

Strategic Reserve in Belgium *Design and functioning*

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Strategic Reserve (SR)

- Generation capacity that is being closed, but necessary for security of supply
- SR is a kind of CRM
- SR: least impact on EOM if SR is only activated when markets cannot ensure SoS
- SR in Belgium: keeping generation and demand capacity available during winter (1 November to 31 March)

Legislation

- Law March 23, 2014: adoption of strategic reserve (SR)
- Use of adequacy norms on EU or CWE level, otherwise apply LOLE 50% and 95% of 3hrs and 20 hrs
- Calendar for strategic reserve winter Y/Y+1:
 - July 31, Y-1: notify (temporary) closures before this date
 - November 15, Y-1: probabilistic analysis of volume SR by TSO
 - December 15, Y-1: advice ministry on volume to Minister
 - January 15, Y: ministerial decree on volumes, 1 to 3 years
 - February 15, Y: start of tender for SR
 - April 15, Y: submission of proposals by market actors
 - May 22, Y: report of TSO to regulator and Minister
 - June 26, Y: advice regulator on cost to Minister

(For winter 2014-2015: shorter calendar)

Legislation (2)

- Regulator approves functioning rules, proposed by TSO
- SR: least interference possible with market
- Tender for volume (generation/demand) => prices can be capped by Royal Decree when deemed “clearly unreasonable” by regulator; volumes can be changed
- Costs are paid for by consumers through tariffs

Functioning rules

- Two triggers that can activate SR:
 - Economical trigger (DAM)
 - Technical trigger (intra-day)
- Economical trigger: when shortage on day ahead market => price goes to maximum (3000 €/MWh) and some demand volume is not cleared => SR are sold in second round at 3000 €/MWh
- Technical trigger: after DAM, when TSO assessment of structural shortage => activation of SR
- Some generation units in SR need 5-6 hours start up time => notification up to 6 hours before real time

Functioning rules (2)

- SR: least interference possible with market
 - => so SR not in merit order
 - => imbalance tariff at least 3000 €/MWh
 - But, probability of activated SR when in RT not necessary
 - => imbalance tariff sufficiently higher than 3000 €/MWh
 - ➔ When SR are activated and necessary in real time
 - => imbalance tariff = 4500 €/MWh, for surplus/shortage
- Other advantages of high imbalance tariff:
 - Price signal for shortage (average cost of involuntary load shedding estimated by Federal Planning Bureau: 8300 €/MWh)
 - “Polluter pays”: market actor with imbalance during shortage will pay part of the reservation cost of SR

Market during scarcity/shortage

- CREG study 1352, September 2014: two important roles: BRP and TSO
- BRP: needs to keep its portfolio balanced for each quarter
- TSO:
 - needs to give as much import capacity as possible to the market
 - 3500 MW import capacity in DA: can be more, could be less
 - TSO needs to make intra-day assessment for intra-day import capacity (closer to real time => more information on net positions of bidding zones and on RES)

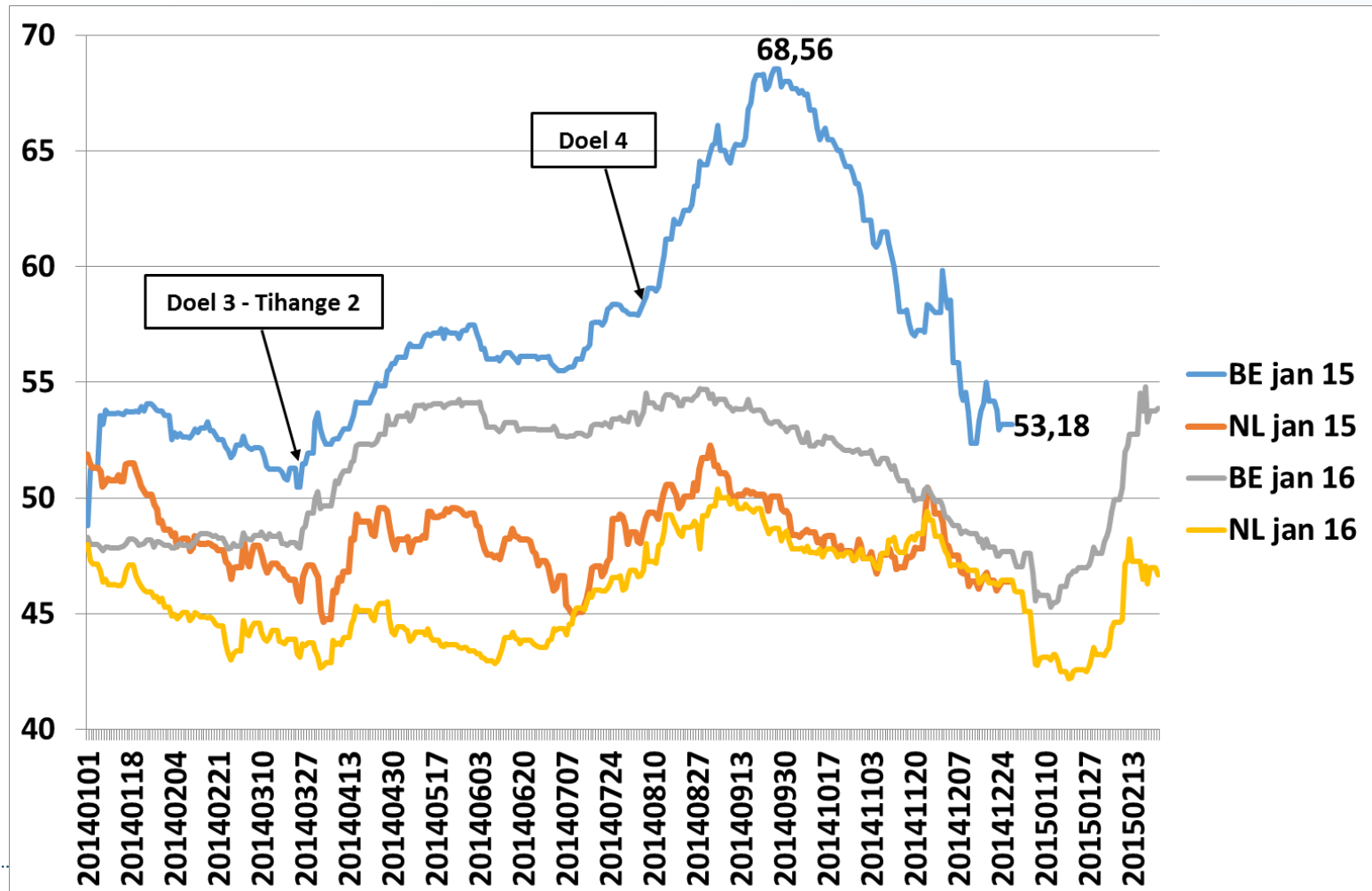
Winter 2014-2015

Some events in chronological order:

- March 20, 2014: TSO analysis of SR with assumption of 3500 MW of import capacity: 0 - 800 MW
- March 26, 2014: unavailability nuclear reactors Doel 3 – Tihange 2 (2000 MW) for safety concerns (still out)
- April 3, 2014: ministerial decree 800 MW SR
- June 3, 2014: new TSO analysis: 1200-2100 MW
- June 5, 2014: functioning rules approved by regulator, after public consultation (with 4500 €/MWh imbalance tariff)
- July 16, 2014: new ministerial decree: 400 MW additional SR (1200 MW in total)
- TSO can only contract 850 MW (750 MW generation, 100 MW demand)
- August 6, 2014: outage of Doel 4 (1000 MW)

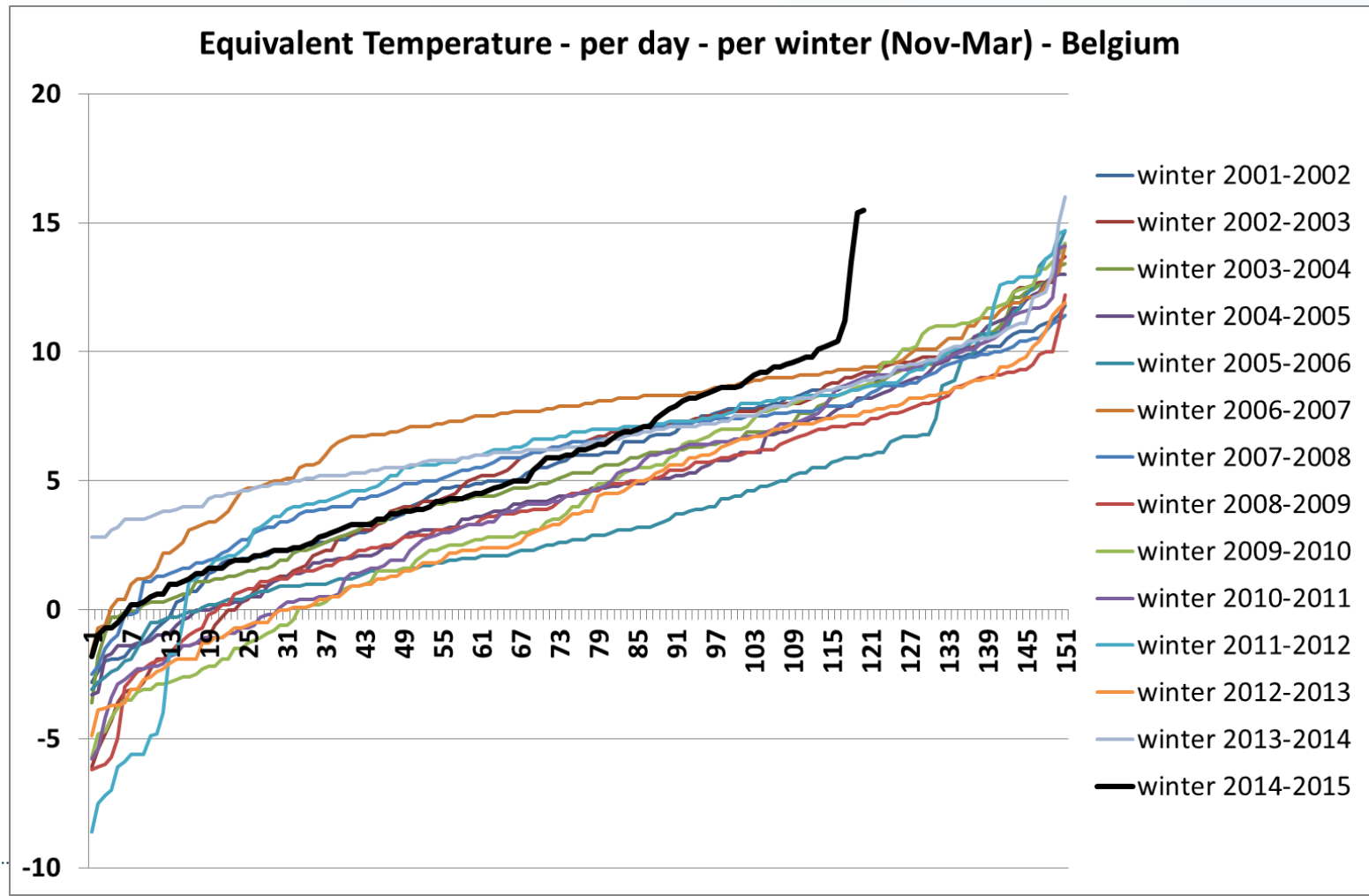
Winter 2014-2015 (2)

- How did market players react? => forward prices



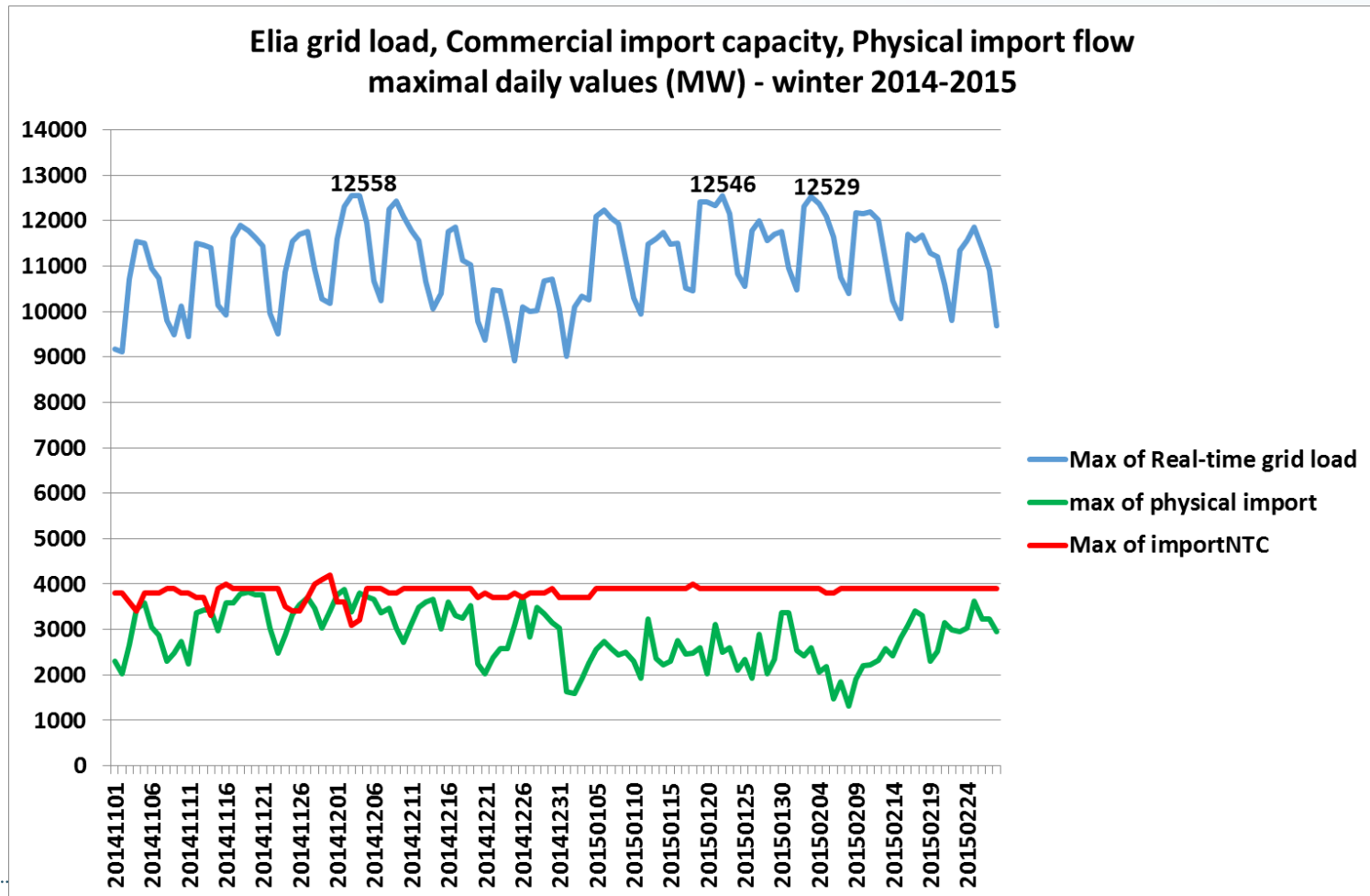
Winter 2014-2015 (3)

- Winter without a cold spell



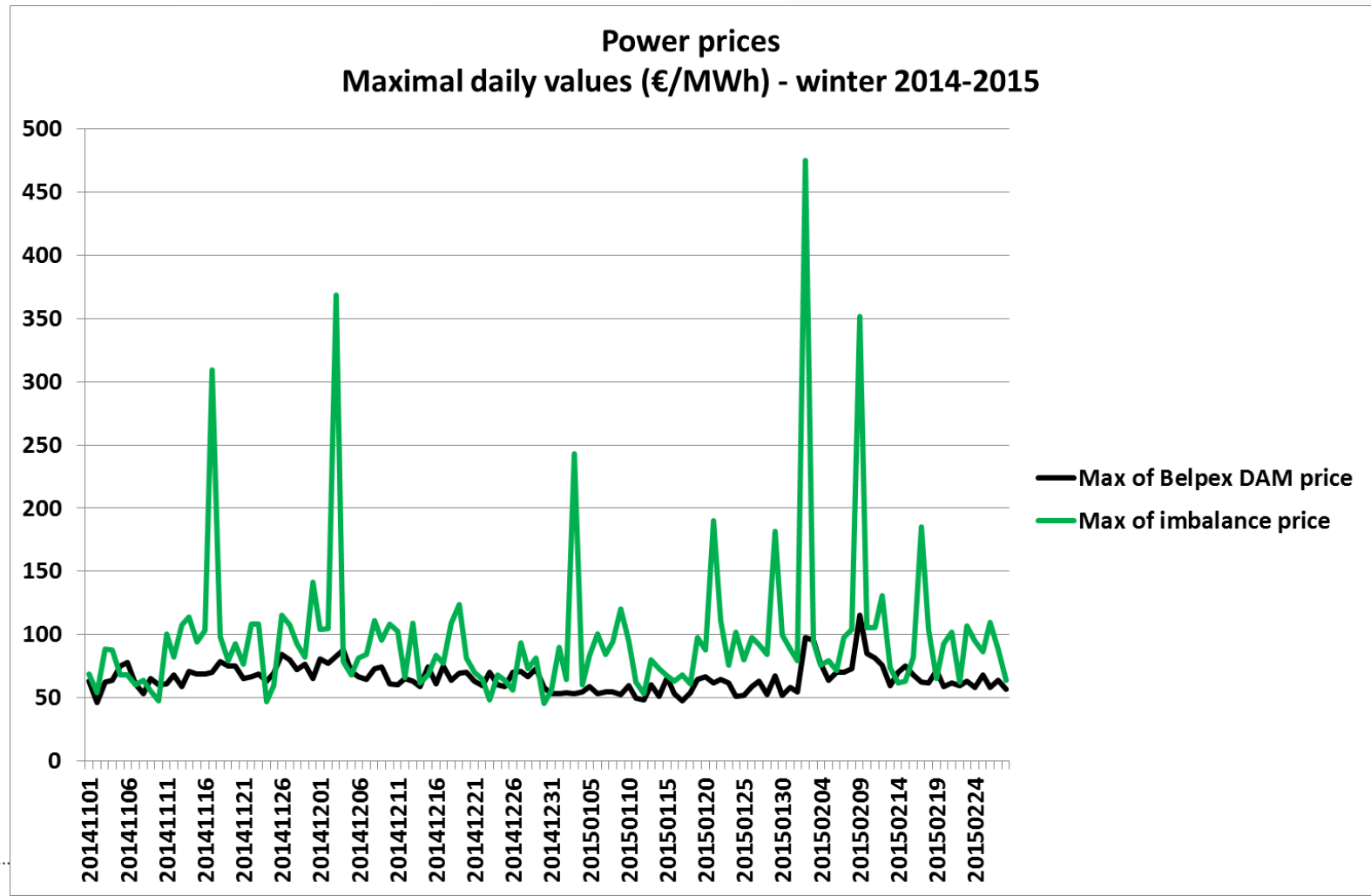
Winter 2014-2015 (4)

- How did the winter play out? => load and imports



Winter 2014-2015 (5)

- How did the winter play out? => DAM and RT prices



Winter 2014-2015 (6)

- Market participants reacted on forward market to possible shortage: winter months up to 68 €/MWh
- Winter without cold spell
- Highest grid load during winter = 12,500 MW
- No activation of SR
- Requested volume by TSO for November-December 2014 was 2200 MW (outage of Doel 4)
- No price spikes on DAM, a few on balancing
- High import capacity: DA on average 3800 MW
- High import flows: on average 2600 MW during Nov-Dec and 1850 MW during Jan-Feb

Winter 2014-2015 (7)

- Conclusion: markets seem to have reacted appropriately
- But: no cold spell => no real test of activation of SR

Winter 2015-2016

- Draft decision on functioning rules: no significant change
- TSO volume assessment next winter: 2700 MW + 800 MW = 3500 MW => ministerial decree followed
- Extra 800 MW because of lower guaranteed import according to TSO (2700 MW instead of 3500 MW)
- Volume assessment of SR is key
- Forward prices for January 2016 are now around 58 €/MWh

Thank you for your attention

Questions ?