the distributors
  - Involuntary exposure ➔ high exposure to the STM
  - Tariff freeze due to MP 579
  - Financing and injections from the Treasury: impact on future tariffs

- Consequences for the hydroelectric generators
  - ERM generation below Physical Guarantee ➔ high exposure to STM

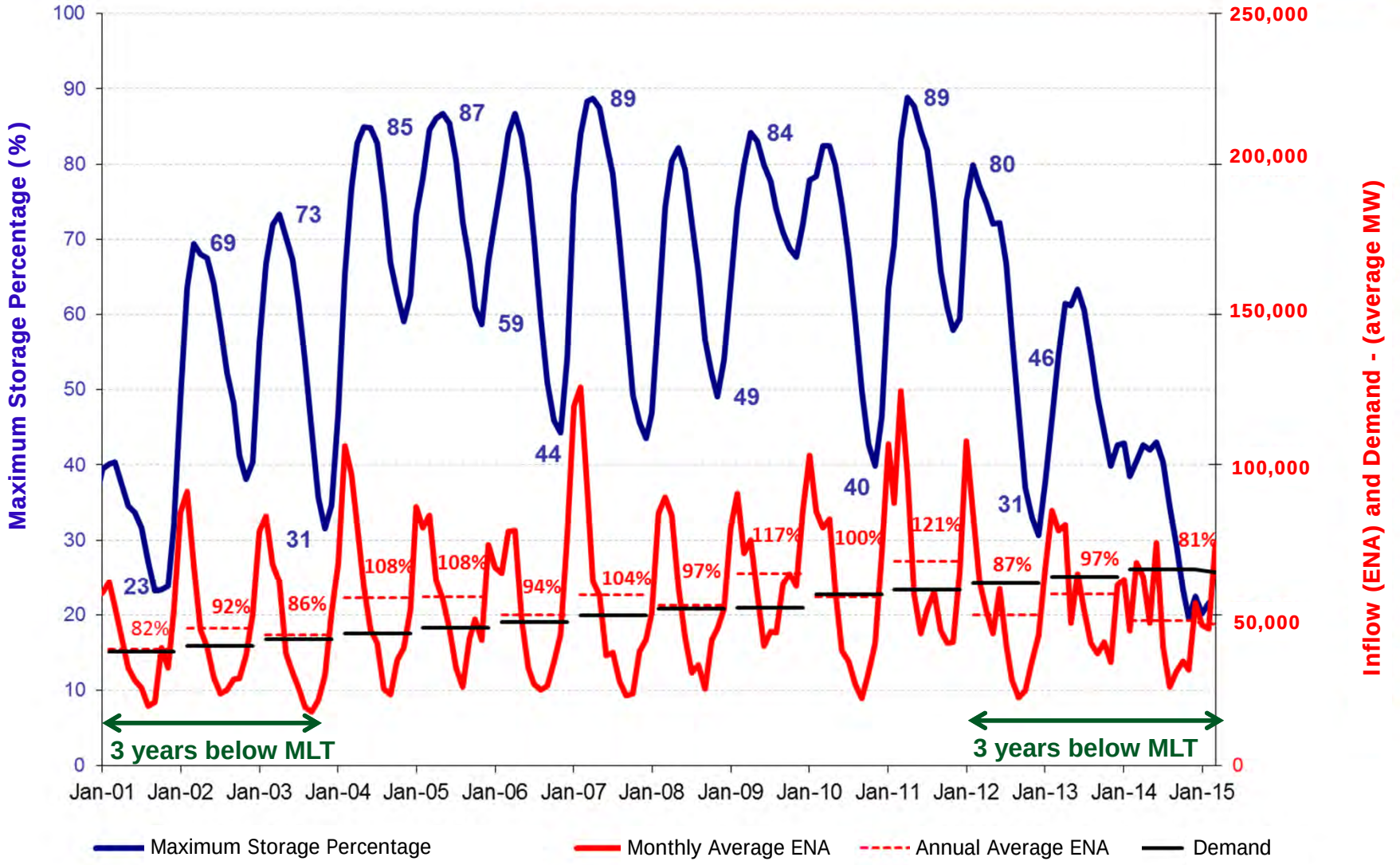
- Action for mitigating exposure: reduction in PLD ceiling

Adverse hydrological scenario in 2014



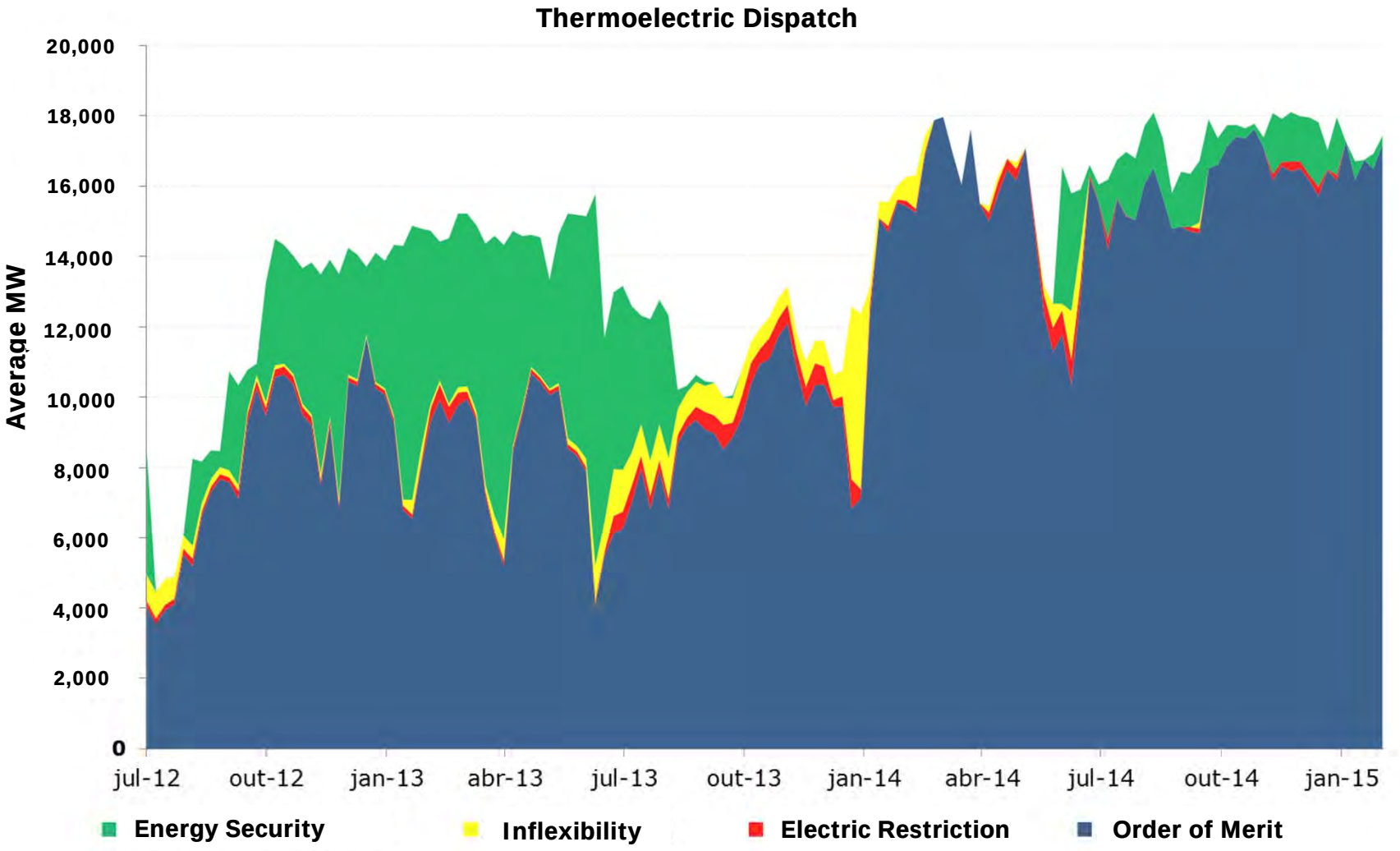
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Inflow (ENA) and storage



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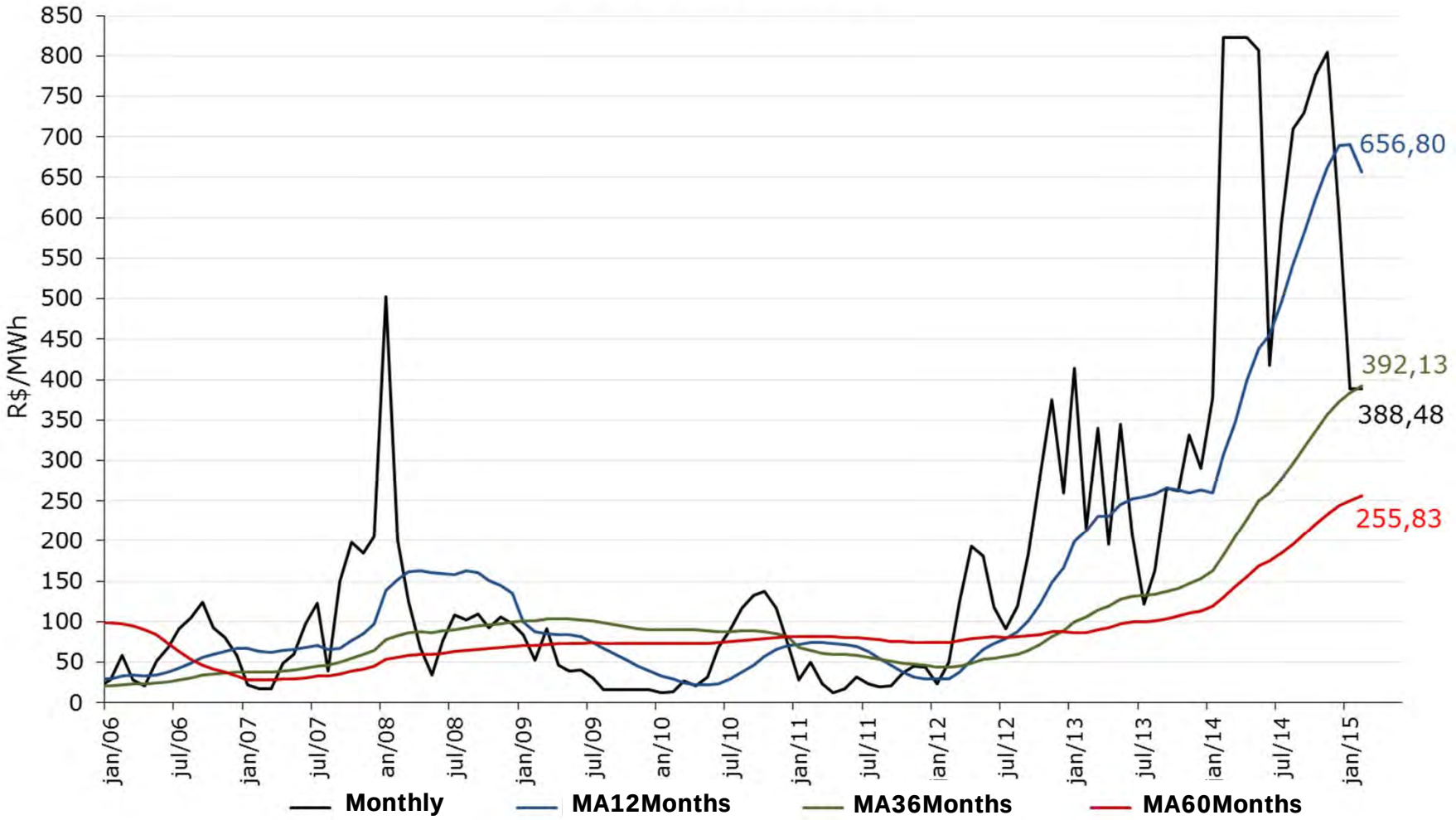
Thermoelectric Deployment



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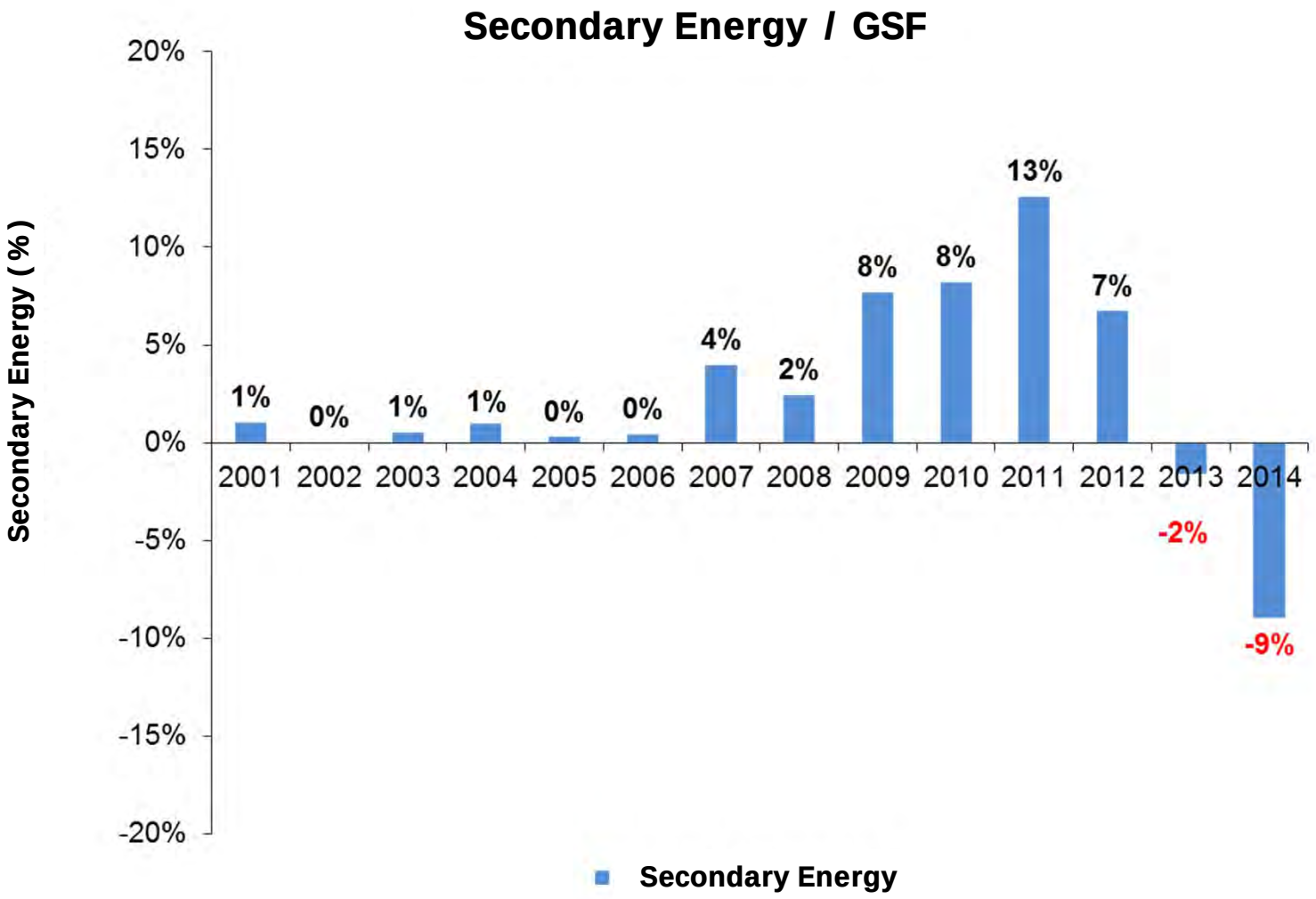
High PLDs

Southeast Spot Price



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Generation of the ERM

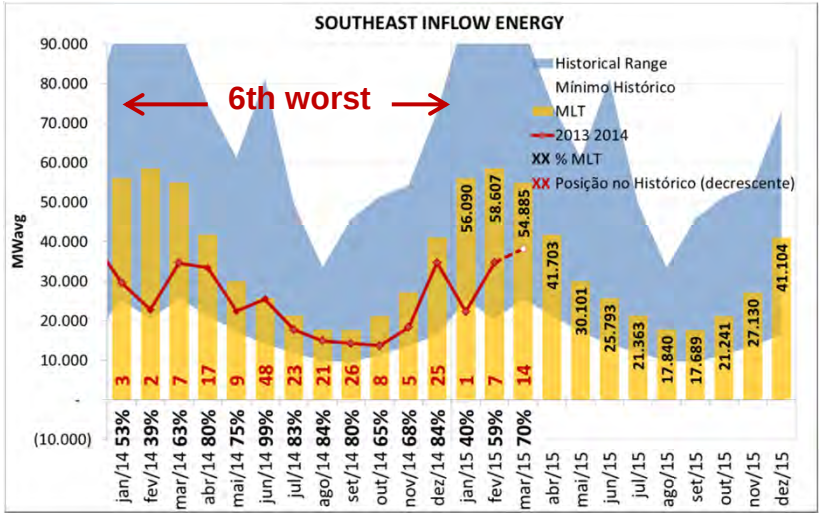


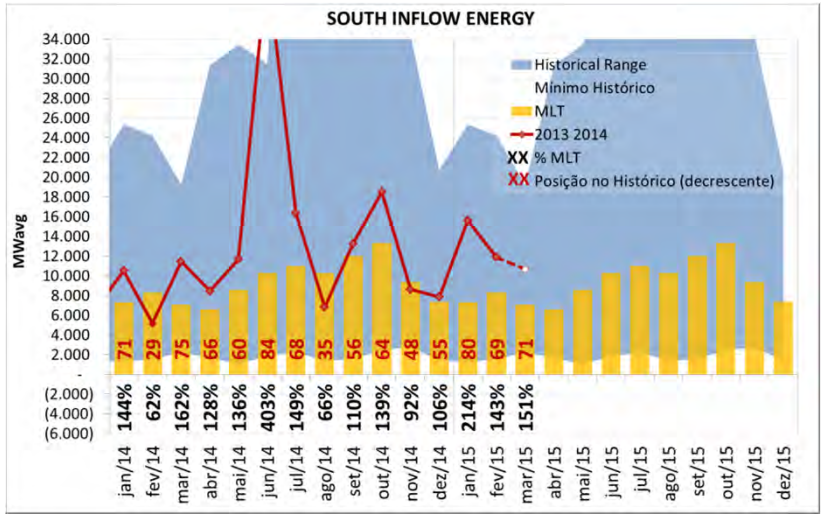
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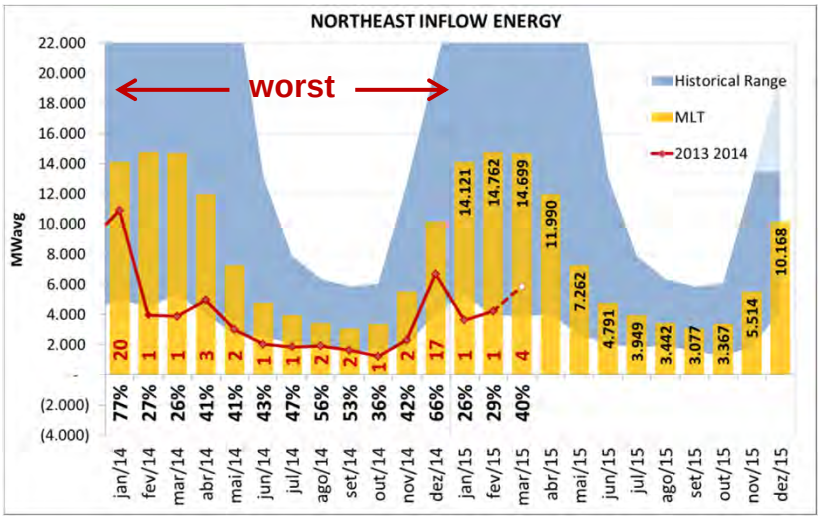
Retrospective 2014 (cont.)

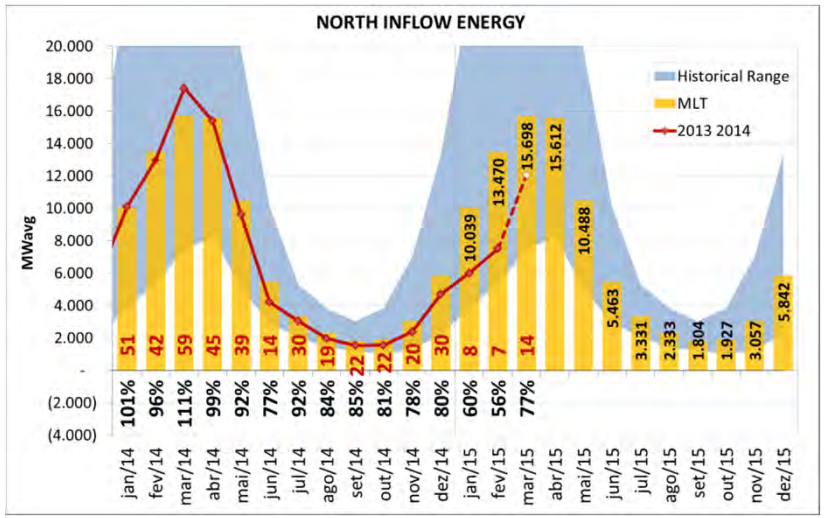
- The scenario was aggravated by...
  - Expansion based on run-of-river hydros and expensive thermoelectric plants
  - Major expansion in plants which cannot be deployed and resistance to contracting efficient thermal electric plants
  - Plant and transmission line delays
  - Revoking of plant authorizations
  - Reservoirs emptying quicker than expected
  - Specialists say that ENA for the Northeast is optimistic and that the models are overestimating hydro generation for the system by 4%

Inflow Energy





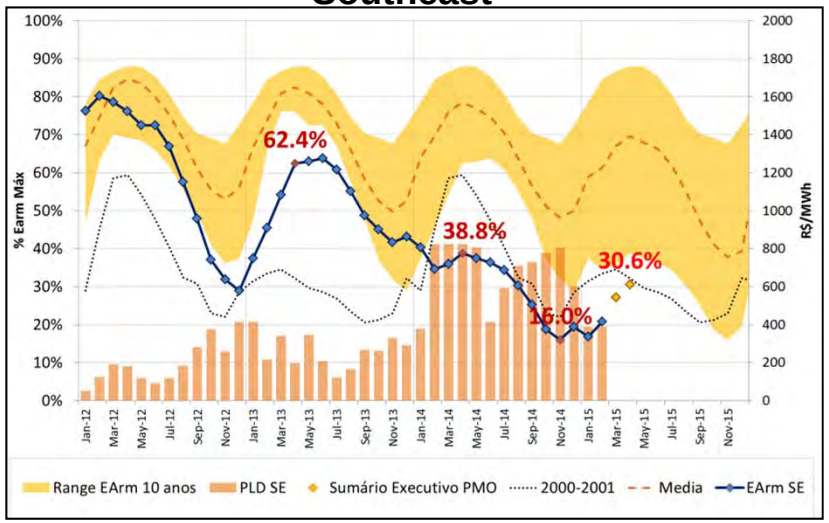




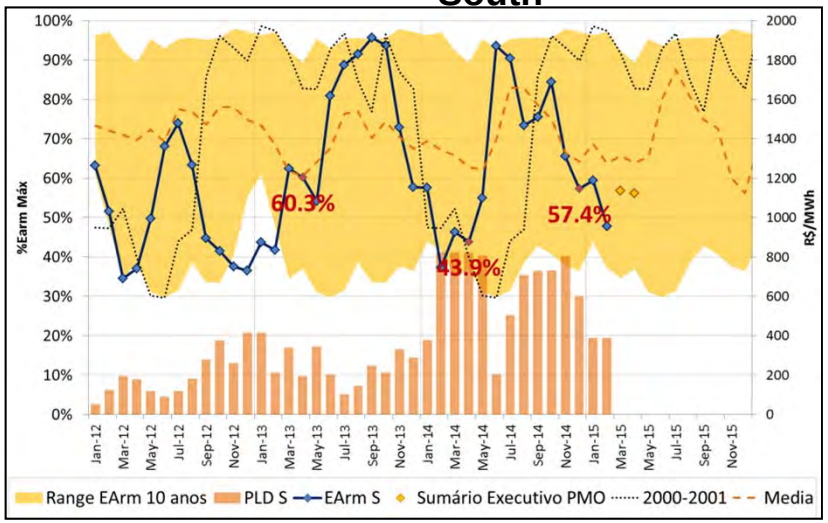
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Storage and Spot Price (PLD)

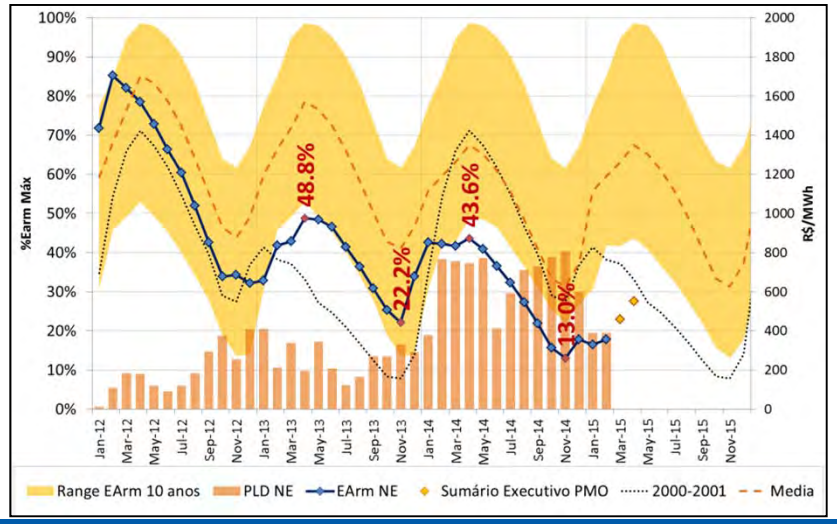
Southeast



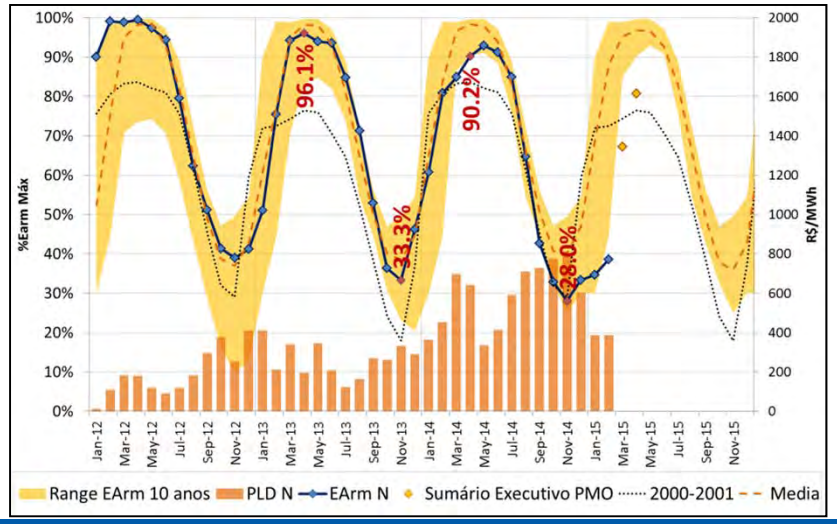
South



Northeast

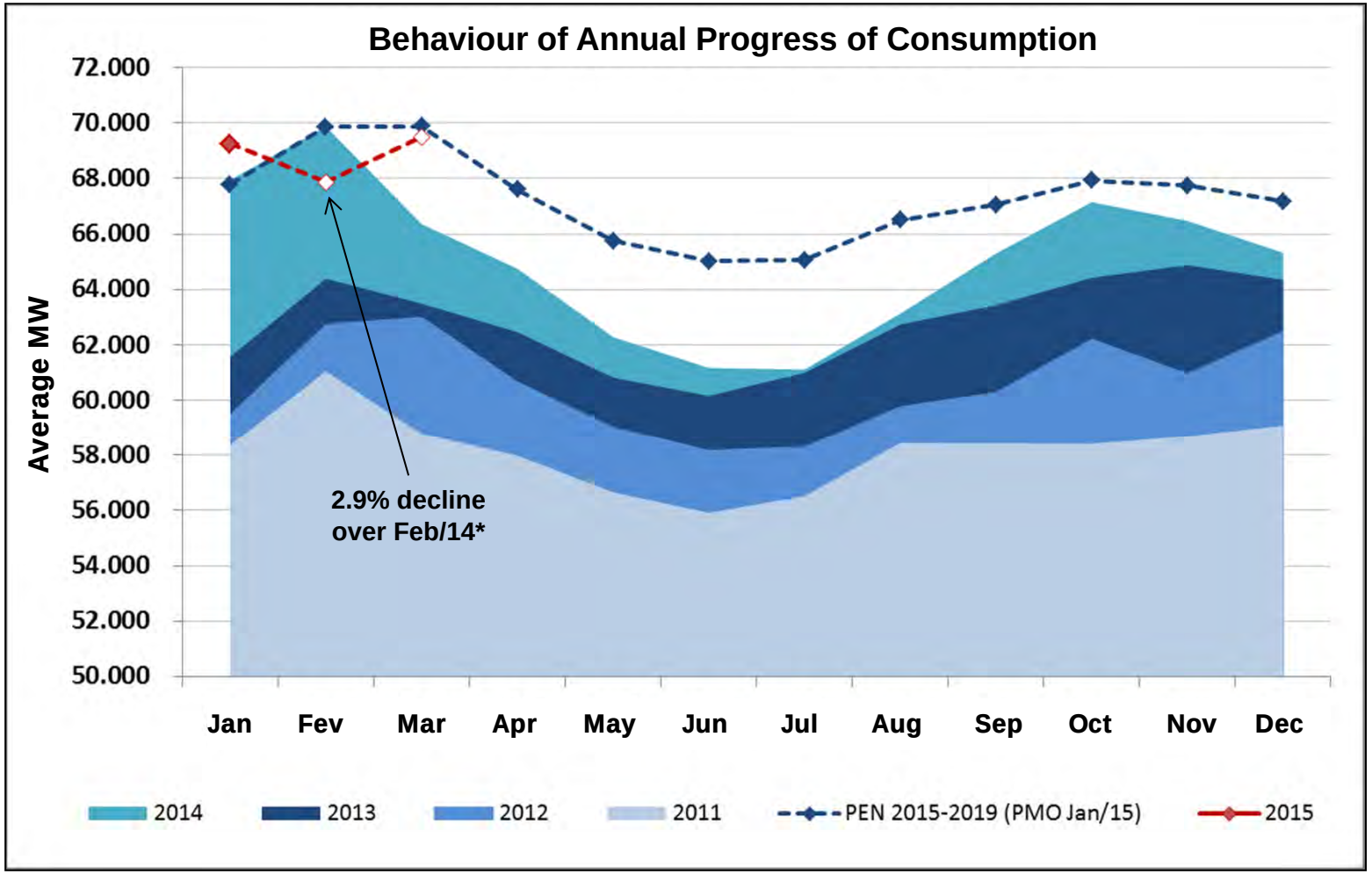


North



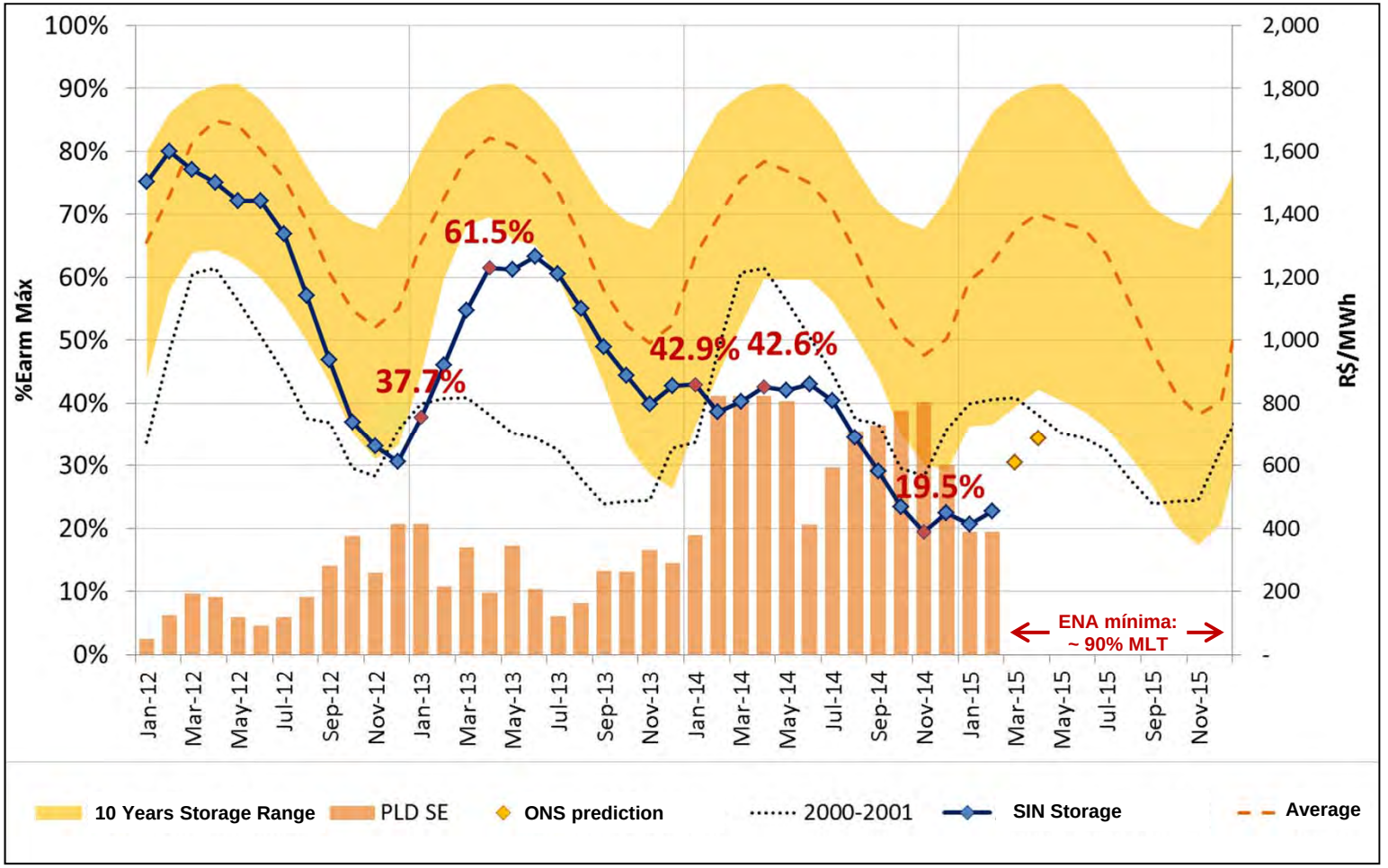
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Consumption Progress



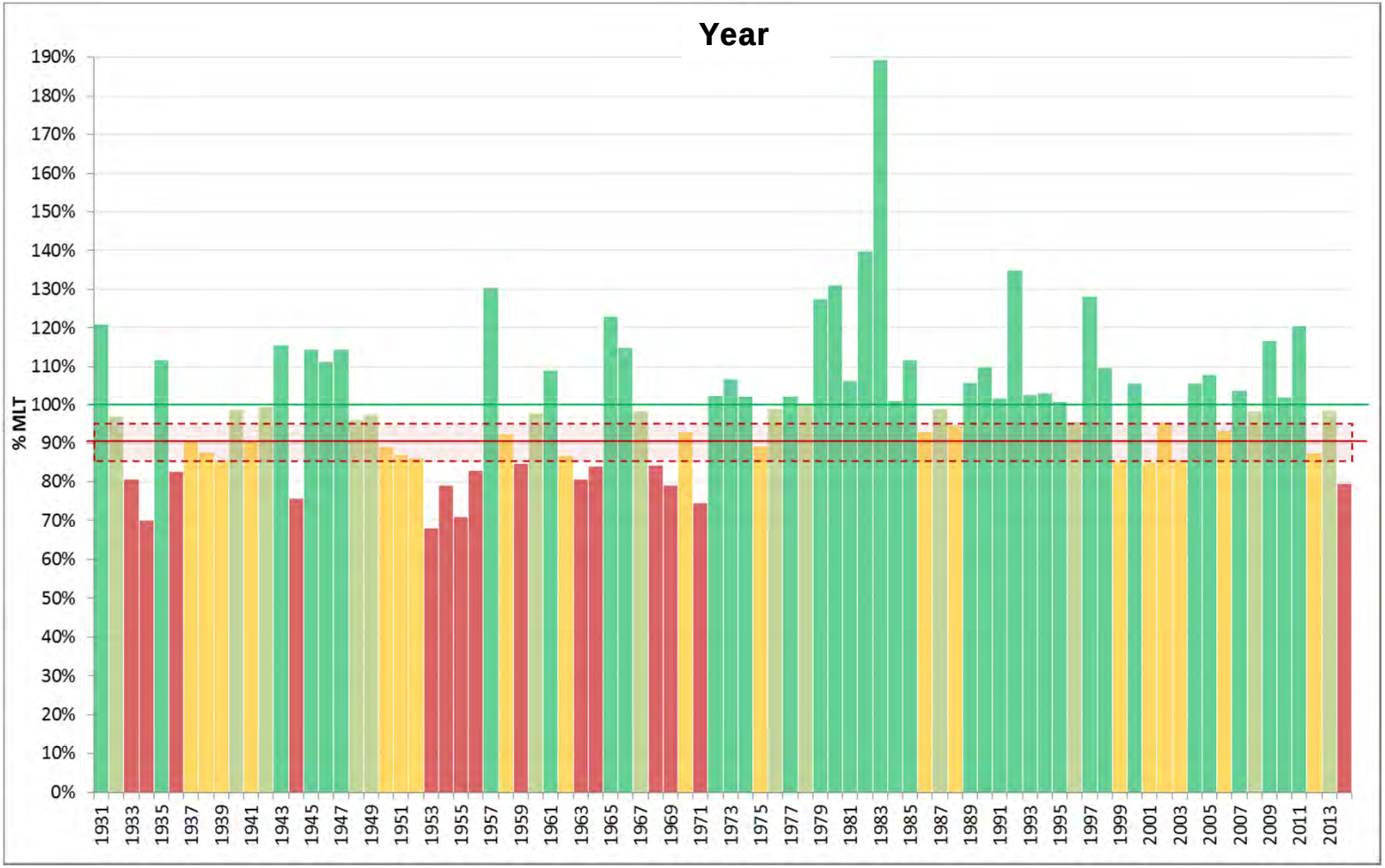
Consumption decline on Feb/15 versus the same month in 2014 was influenced, in addition to the changes in economic activity, by two main factors: (i) temperature in 2015 lower than the one recorded in 2014; and (ii) carnival holiday in 2015 was in February when on 2014 was in March.

Storage (SIN)



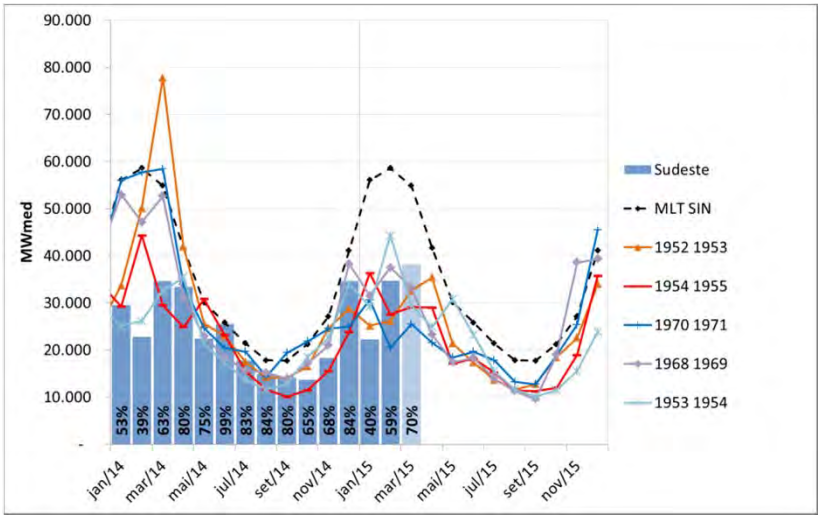
* Minimum Energy Inflow in 2015 to reach 10% of storage in Nov-15. Variations in the spatial and temporal distribution of rainflow may alter the estimated values for the evolution of storage due to transmission limitations, and possible loss of producibility and spillage, particularly in Northern and Southern subsystem. The same note applies to the demand and availability of SIN power plants (PMO Feb-15).

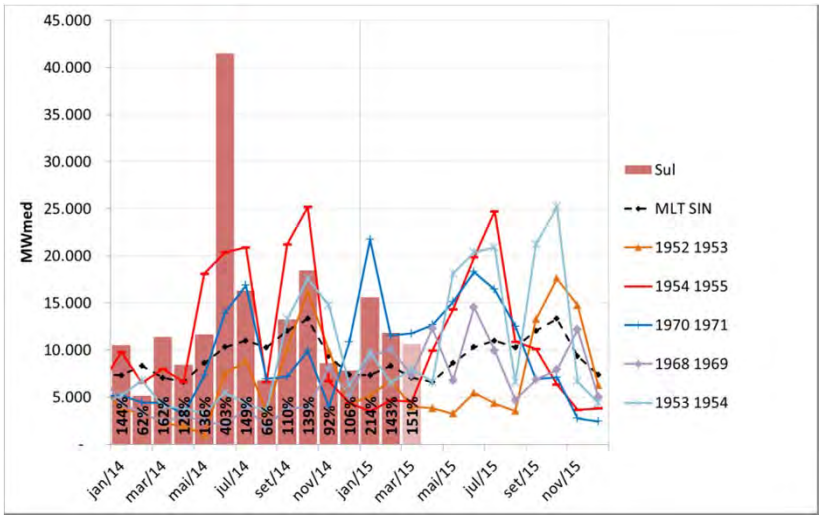
Minimum Energy Inflow* (SIN)

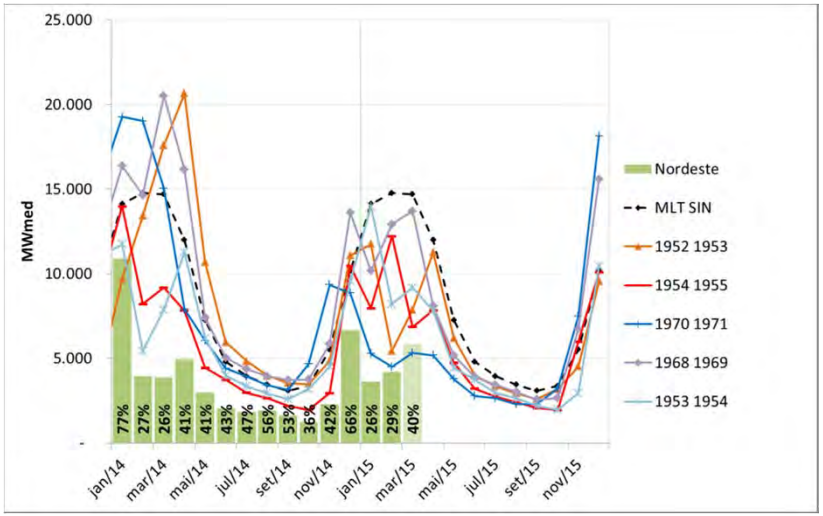


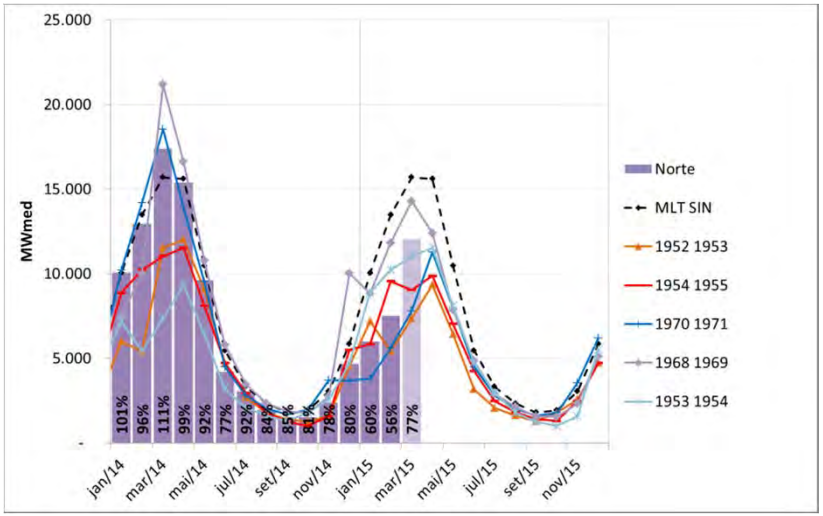
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Critical Energy Inflows with Similarity in History









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Challenges for 2015

- November and December settlement
  - Urgent need for finding a sector solution to distributors' cash difficulties
- Solution for the distributors' structural equilibrium
  - Tariff realism already indicated by both MF and MME: extraordinary tariff revision in 2016 and tariff flags
  - Anticipated contracting of existing energy (A-2)
- Possibility of rationing
  - Specialists declare that there is a 50% risk of rationing
  - Political decision to order official rationing (reduction of contracts)
  - Effect of rationing on sector players depends on several variables: level of rationing and consequent rationed PLD, mix of portfolio assets, contracting levels, types of contract, average price of the contracts etc

Challenges for 2015 (cont.)

- Planning expansion and auctions
  - Thermal sources must be considered in the energy matrix
  - There has already been a change in the government's perception of the importance of TPPs (last A-5 auction)
  - Essential to unlock the natural gas market
  - Power market and peak contracting for the system

- PLD ceiling
  - Need for a robust methodology
  - Current system is very sensitive to hydrological conditions: high and more volatile OMCs, but will not be reflected in the market in 2015 due to the PLD ceiling
  - Desirable for the PLD ceiling to reflect price/tariff realism from 2016

Challenges for 2015 (cont.)

- Deployment outside the order of merit (CNPE 3 Resolution)
  - Success in judicial actions indicates legal fragility of the load
- Ordinary revision of the Physical Guarantees for the HPPs
  - Need for a far-reaching debate on the assumptions with the players involved
- Access to the transmission system
  - Necessity for integration of G-T planning
  - Little dispute at the last TL auction is not a good sign
- Strengthening the regulator

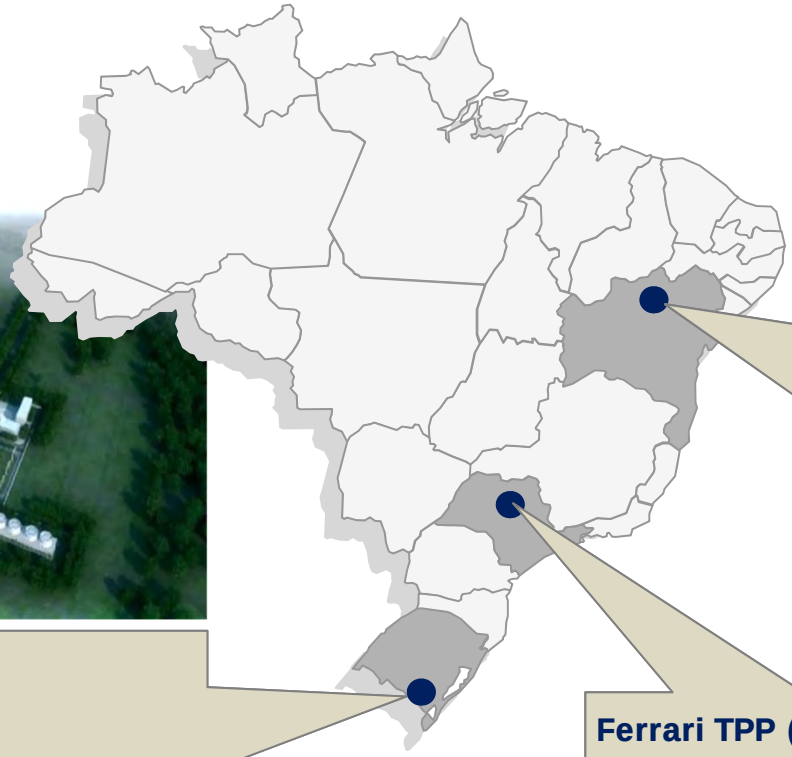
Tractebel's response to the return of price rationality in the new energy and free market auctions

Expansion in the Generator Complex

Projects sold at the A-5 Auction of 2014







Campo Largo (BA): 6 Wind Farms

Installed Capacity: 178.2 MW
Fuel: wind
Sold Energy: 82.6 MWm
Energy Sales Contract:
- Price: R$ 135.46 / MWh
- Term: 20 years
- Annual Fixed Revenue: ~ 95.8 MBRL

Pampa Sul TPP (RS)

Installed Capacity: 340 MW
Fuel: domestic thermal coal
Sold Energy: 294.5 MWm
Energy Sales Agreement:
- Price: R$ 201.98 / MWh
- Term: 25 years
- Annual Fixed Revenue: ~ 473.3 MBRL

Ferrari TPP (SP) - expansion

Installed Capacity: 15 MW
Fuel: sugarcane bagasse
Sold Energy: 9.8 MWm
Energy Sales Agreement:
- Price: R$ 202.00 / MWh
- Term: 25 years
- Annual Fixed Revenue: ~17.7 MBRL



A-5 Auction - 2014: Pampa Sul TPP

- Location: Candiota/RS
- Installed Capacity: 340 MW
- Domestic thermal coal
- CAPEX: ~1,800 MBRL
- Implementation Term: 42 months
- Preliminary License (2x340MW): issued in November/2014
- COD: 01/01/2019

- PPA
  - RCE (LEN 2014): 294.5 average MW
  - Term: 25 years
  - R$ 201.98/MWh
- Principal contracts
  - EPC Turnkey Lump-sum
  - Coal
  - Limestone
  - Protocol for ICMS exemption signed with RS state government

A-5 Auction of 2014: Campo Largo Wind Farm Complex

- Location: Umburanas and Sento Sé, Bahia
- Installed Capacity (1st Phase): 326.7 MW
- CAPEX: ~1,700 MBRL
- Net Capacity Factor (P65) = 49.8%
- Preliminary License: issued (valid until 04/04/2019)
- Installation License: expected in 2Q2016
- Electricity Connection: ~45km, 230kV - SE Ourolândia II
- Implementation Term: 30 months, beginning 3Q16
- 6 Projects in the RCE
  - RCE (LEN 2014): 82.6 average MW
  - Term: 20 years
  - R$ 135.46/MWh
  - COD: 01/01/2019
- 5 Projects in the FCE
  - COD: 1st half 2019

A-5 Auction of 2014: Campo Largo Wind Farm Complex

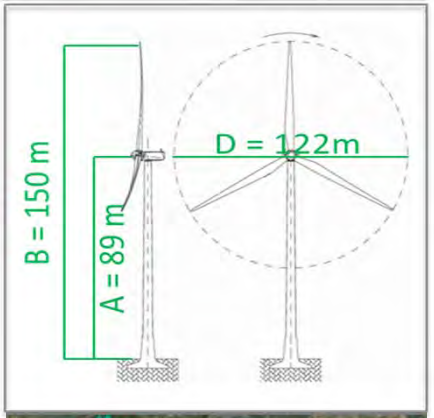
- Principal contracts

- Alstom ECO 122 (27 MW) wind turbines mounted on an 89 m steel tower
  - 121 wind turbines
  - Design, engineering, manufacture, transportation, on site delivery, complete assembly, installation and commissioning

- Civil Work
  - Internal and external access, foundations, earth moving and buildings
  - Signature of contract forecast for 3Q15 following the conclusion of soil studies and review of the basic projects

- Electromechanical
  - Construction of the 34.5/230kV SS, 34.5kV TLs connecting the WTGs to SS, 230kV TL connecting SS to Ourolância II SS (SIN) and a connection bay in Ourolândia II
  - Contract signature expected for 3Q15, following conclusion of soil studies and review of basic projects







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A-5 Auction of 2014: Ferrari TPP

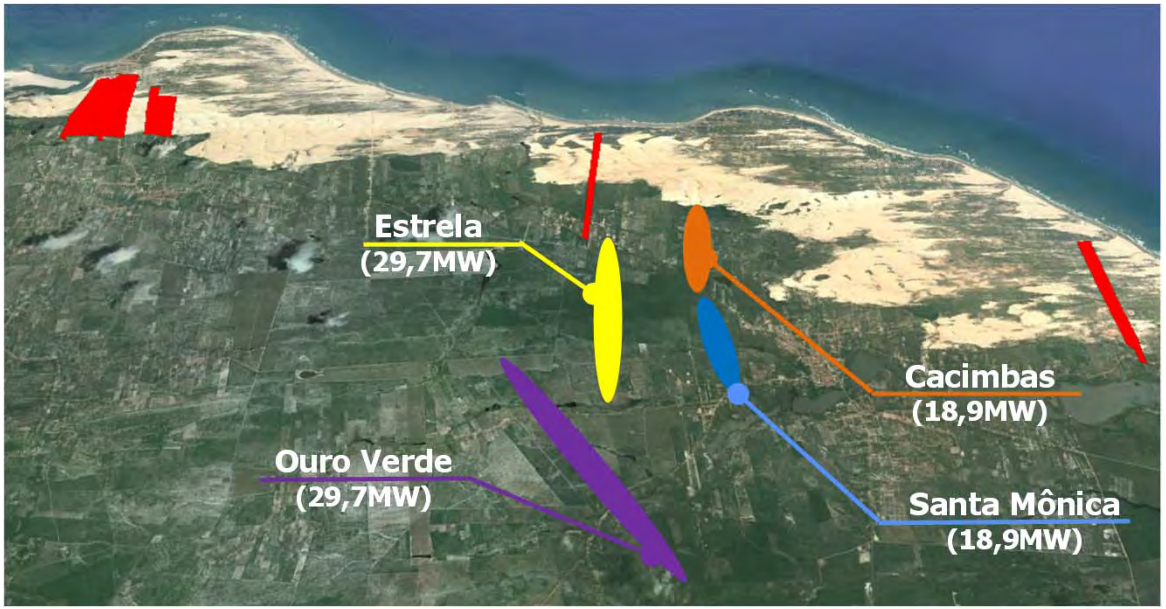
- Location: Pirassununga/SP
- Sugarcane biomass
- Installed Capacity: 80.5 MW (following modernization and expansion)
- Commercial Capacity: 35.6 average MW (following modernization and expansion)
- Investment: 85 MBRL (modernization and expansion)
- Project under construction

- Sold Energy at A-5 Auction 2014
  - 9.8 average MW
  - R$ 202.00/MWh



Project under construction: Santa Mônica Wind Farm Complex

- Location: adjacent to the Trairi Wind Farm Complex (CE)
- Installed Capacity: 97.2 MW
- Commercial Capacity: 47.3 average MW
- Production directed towards the FCE (special clients)
- Investment: ~460 MBRL
- COD: 2016
- 36 Alstom ECO122 wind generators of 2.7 MW
- TL concluded



Areas in red: Trairi Wind Farm Complex