

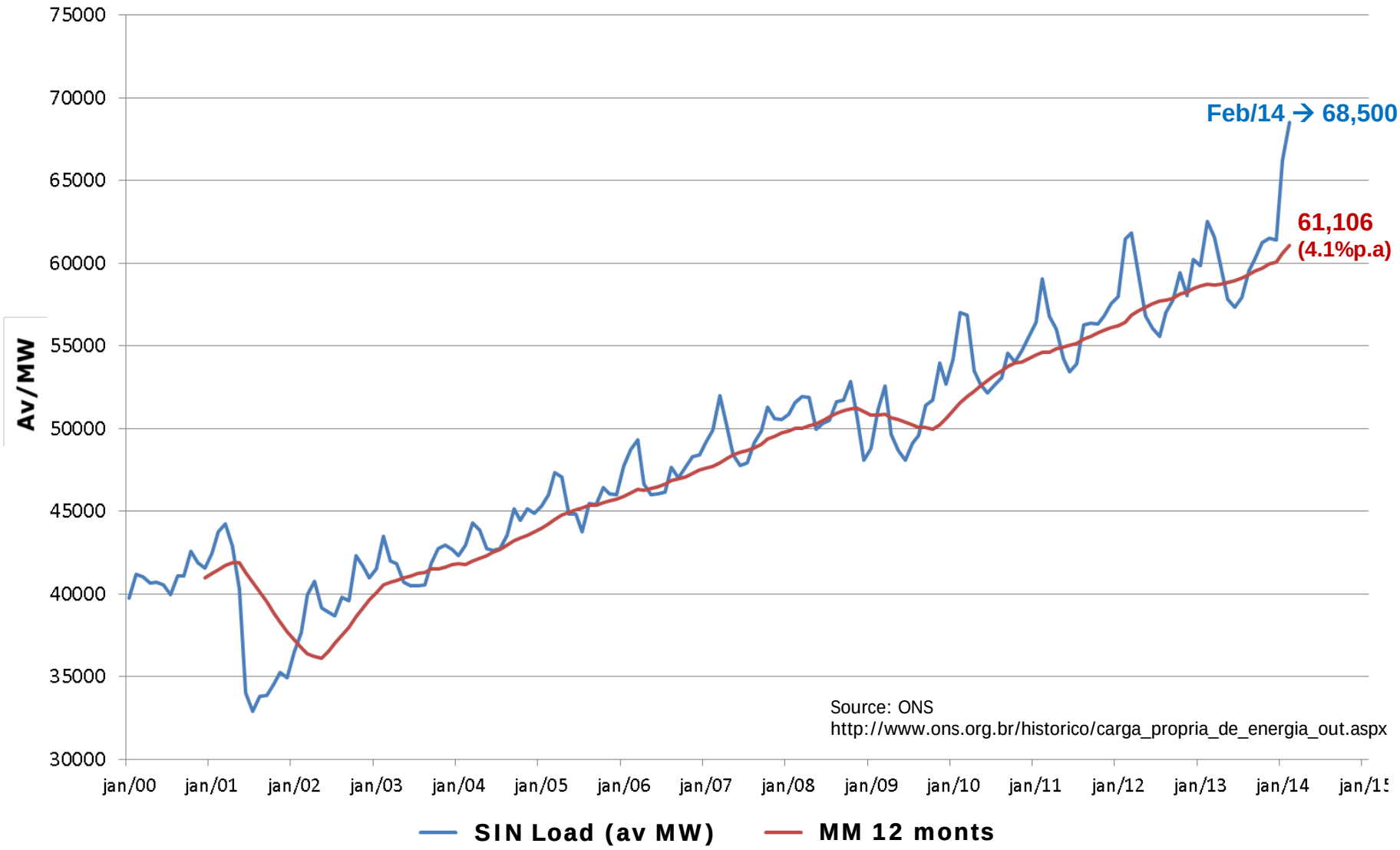
Prospects for the Energy Market

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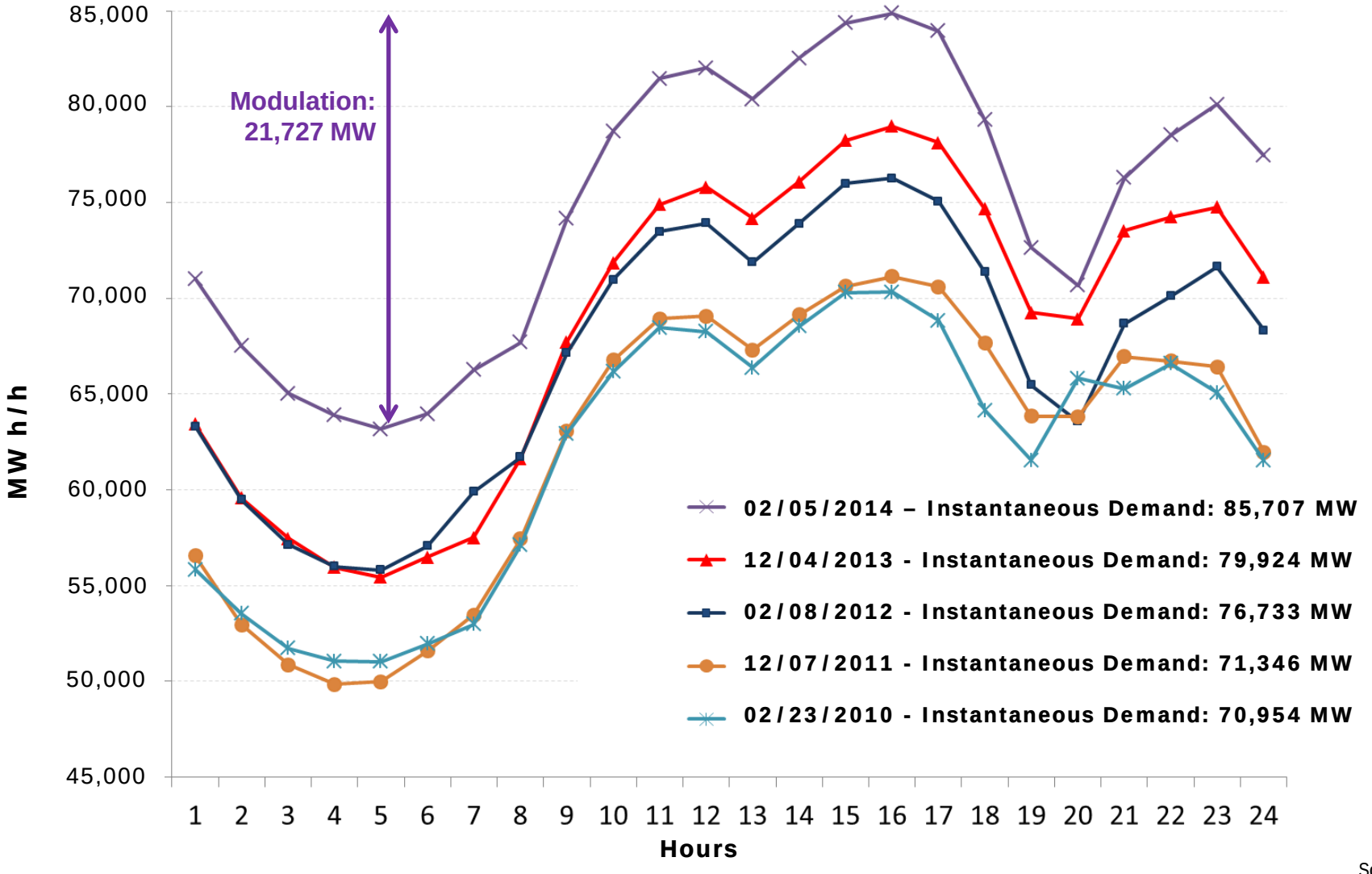
March 2014

The System: Current Scenario

Record monthly demand for electric energy...

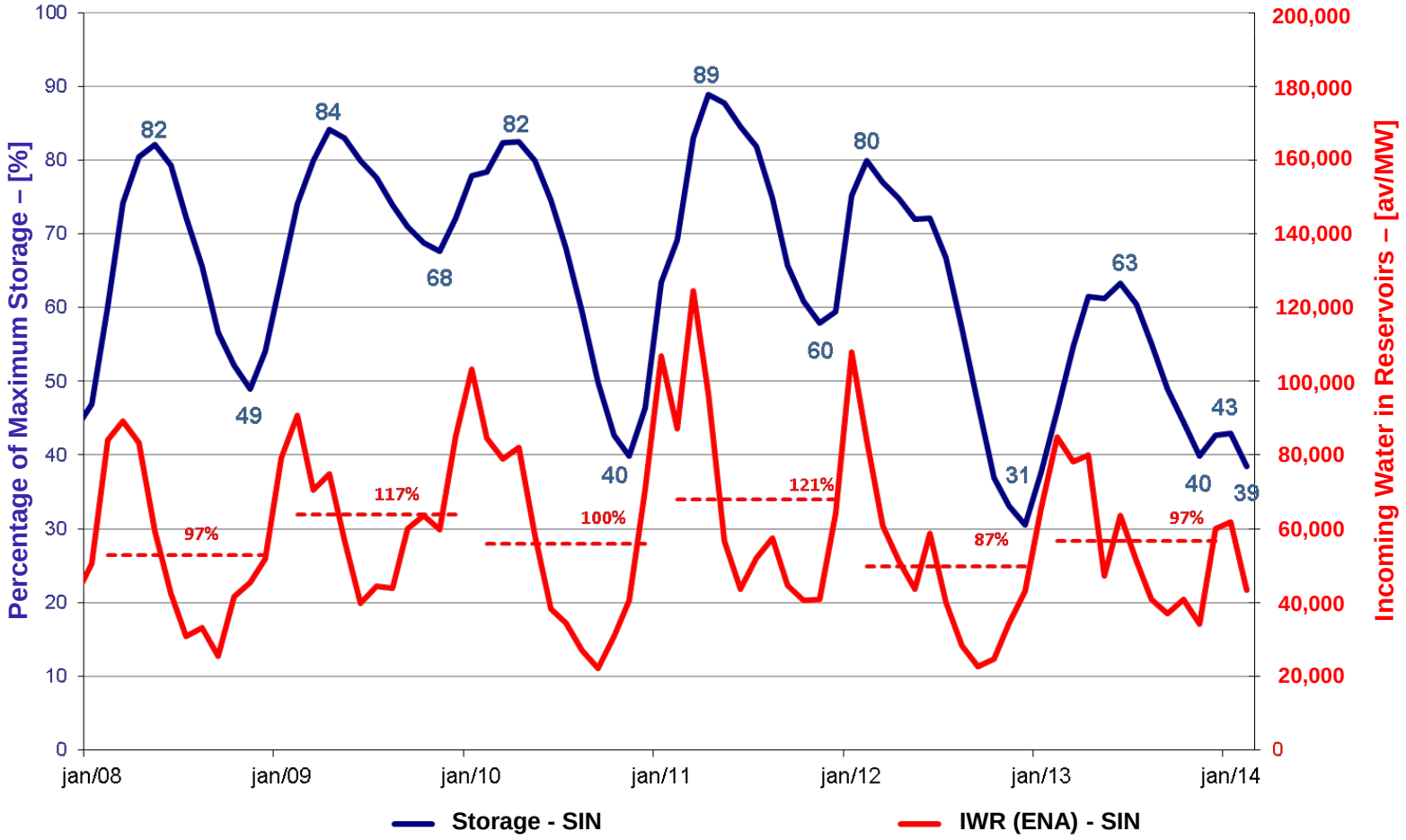


... and records in instantaneous demand as well



Source: ONS

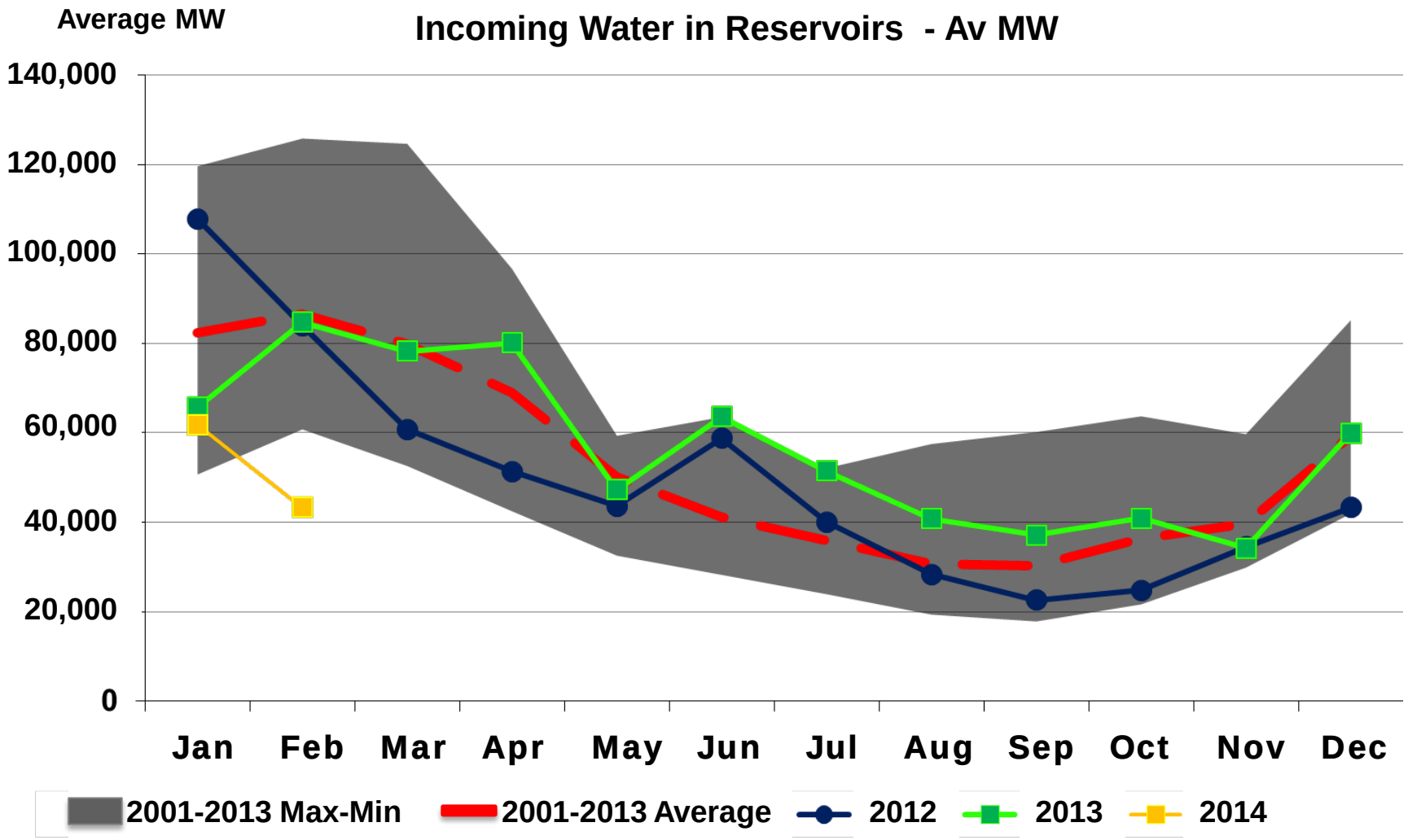
Incoming water below average and below storage



2013: lowest level at the end of the rainy season since rationing (63%)

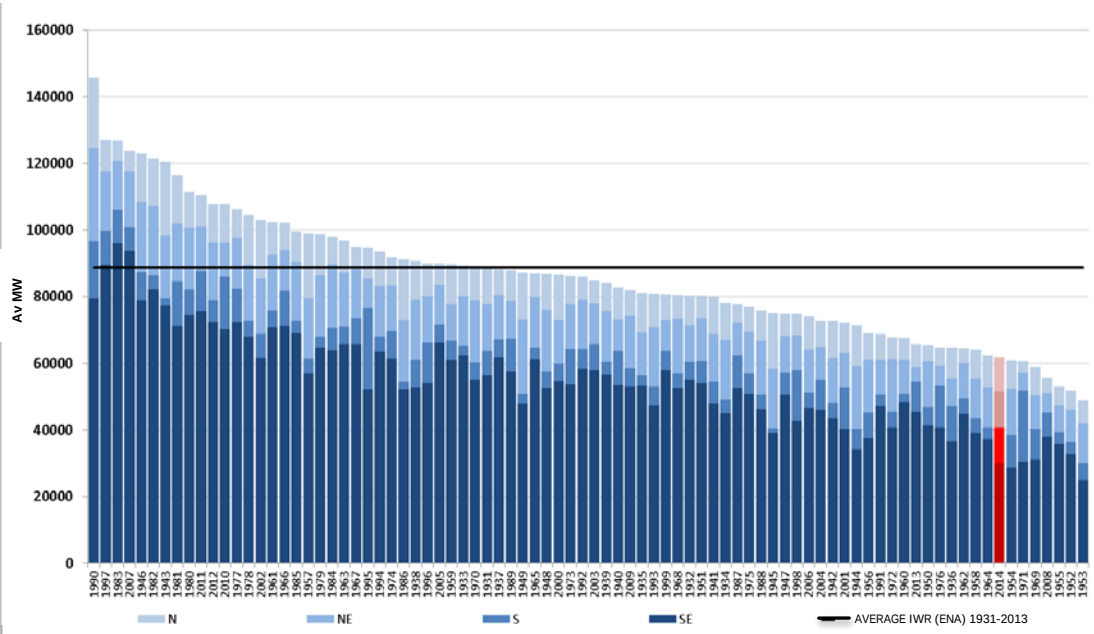
Current storage at the beginning of March (39%) is lower than at the time of rationing (40%)

Incoming water below average (1)



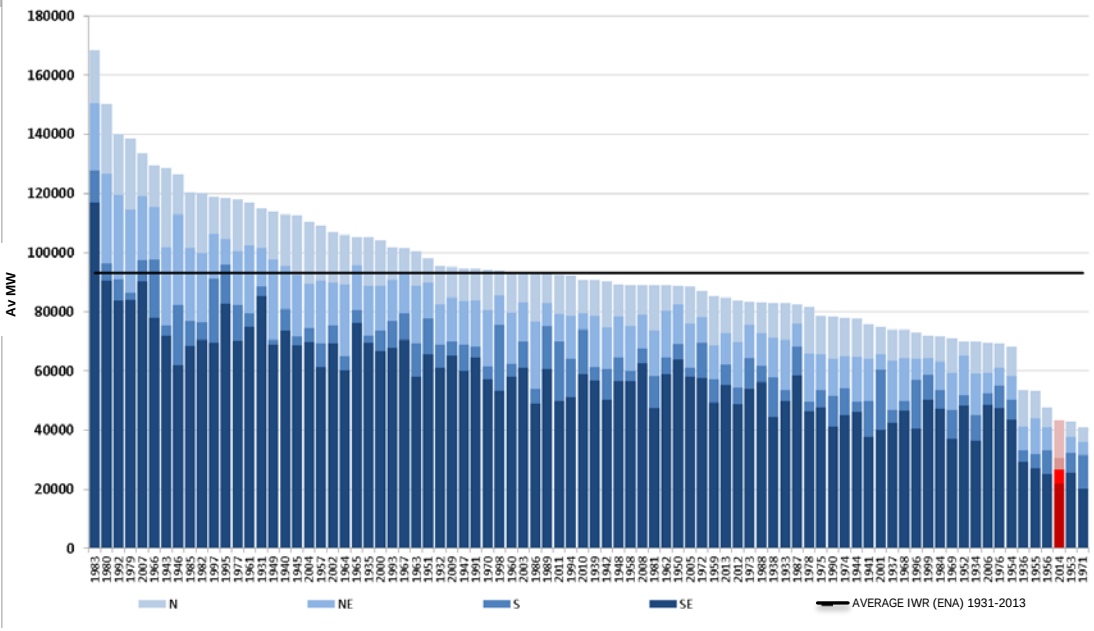
Incoming water for the months of January and February 2014 was the lowest since 1971

Incoming water below average (2)



January 2014

- 8th worst series over a period of 84 years
- LTA SE → 53%
- LTA NE → 77%

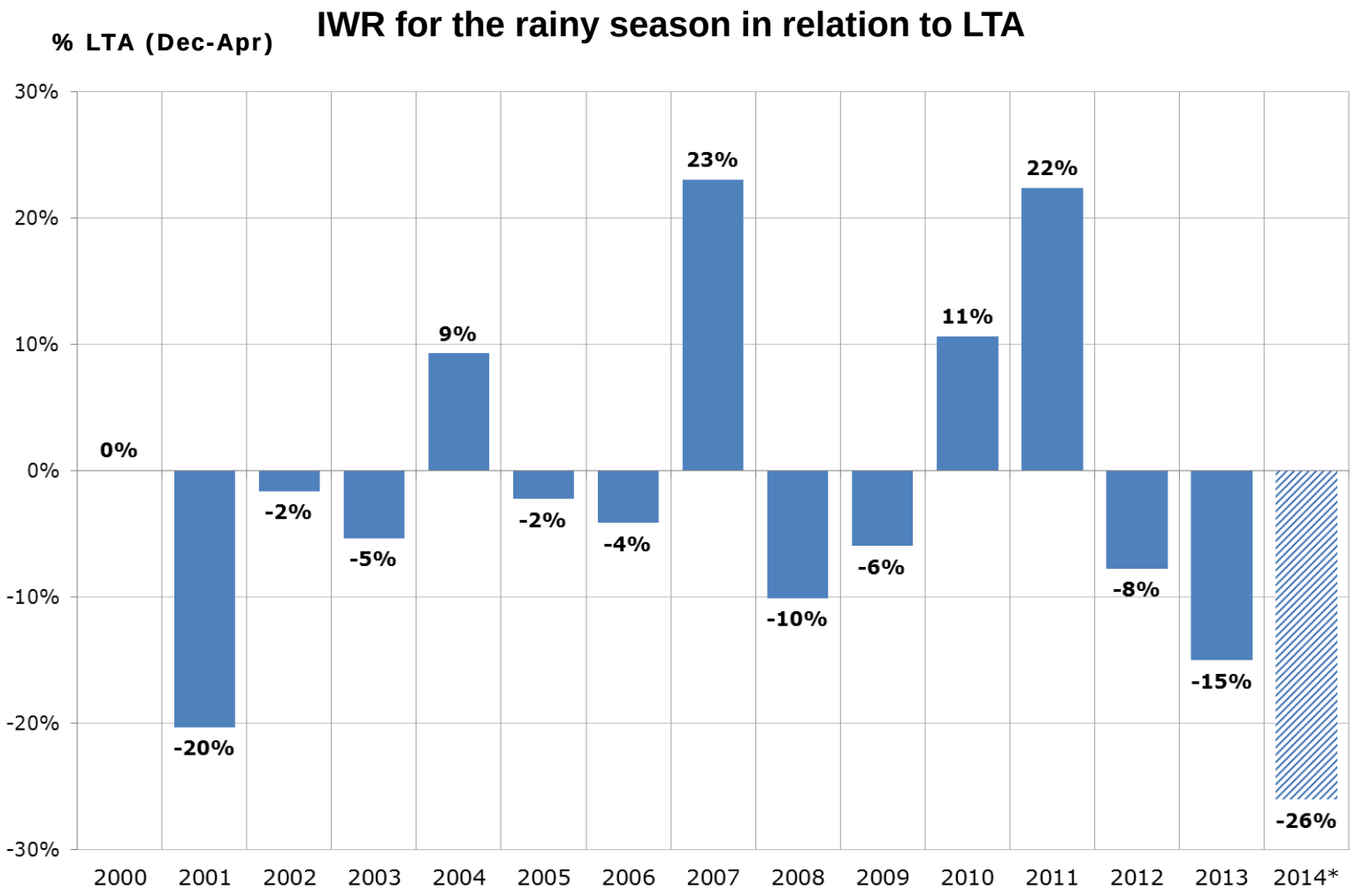


February 2014

- 3rd worst series over a period of 84 years
- LTA SE → 45%
- LTA NE → 27%

*** SE submarket accounts for 70% of SIN maximum storage while the NE accounts for 18%**

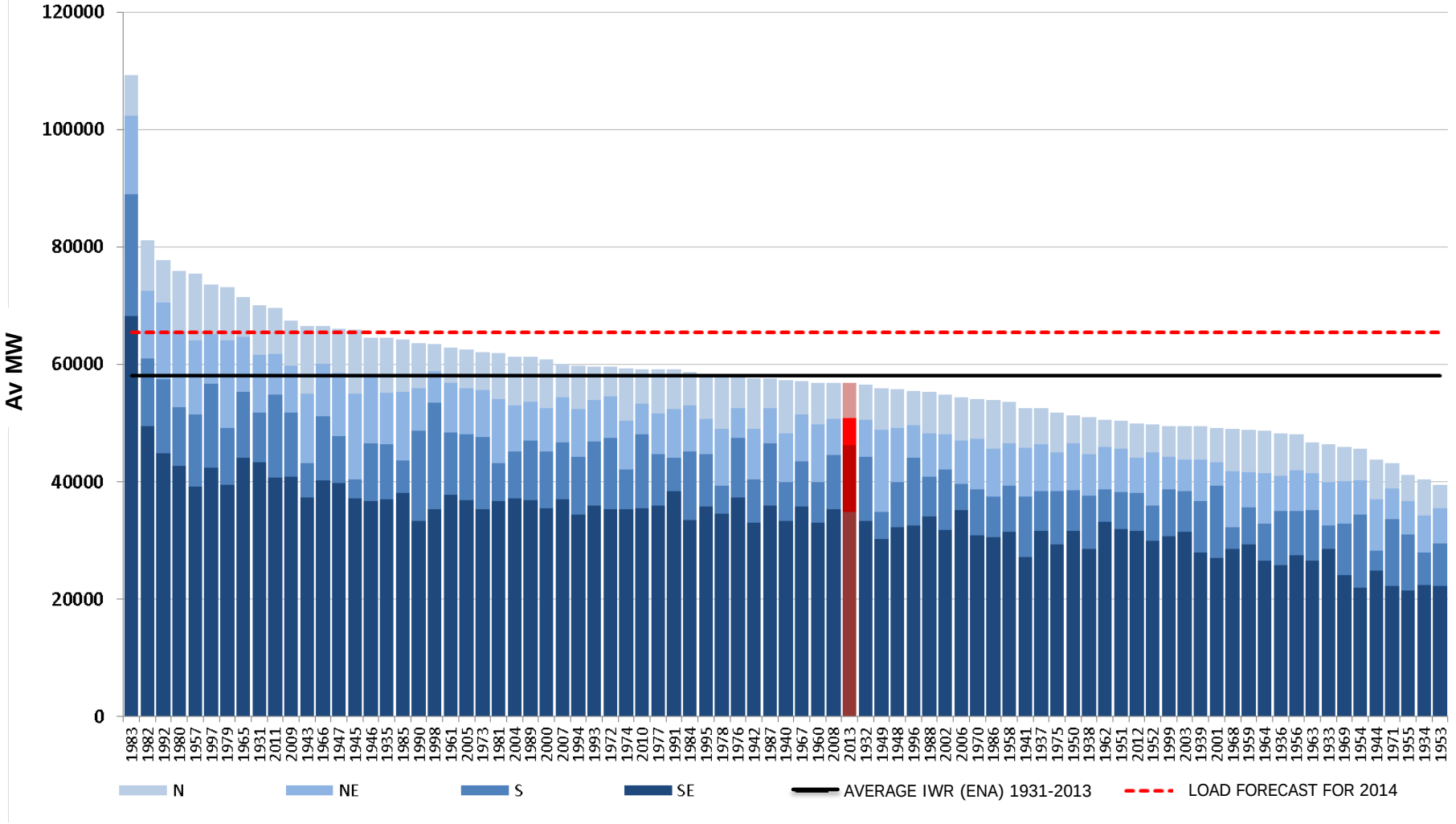
Principally in the rainy season...



*IWR Mar 71% LTA
IWR Apr 100% LTA

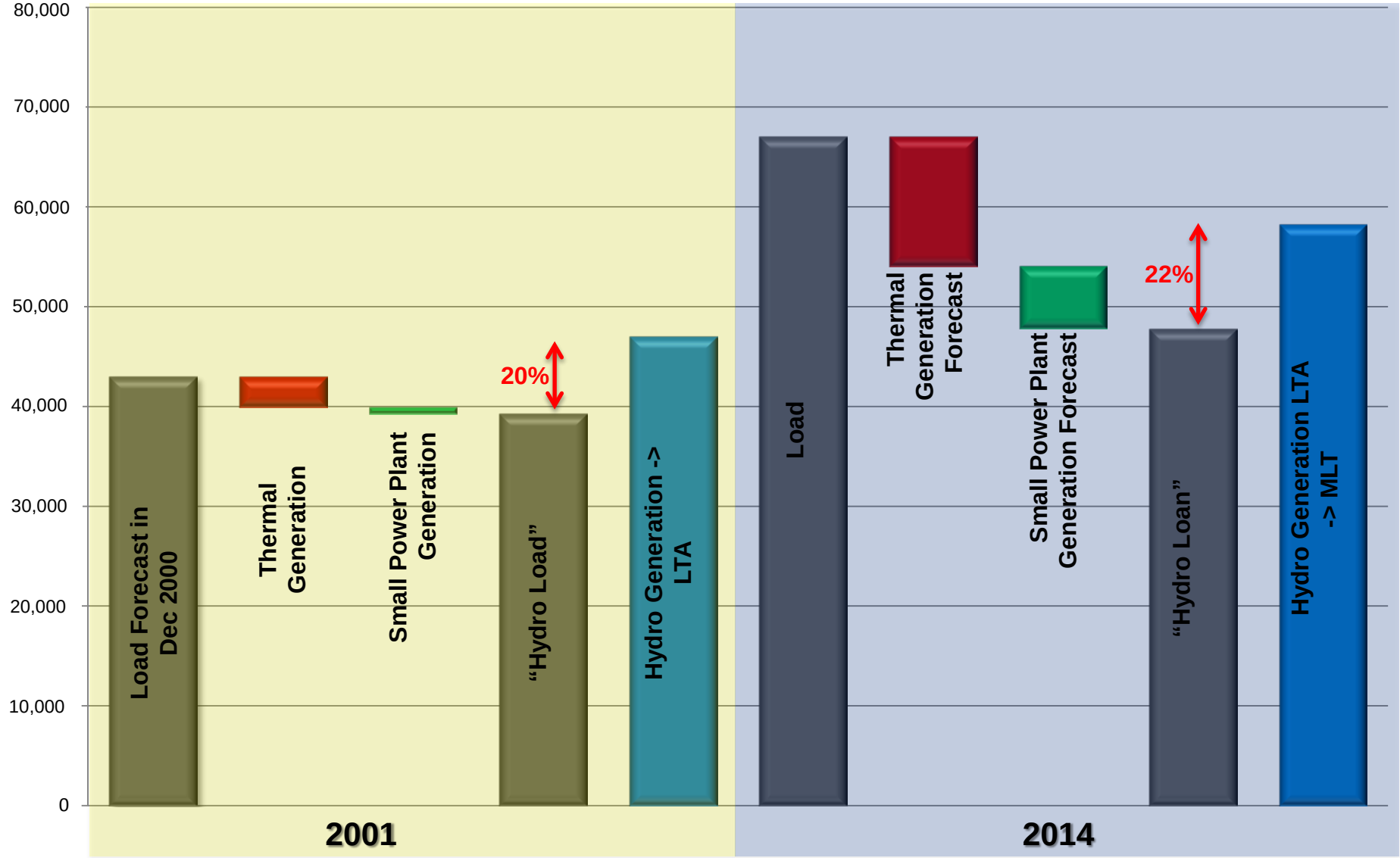
The rainy season (Dec-Apr) is responsible for 60% of the average incoming water

Track Record of Incoming Water into Reservoirs (1931-2013)



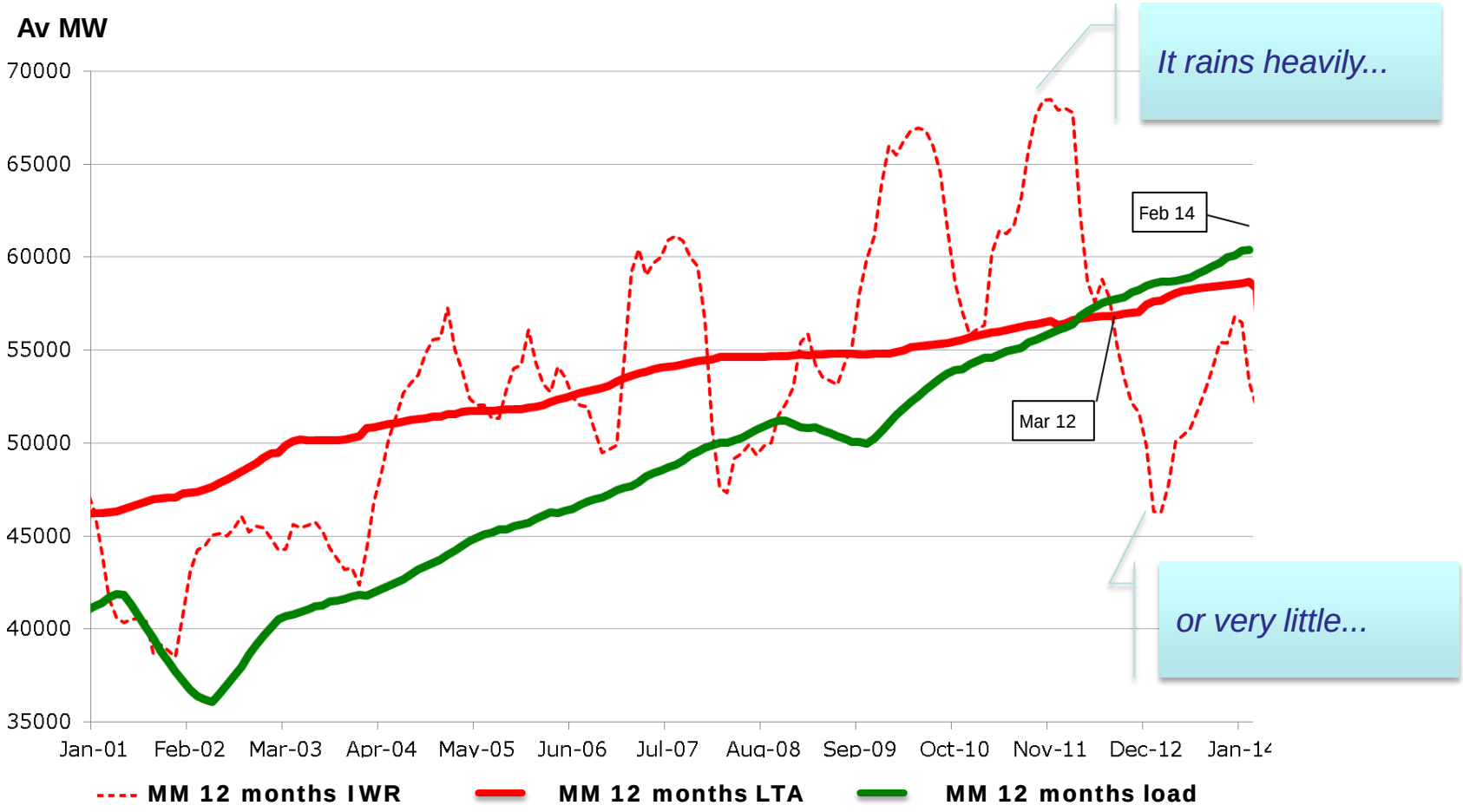
On average, 7.5 average GW of thermal generation plus energy from alternative sources is required

Meeting load requirements: 2001 x 2014



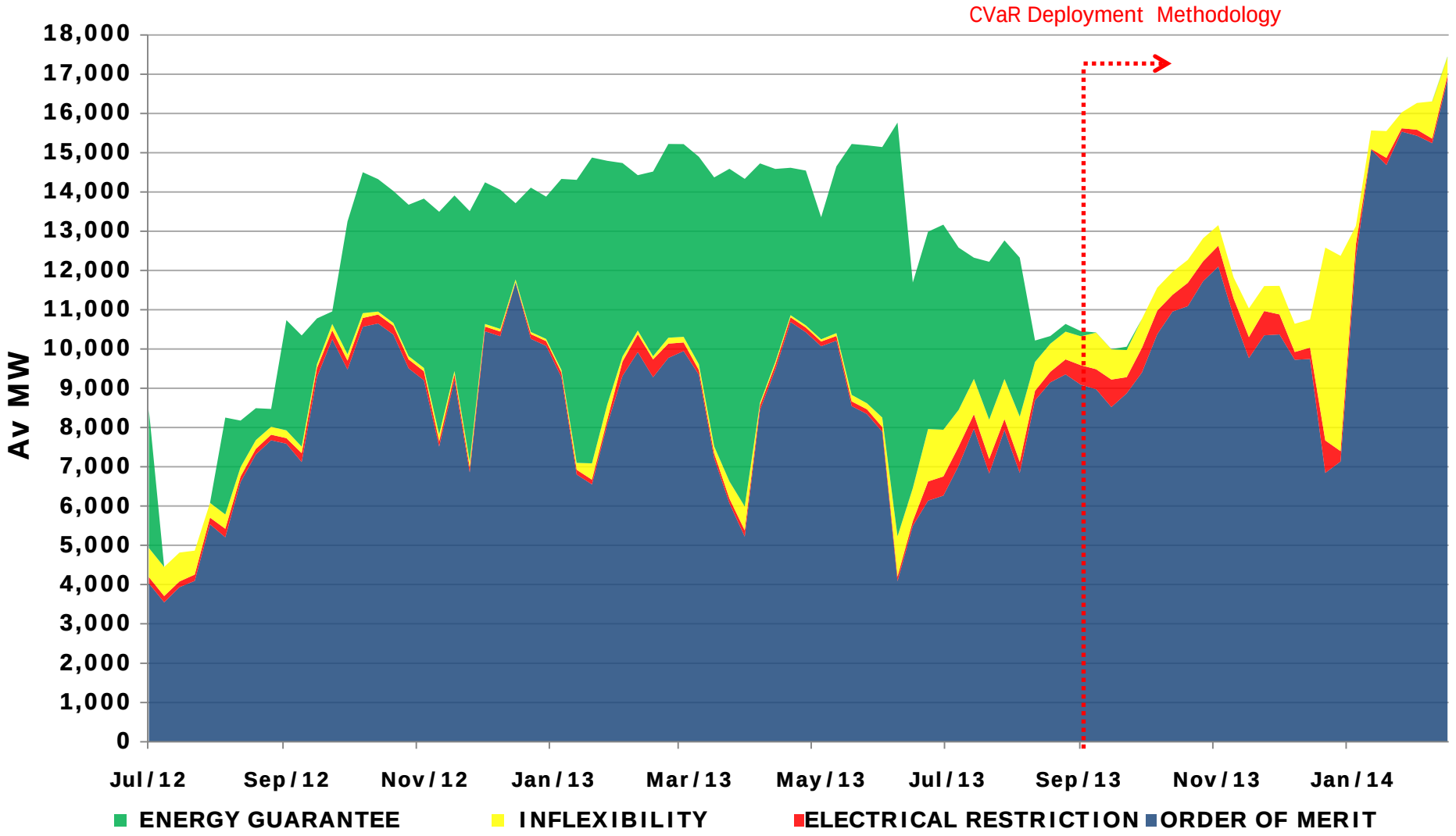
IWR x LTA x Load (rolling average for 12 months)

The average is a good long-term indicator. Meanwhile, in the short term...



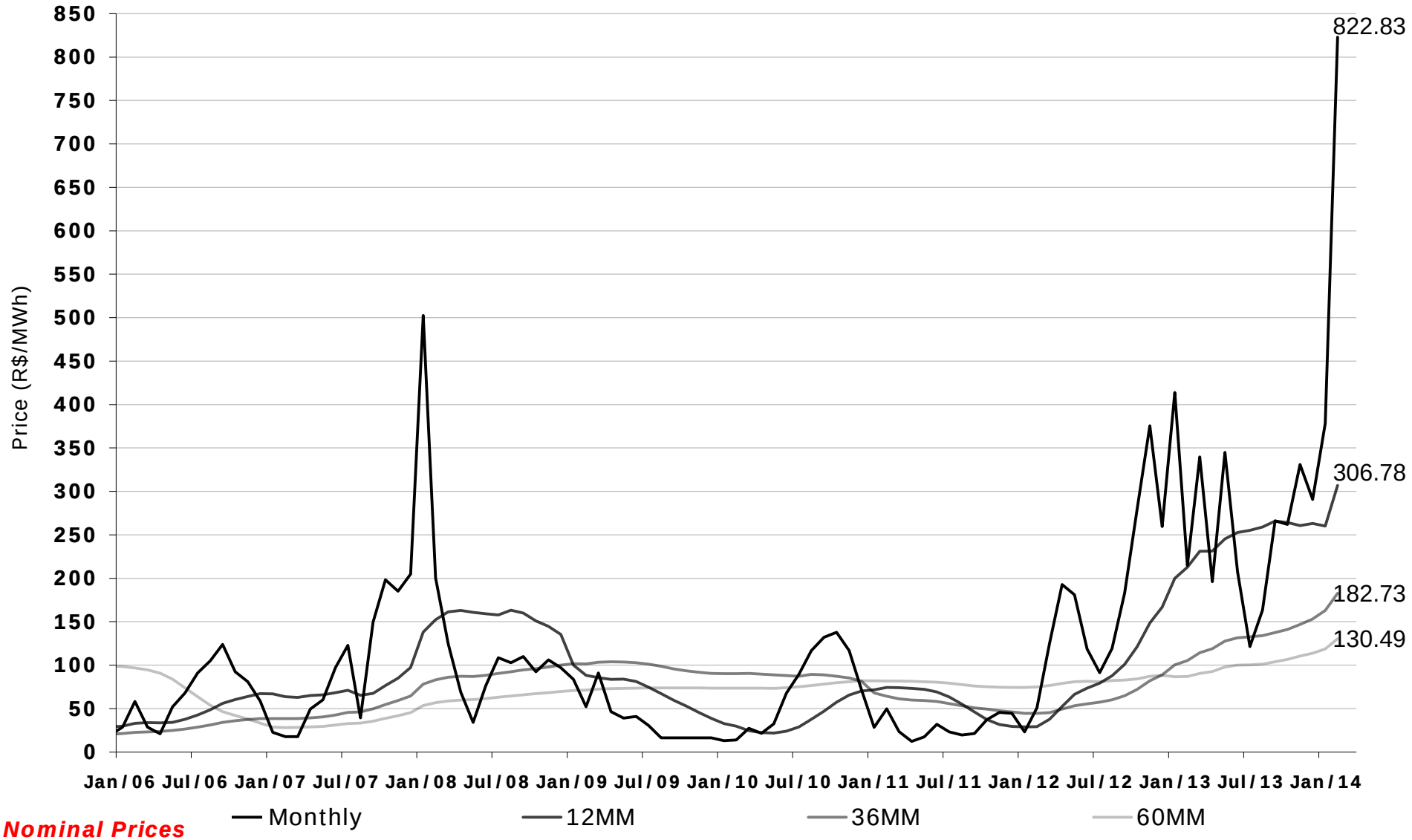
Note: net load
(SIN load discounting energy from small power plants)

High level of thermal deployment since October 2012



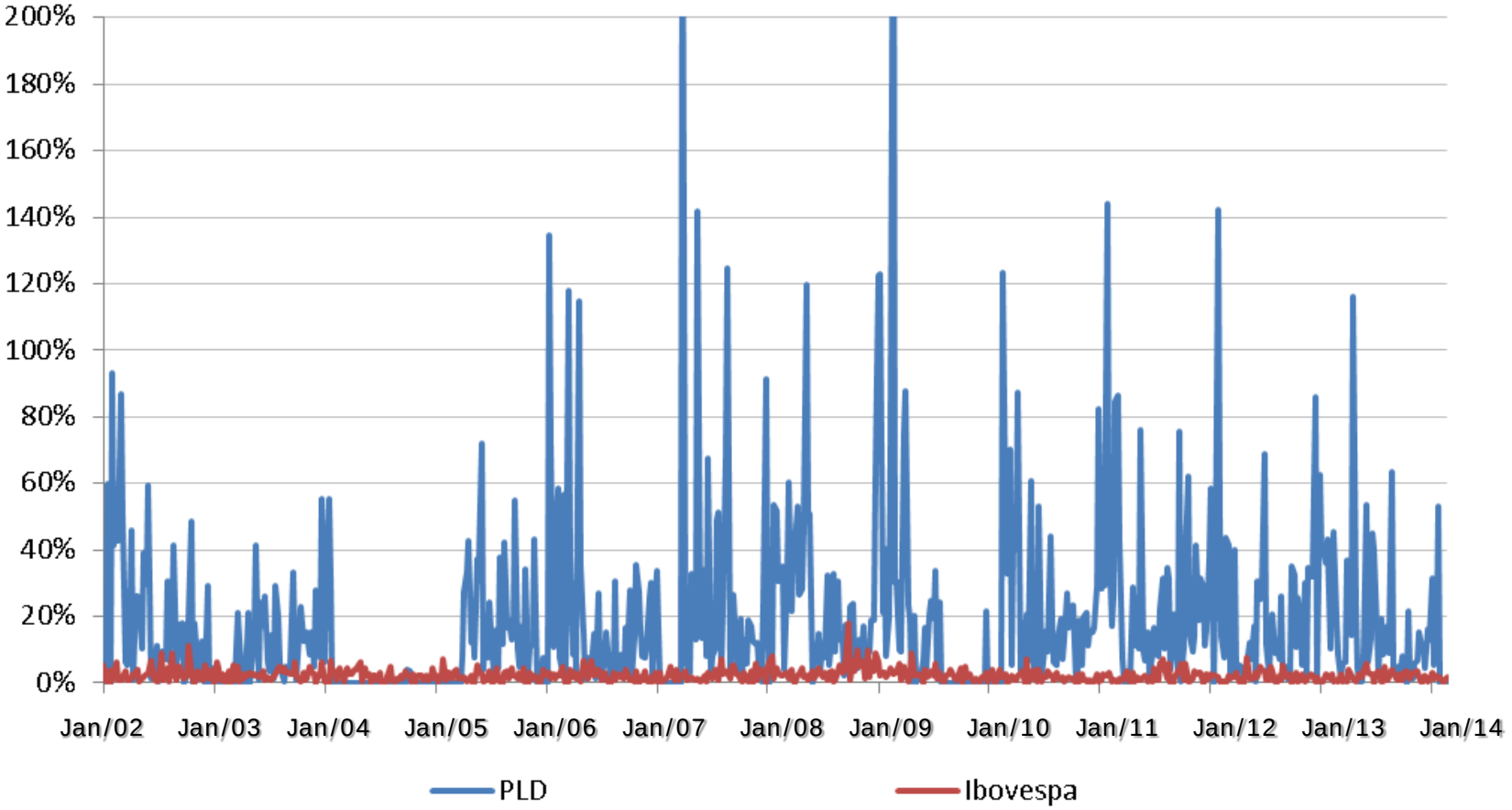
Source: ONS
Gross generation

Spot prices at a new plateau



Nominal Prices

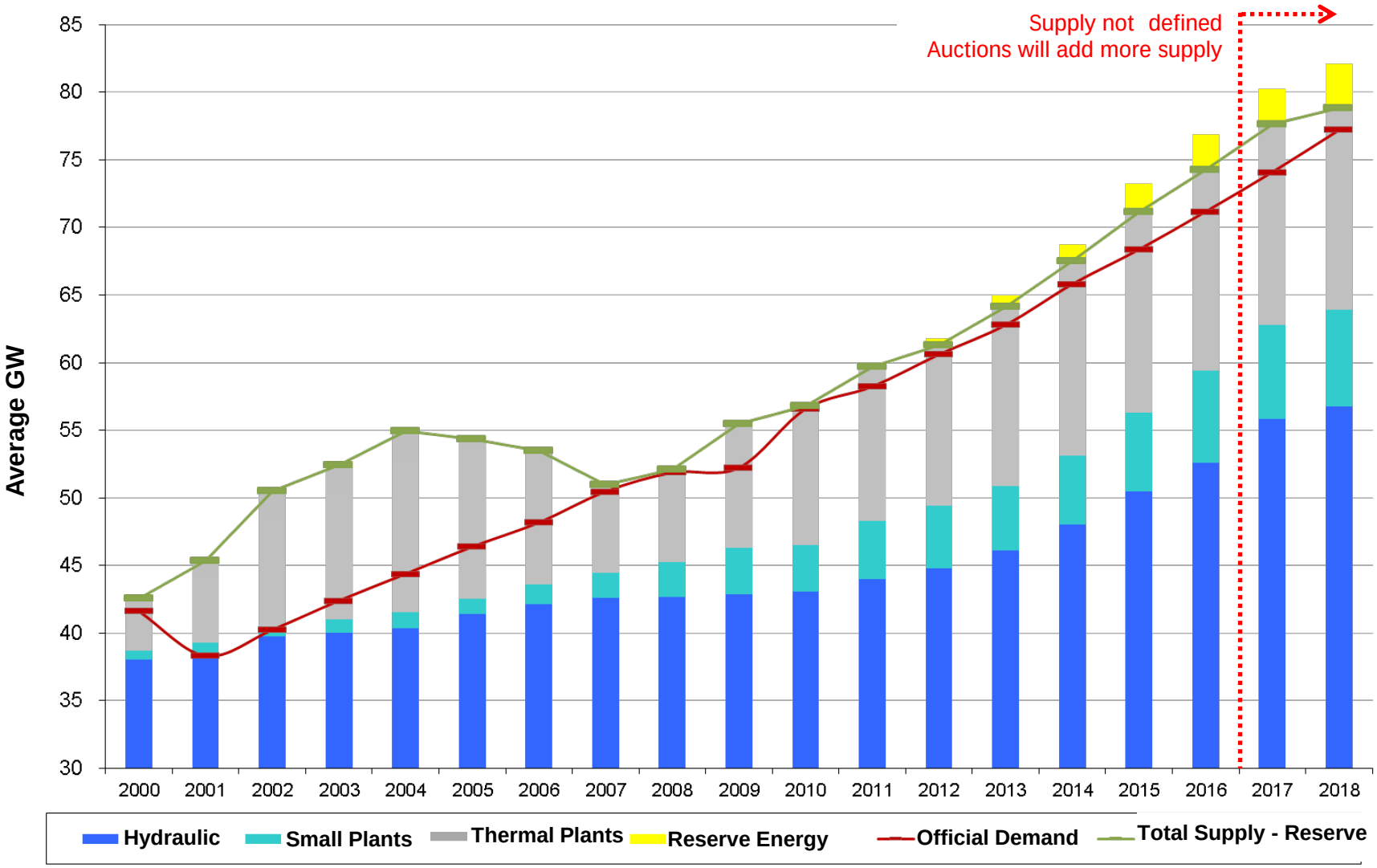
Volatility: PLD & IBOVESPA (2002-2013)



*volatility: weekly variation

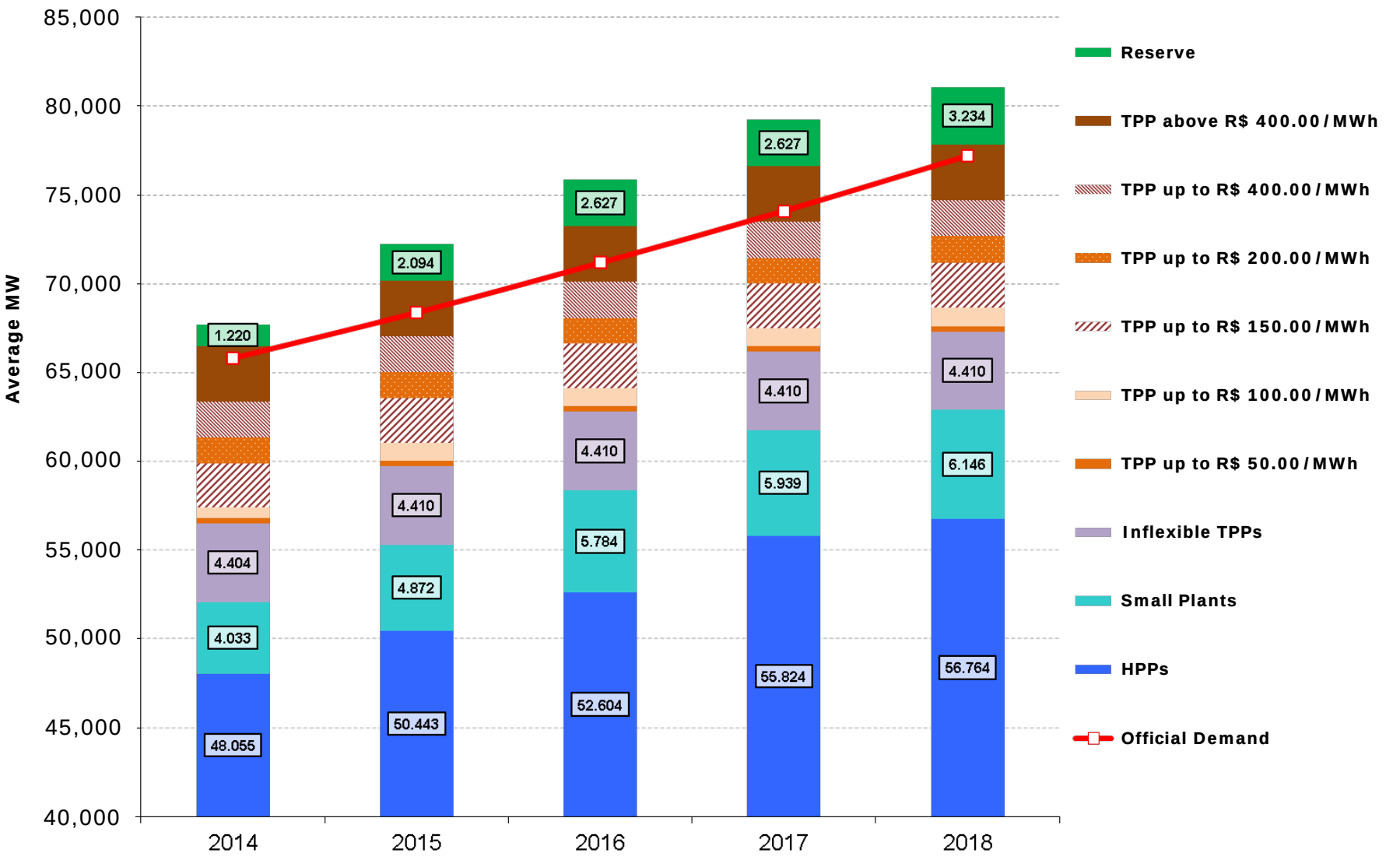
Medium and Long Terms

A balanced system in commercial terms



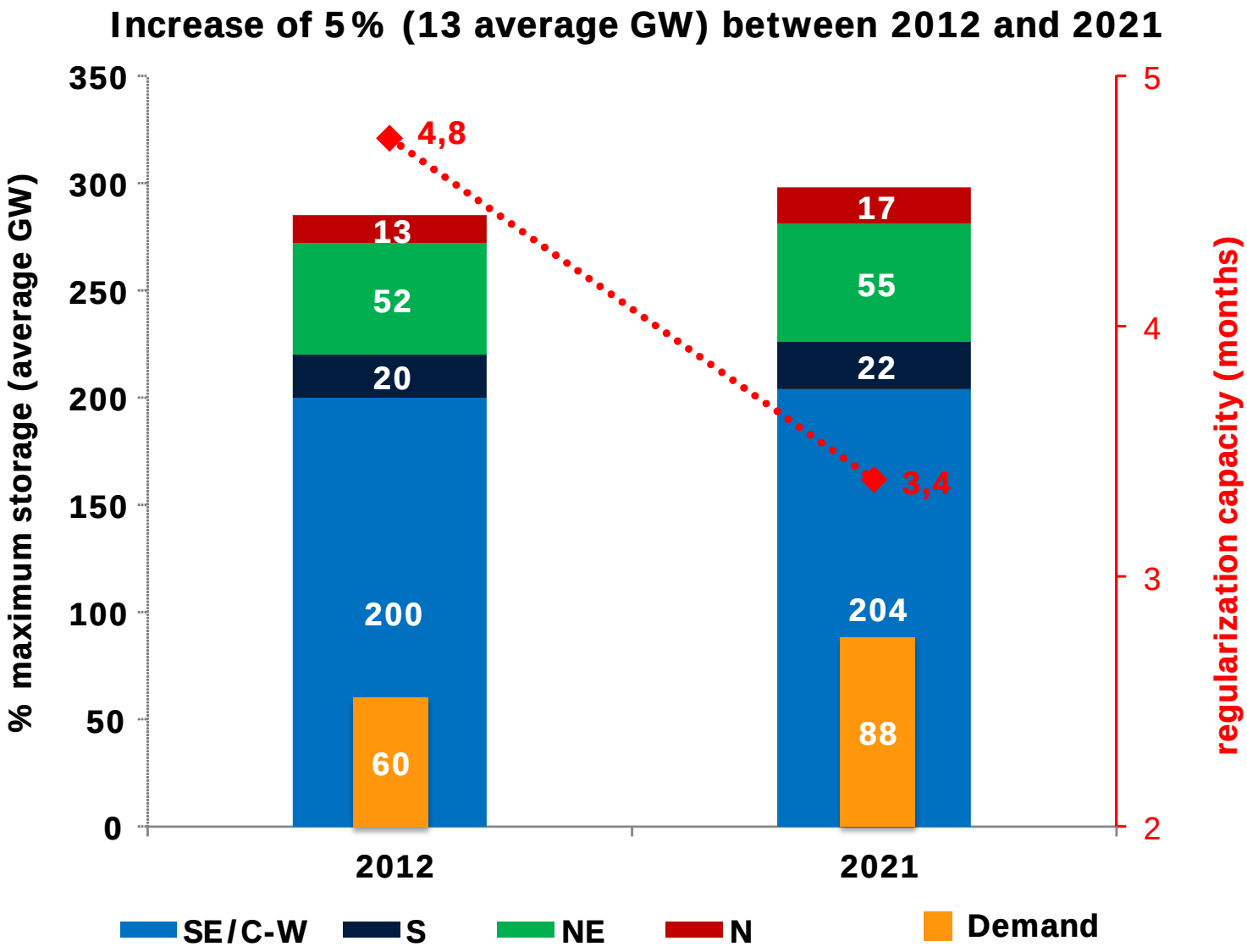
The systemic balance ignores the distributors' contractual situation (short/long), that is their commercial balance.

Thermoelectric plants will be needed to take up the demand



* Does not take into account secondary energy from the hydro plants

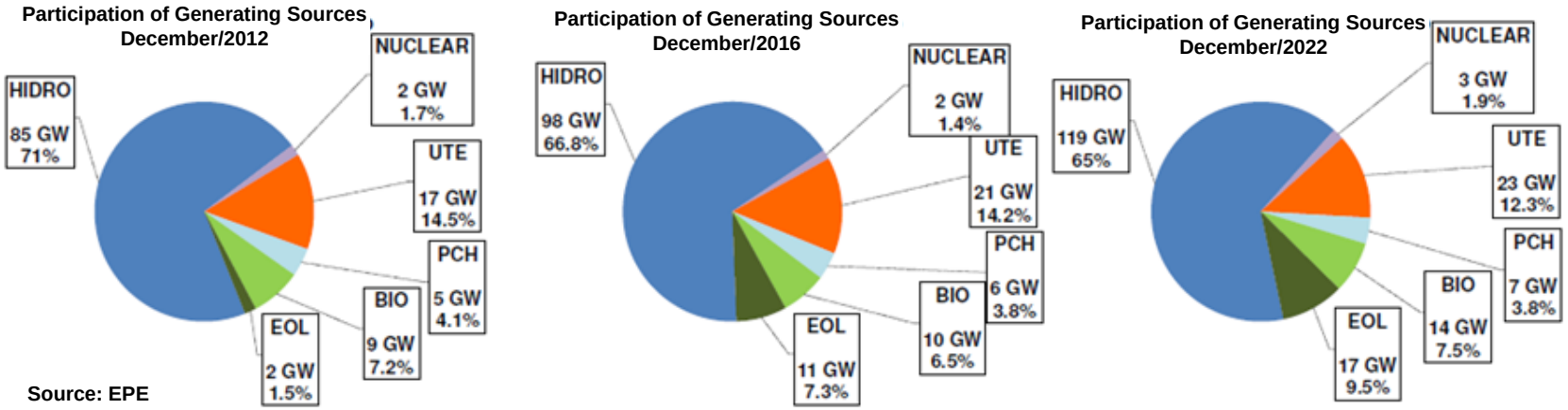
Trend in storage capacity



Source: EPE

Ten- Year Electric Energy Plan

Graph 33 – Trend in installed capacity by generation source

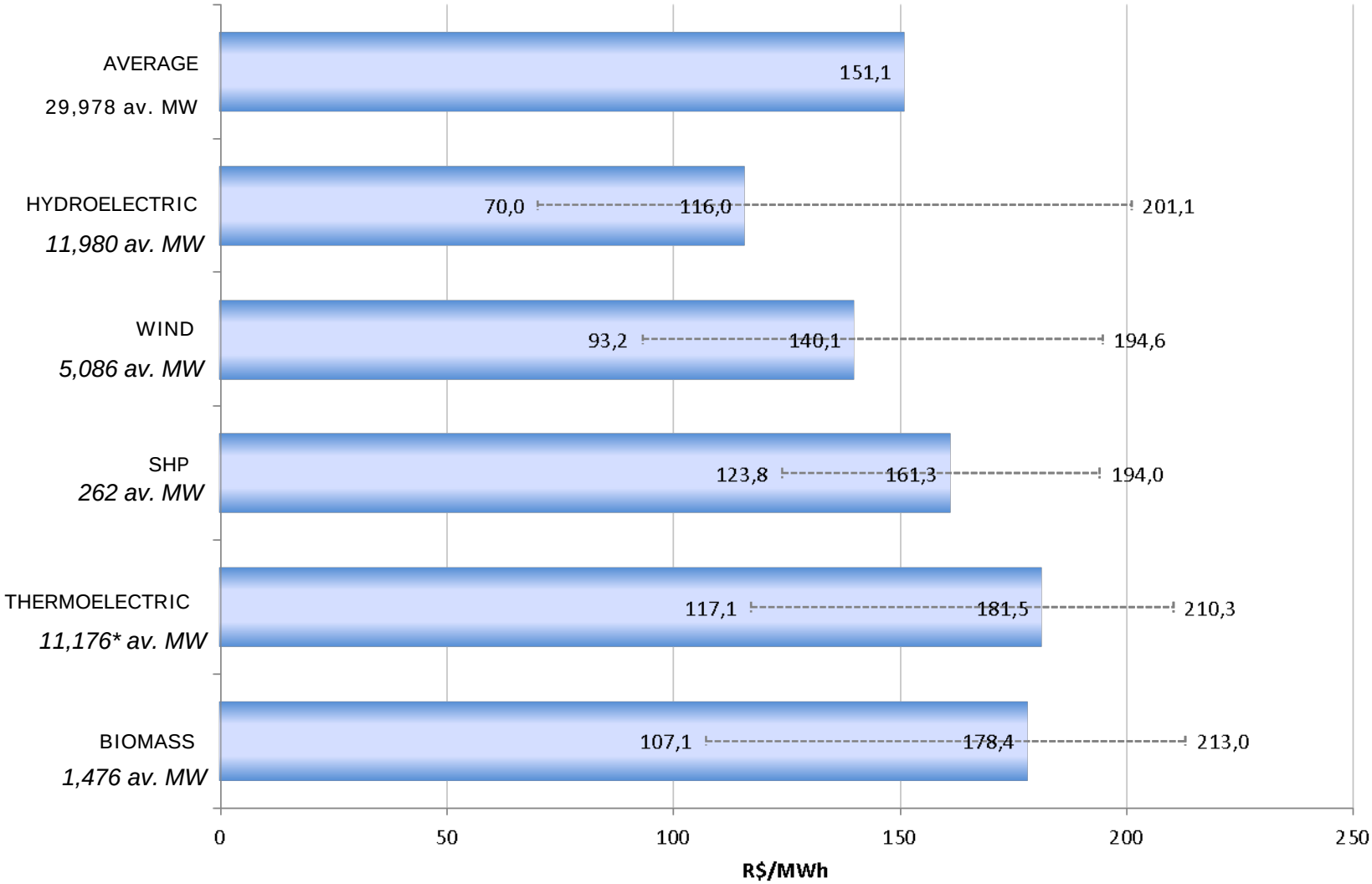


Official Scenario (EPE)

- 52% growth in installed capacity
- Large increase in renewable energy, principally wind
  - Starting from an installed capacity of 16 GW (12.8%) and increasing to 38 GW (20.8%)
- Share of major hydro plants will decline from 71% to 65% (growth of 34 GW)
- New thermoelectric plants: only 700 MW natural gas-fired

Source: EPE

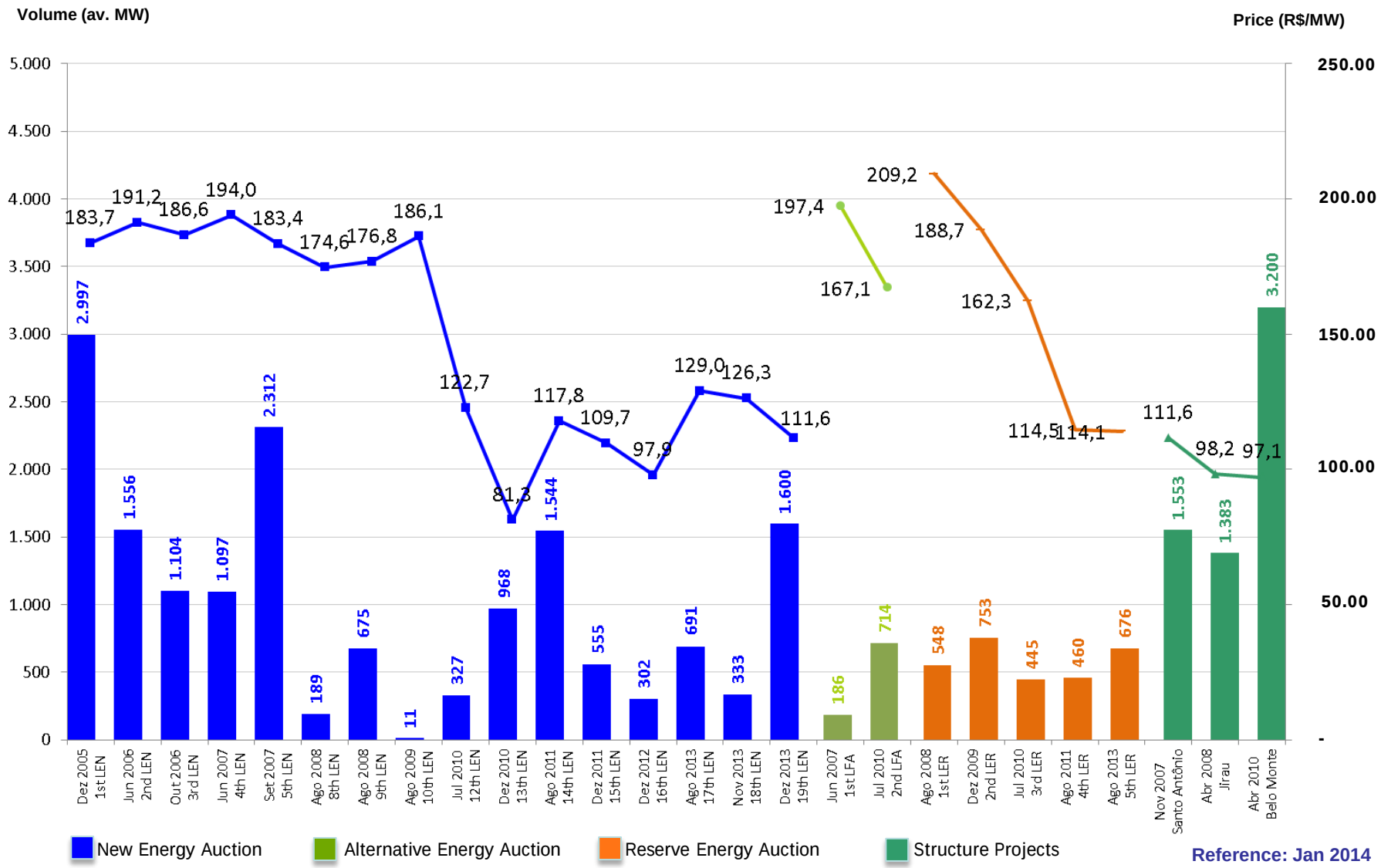
Result of the New Energy Auctions: benchmark for energy prices



* *Includes the 2,631 from cancelled thermoelectrics*

Includes reserve and botox auctions

Summary of auctions



Reference: Jan 2014

Conclusions

- Current Overview
  - Moderate growth in demand, high in the short term (4.0% p.a)
  - Record peak demand (85,707 average MW)
  - Low incoming water (expected to be 26% below average at the end of the rainy season)
  - Elevated thermoelectric generation (currently 15,000 average MW)
  - Record short term prices (ceiling)
  - High cost of avoiding rationing (thermoelectric generation at high base CVU - Unit Variable Cost)
- Structural Overview
  - System's commercial capacity meets demand (surplus from 2% to 3%)
  - Expansion based on run-of-river hydro plants and intermittent sources
  - Higher, volatile short term prices
  - If the current contracting policy is maintained, without the base thermoelectric plants, marginal cost of expansion will be dictated by the wind plants (operating difficulties and greater energy risk)