

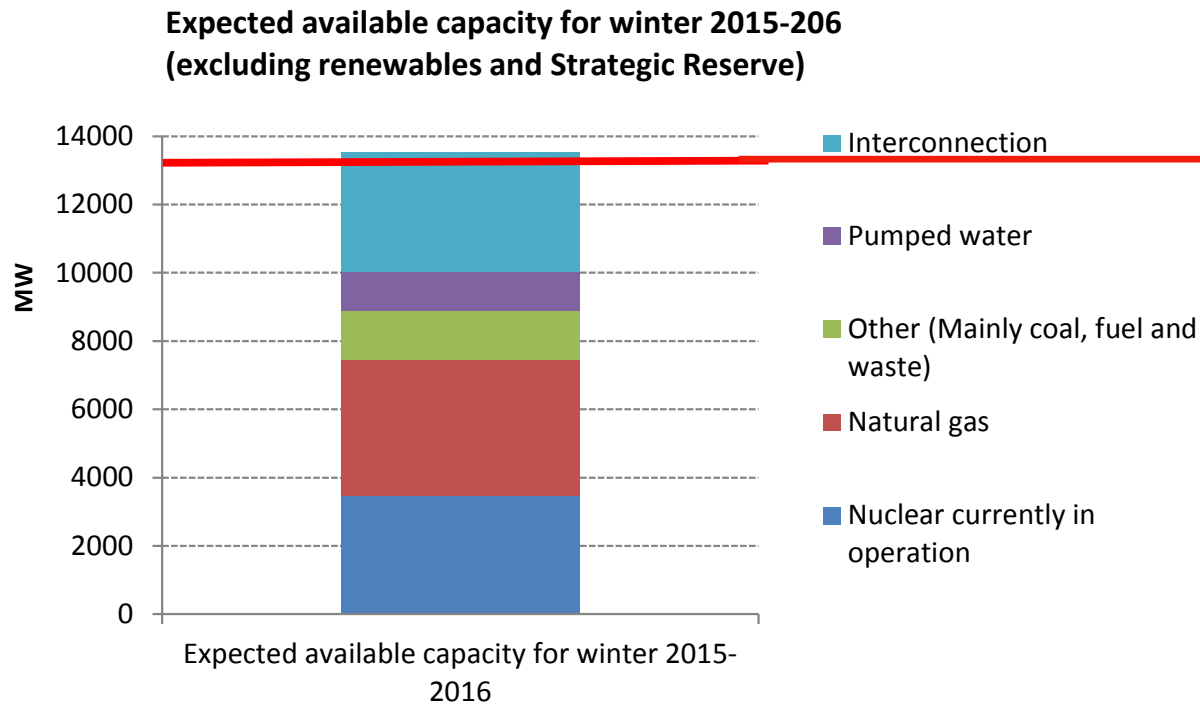
Demand Response Workshop Febeliec

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The logo for e-on, featuring the text "e-on" in a white, lowercase, sans-serif font with a dot over the "e", set against a solid red rectangular background.

Shortage supply risk in Belgium



Peakload consumption was 13.385 MW on the 17th of Jan 2013. This day had an average temperature of -6 °C

Belgium market is at the mercy of import, any incident on the generation side and weather during winter!

1. How worse/better is the situation for next winter compared with previous one?

2. Impact on Strategic Reserve and price?

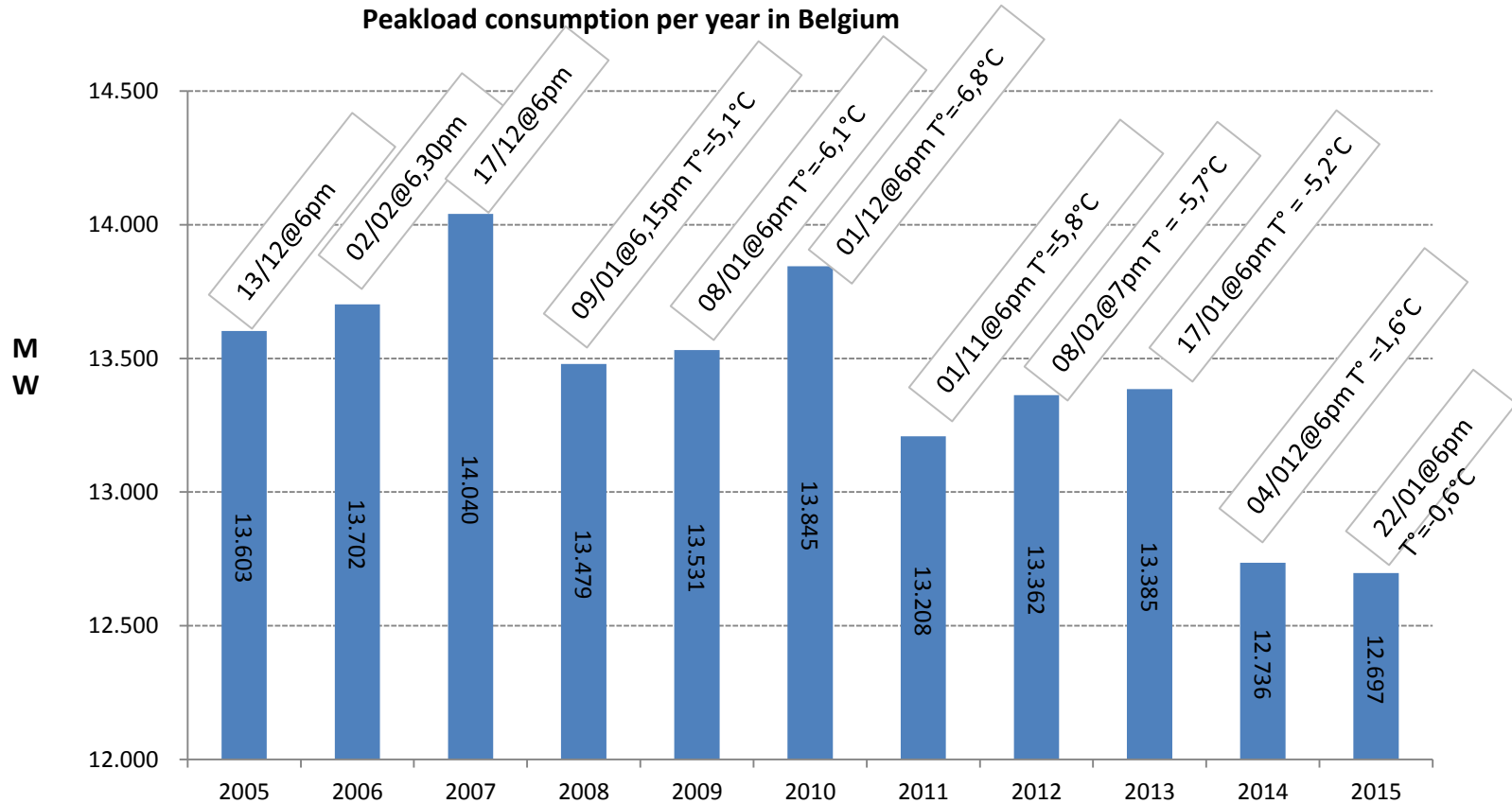
3. Impact on the market?

4. Implications for end user?



1. How worse/how better is the situation for next winter compared to previous one?

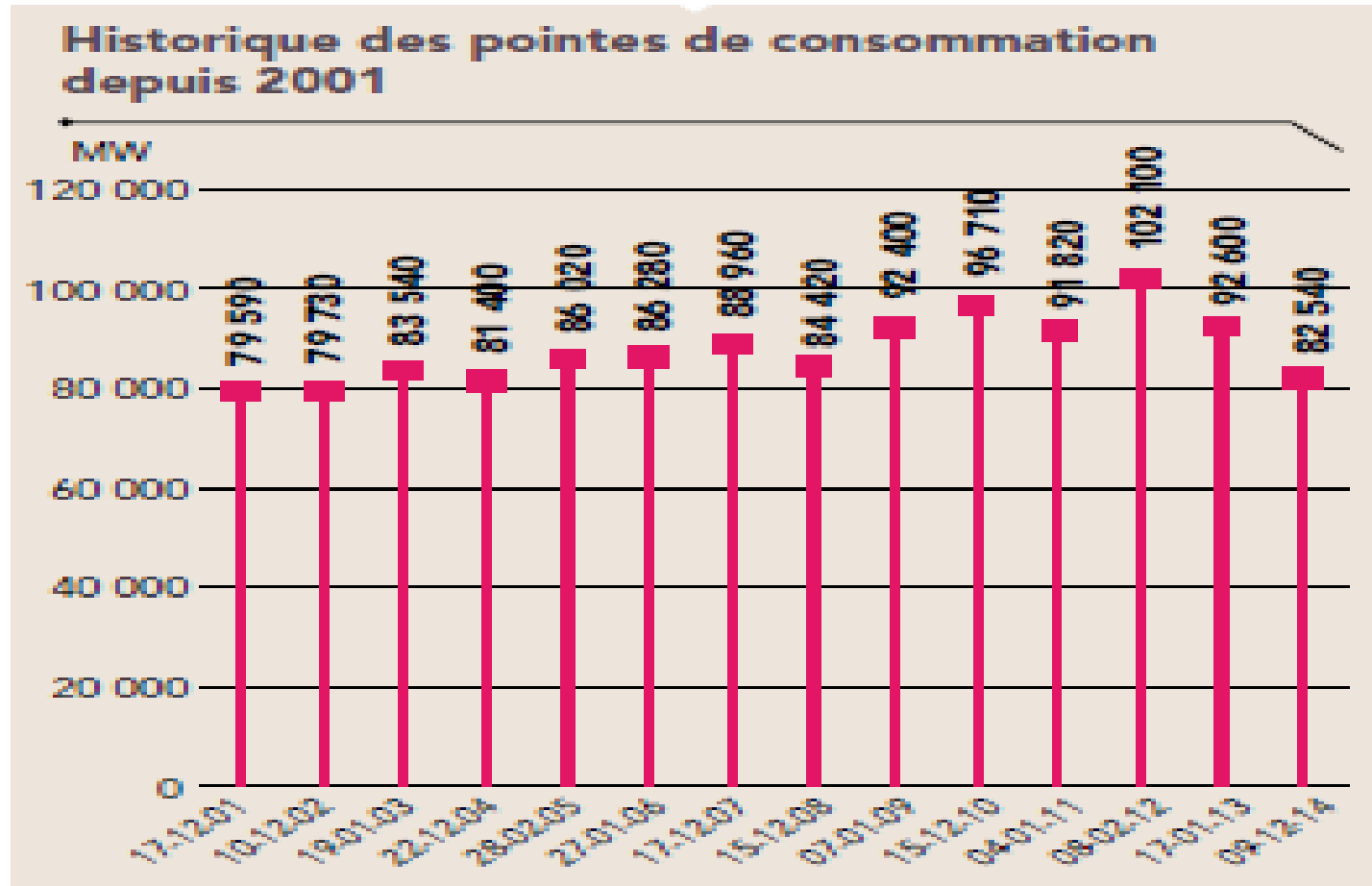
Demand side: last winter's peakload consumption was the lowest in Belgium for 10 years



Last winter was essentially normal in Belgium, with no cold snap



Same holds for France

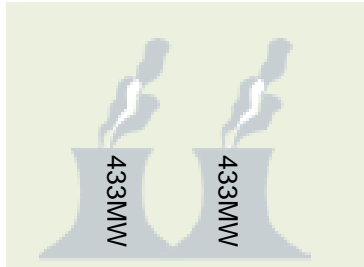


Source: RTE

Last winter's peakload consumption was the lowest in France since 2004!

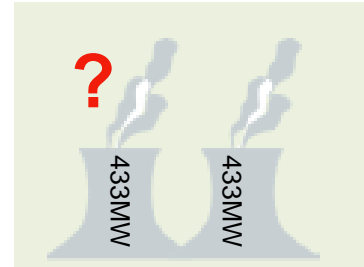
e-on

Supply side: big uncertainty remains on the nuclear reactors

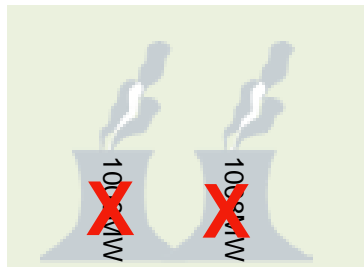


Doel1* + Doel2

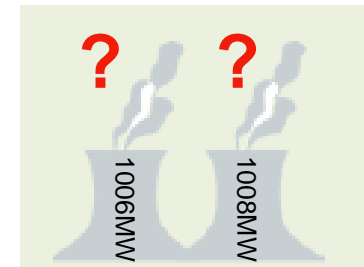
*Until 15/02/2015



Doel1 + Doel2



Doel3 + Tihange2

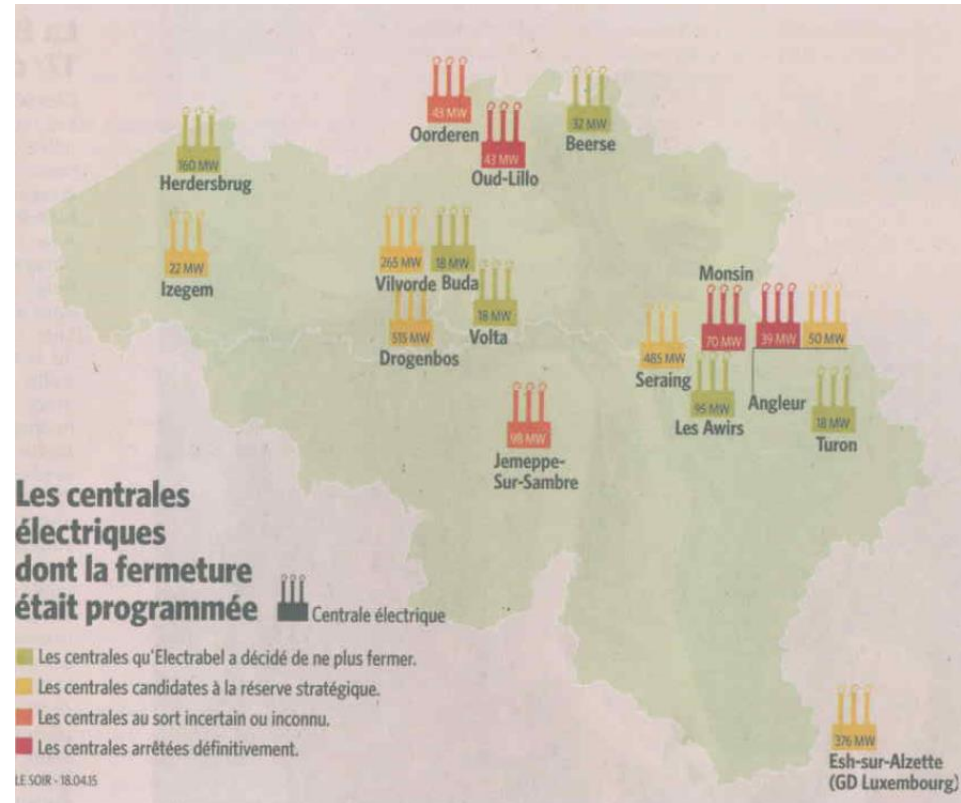


Doel3 + Tihange2



Thermal power plants keep closing

- At least 1000MW of capacity should be lost next winter vs last winter
- Some of it will enter the Strategic Reserve
- No new power plant and interconnection projects are expected in the short run (except renewables)



Depending on the fate of Doel 3 and Tihange 2, the picture could either improve or deteriorate next winter vs winter 2014-2015



2. Impact on Strategic Reserve and price

Huge increase in Strategic Reserve needs for next winter

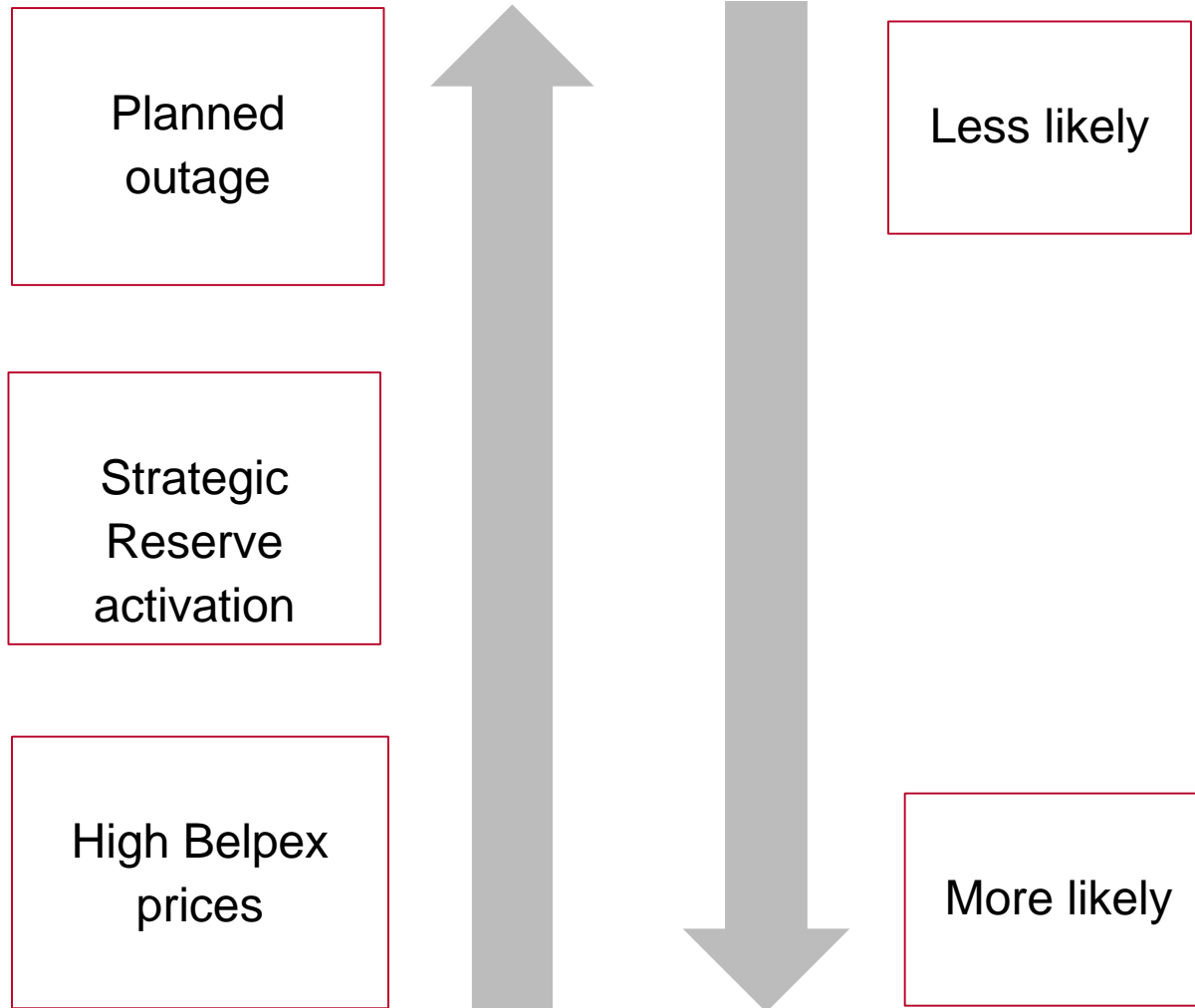
Strategic Reserve	SR 2014-2015	SR 2015-2016
Tendered	1200MW ↓	3500MW
Contracted	850MW	750MW + ?

Targeted volume of 3500MW unlikely to be found

 How bigger the Strategic Reserve, how more likely it is that:

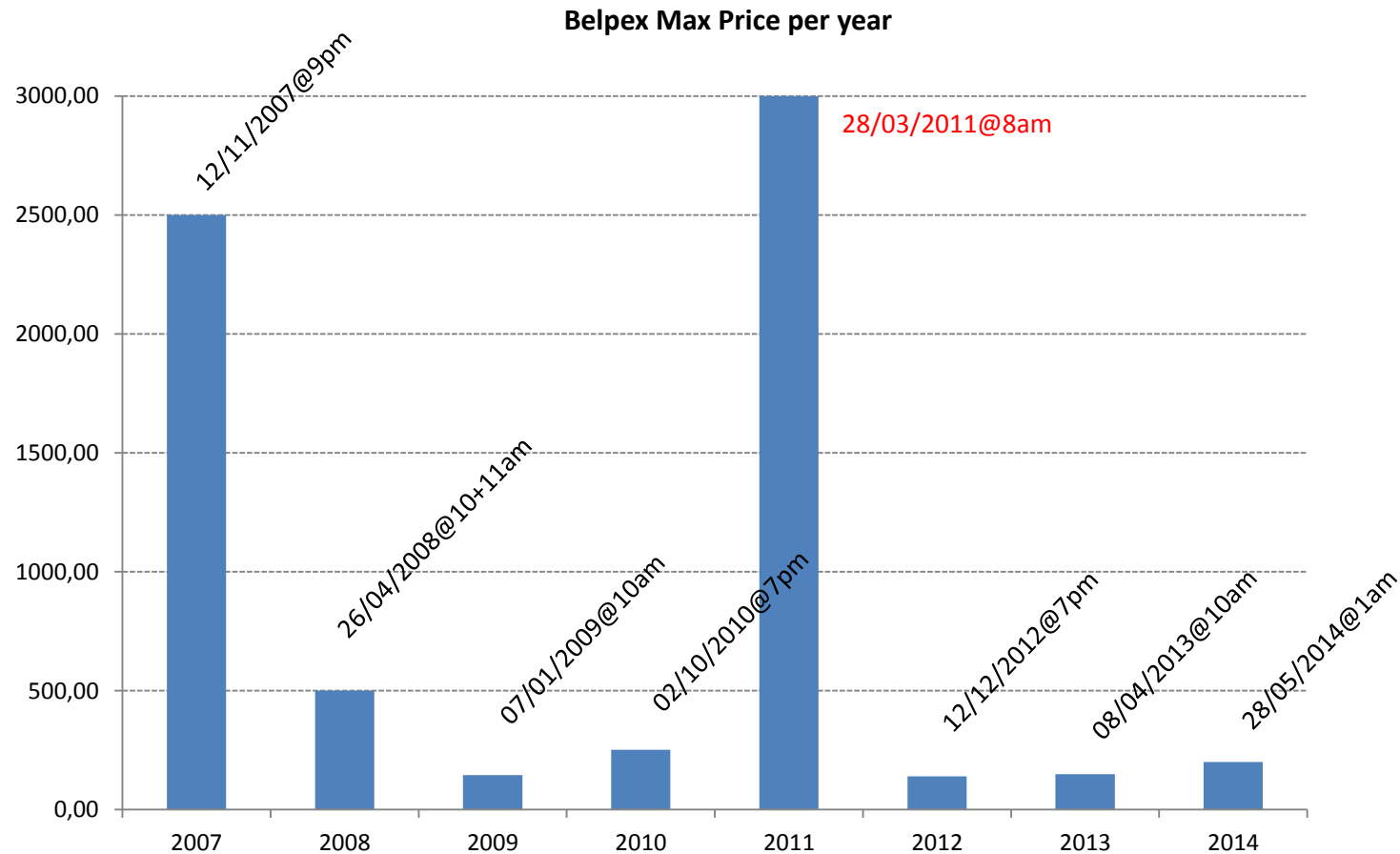
1. Its cost is going to increase  Strategic Reserve fee of ~0.6€/MWh expected to increase
2. It is going to be activated  Activation on **Belpex @3000€/MWh**

Planned outage is a last resort measure!



3. Impact on the market?

We already experienced very high prices on Belpex in the past



- Though not really representative of what could happen next winter
- Common trait still: Belgium decoupled from other markets at that time

Is the Nordic wholesale market during winter 2009-2010 any guide (1)?

- The day-ahead prices were $> 1000\text{€}/\text{MWh}$ on 3 occasions (17/12/ 2009 between 16-18, 08/01/2010 between 7-10 and 22/02/2010 between 7-12 and 17-19)
- Main causes:

1. High peakload consumption due to low temperatures

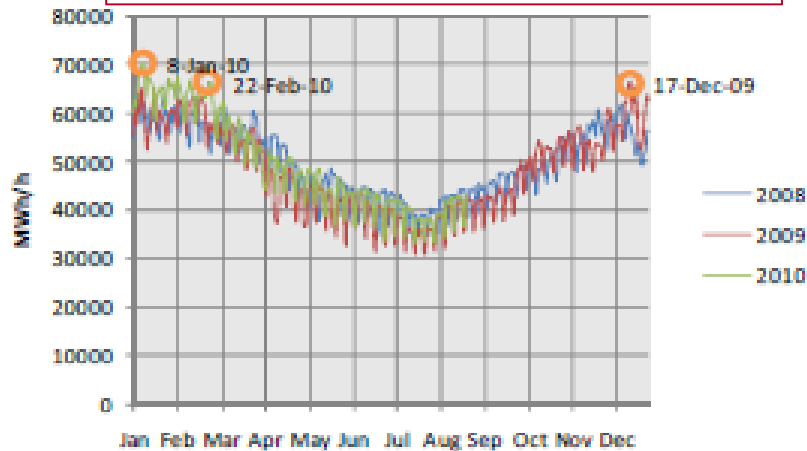


Figure 4. Highest consumption during the day in the Nordic area 2008–2010 with the price dates highlighted.¹¹

2. Low nuclear availability

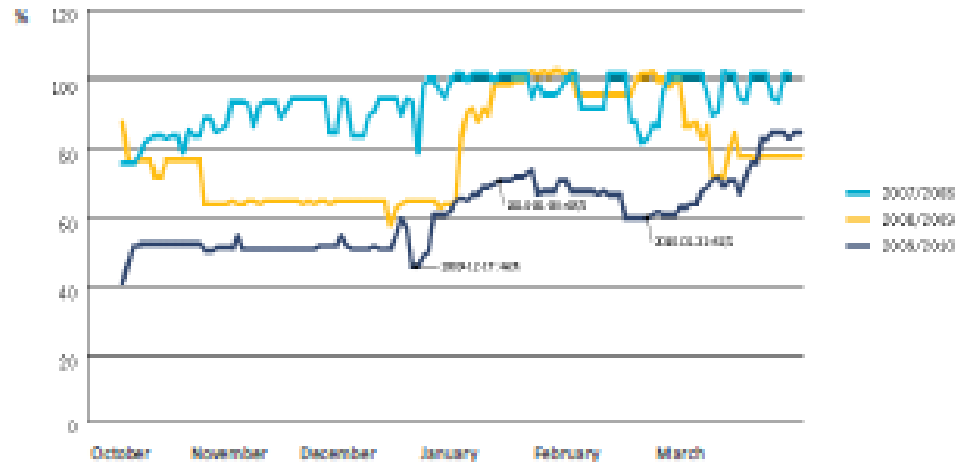


Figure 1. The availability of Swedish nuclear power during winter times 2007–2010.¹²

Is the Nordic wholesale market during winter 2009-2010 any guide (2)?

- Short-term effect: high day-ahead prices followed by downward regulation activation

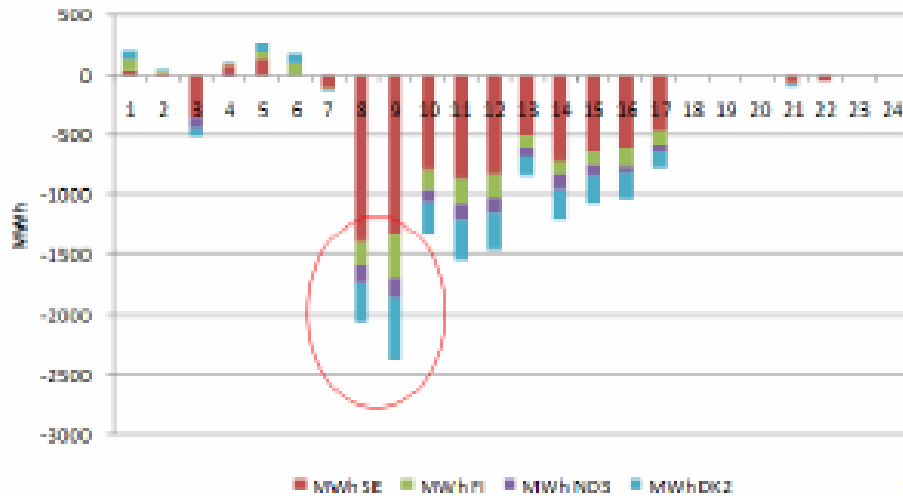


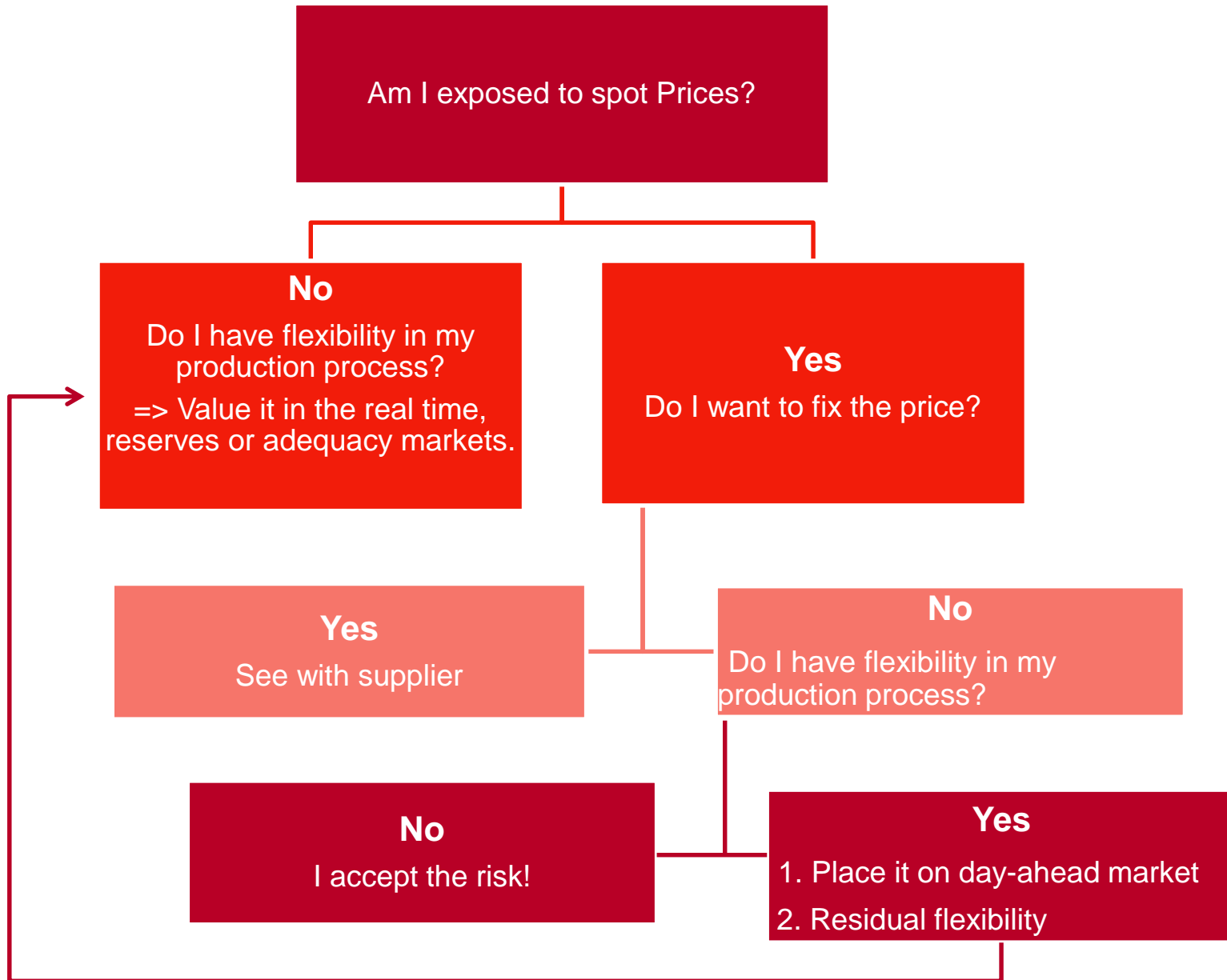
Figure 9. Up and down regulation on 8 January 2010. ²⁶

Fig

- Longer-term effect: Nordic Energy Regulators launched a consultancy study and made several proposals, one of them being: « **Activate demand flexibility in the spot price market** »

4. Implications for end user?

Implications on decision-making for a consumer



E.ON Belgium expects increase of flexibility development on day-ahead market

Protection against high Belpex prices (>< other Demand Side Products)

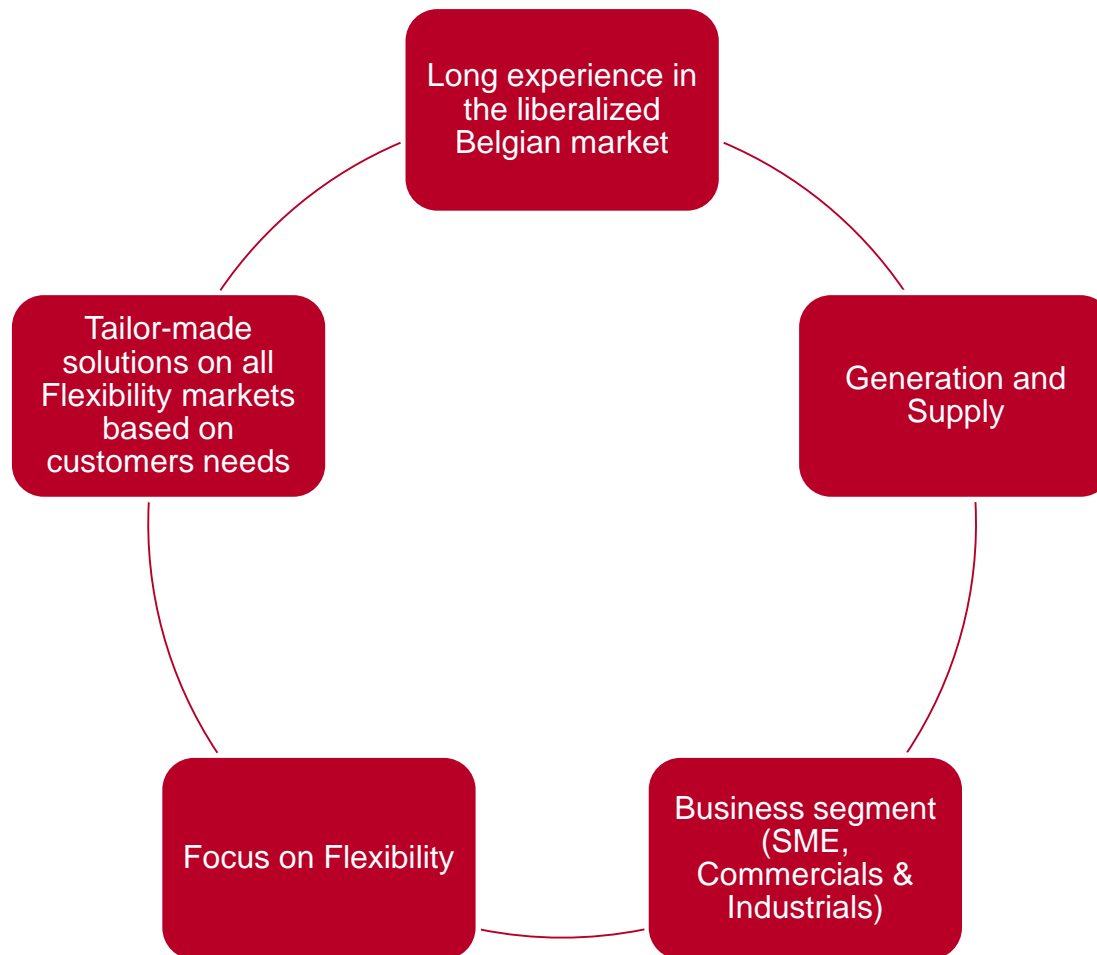
Possibility to capture lower spot prices (vs forward ones)

Long reaction time (day ahead >< a few hours/minutes for other Demand Side Products)

Turning a risk into an opportunity

Increase liquidity of market => most cost effective

E.ON Belgium: your partner of choice for implementing Flexibility strategies



Conclusion

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- The return of nuclear reactors (mainly Doel 3 and Tihange 2) is key for security of supply and prices
- High day-ahead prices are possible next winter(s) if Belgium decouples from other markets. In case of Strategic Reserve activation, day-ahead prices will most probably be 3000€/MWh
- Flexibility/market to play an increasing role in the future
- Flexibility can help you hedge against this high price risk or even profit from it
- E.ON can assist and provide you demand-side products

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