



Intermediate winter 2012-2013 review

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Introduction

**Since summer 2012 until at least end of March 2013:
Forced Outage of NPP Doel 3 and Tihange 2 (~2000 MW)**

- Assessment of impact before winter**
- Mitigating actions in order to control the risks**
- Review of winter period and impact on Security of Supply**

Actions undertaken by Elia to mitigate the risks

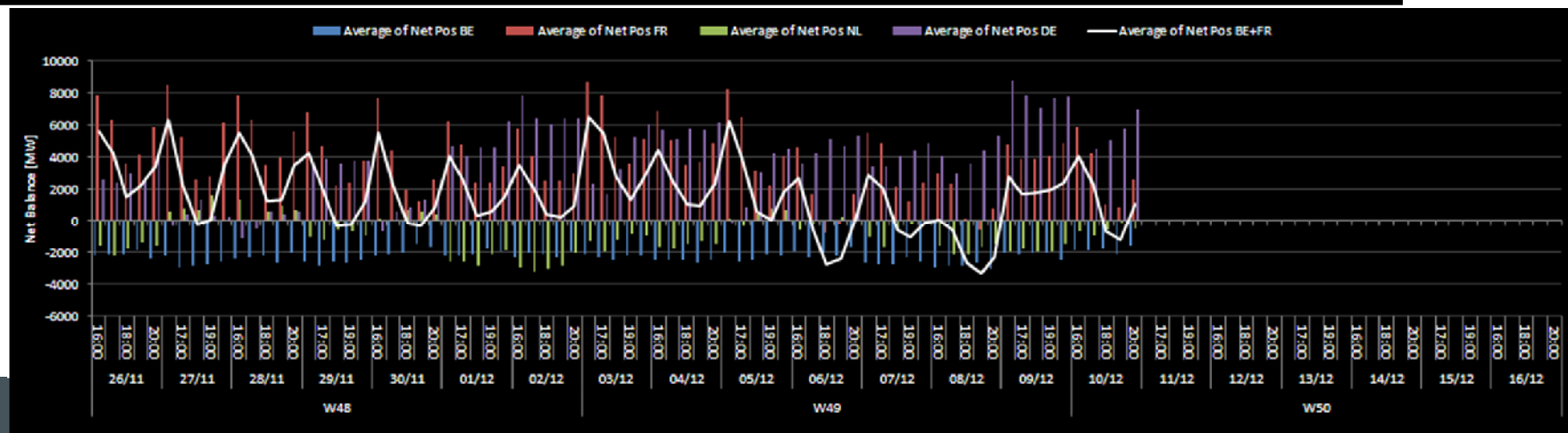
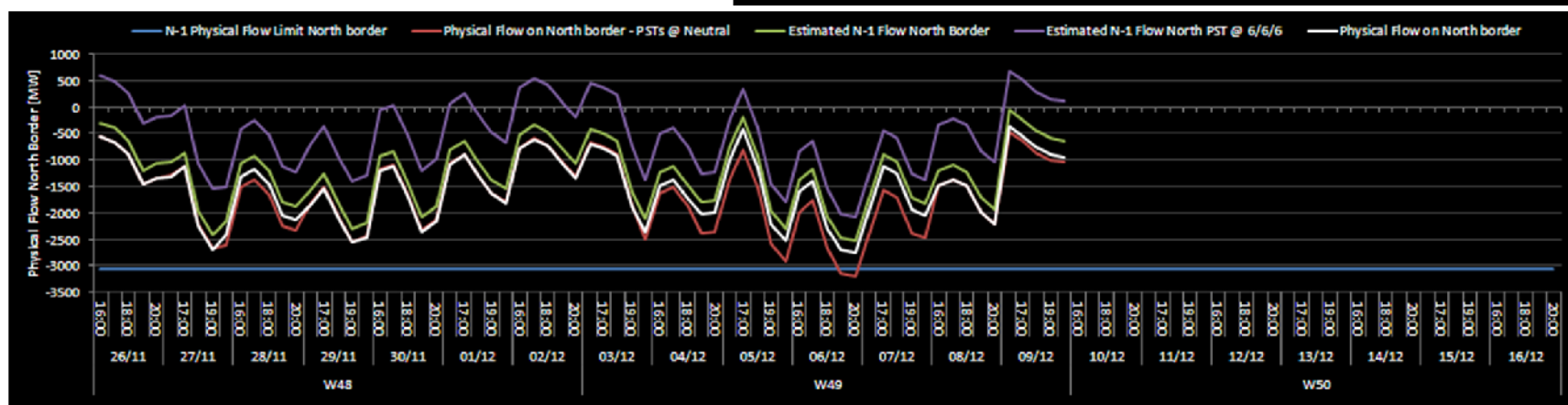


- **Information & communication** to market parties and policy makers → risk awareness;
- Fine tune **procedures & processes in case of energy shortage** with authorities and DSO's;
- Maximize 380 & 220 kV **grid availability and generation** during the winter period
- Increase the volume of contracted **interruptible (industrial)** load during this winter period;
- Agreements with TenneT (Dutch TSO):
 - **increase commercial capacity** (day ahead and intra-day) on the Belgian-Dutch border with a maximum of (non-guaranteed after positive security assessment) 300 MW;
 - contract for R3 **pooling and emergency exchange** of 300 MW;
- Operational **risk indicators** (see next slide)
- “warning light” indicator on **Elia website** (see next slide)
- **Coordination with CWE TSO's & Coreso** to assess risks and possible remedial actions

Monitoring of the risk example

D0 D-7 dashboard

		12/50	12/50	12/50	12/50	12/50	12/50	12/50	
		D	D+1	D+2	D+3	D+4	D+5	D+6	D+7
		10/12/2012	11/12/2012	12/12/2012	13/12/2012	14/12/2012	15/12/2012	16/12/2012	17/12/2012
1	Temperature								
2	Remaining margin with current imports								
3	Remaining margin with max imports								
4	Remaining margin with no imports								
Eq. Temperature		3.08	0.64	-0.93	-1.47	2.14	4.96	6.39	6.41
Peak load (MW)		12412	12865	12955	12472	12150	10691	10090	11612
Import @ Peak load		-1740	-1740	-1740	-1740	-1740	-1740	-1740	-1740
SCARCITY INDICATOR		Level 1	Level 1	Level 1	Level 1	Level 0	Level 0	Level 0	Level 0



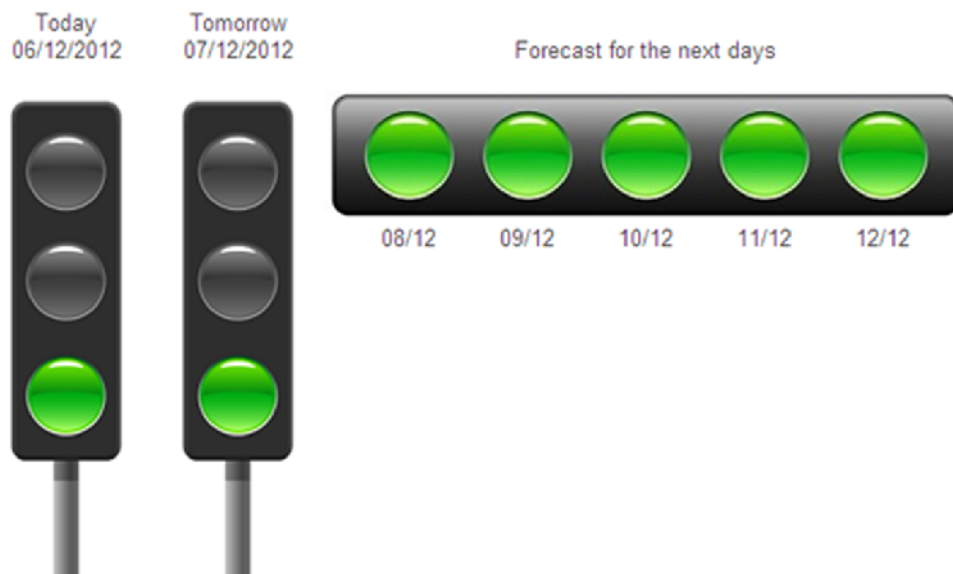
Communication

Elia web site



BALANCE BETWEEN ELECTRICITY OFFER AND DEMAND IN BELGIUM

Elia keeps you up-to-date on the balance between electricity offer and demand this winter.



Ready for winter

[more info](#)



-  Offer and demand are in balance
-  Increased risk of electricity shortages
Take action! Citizens, businesses and institutions are encouraged to voluntarily reduce their electricity consumption at peak times (between 6 p.m. and 8 p.m.), so we can all help to ensure that extreme measures (such as power shut-offs) are not needed.
-  Electricity shortages
There is a shortage of electricity! We need to reduce our electricity consumption at peak times. Authorities can also define prohibitive measures for institutions and businesses.
-  Selective load-shedding plan activated
The electricity supply to some electricity consumers is temporarily shut off to prevent a major imbalance.
The federal authorities have notified the local authorities concerned.

Conclusions on risks before start of winter

- Belgium will be structural **dependent upon import**, even in **normal** winter conditions
- In **extreme winter** conditions (e.g. cold spell in Europe in February 2012), **risk on scarcity exist** and could lead to demand limitation/prohibition measures and in extreme situation to load shedding.
- **3500 MW import capacity** available **BUT Market players** have to buy energy on (international) market

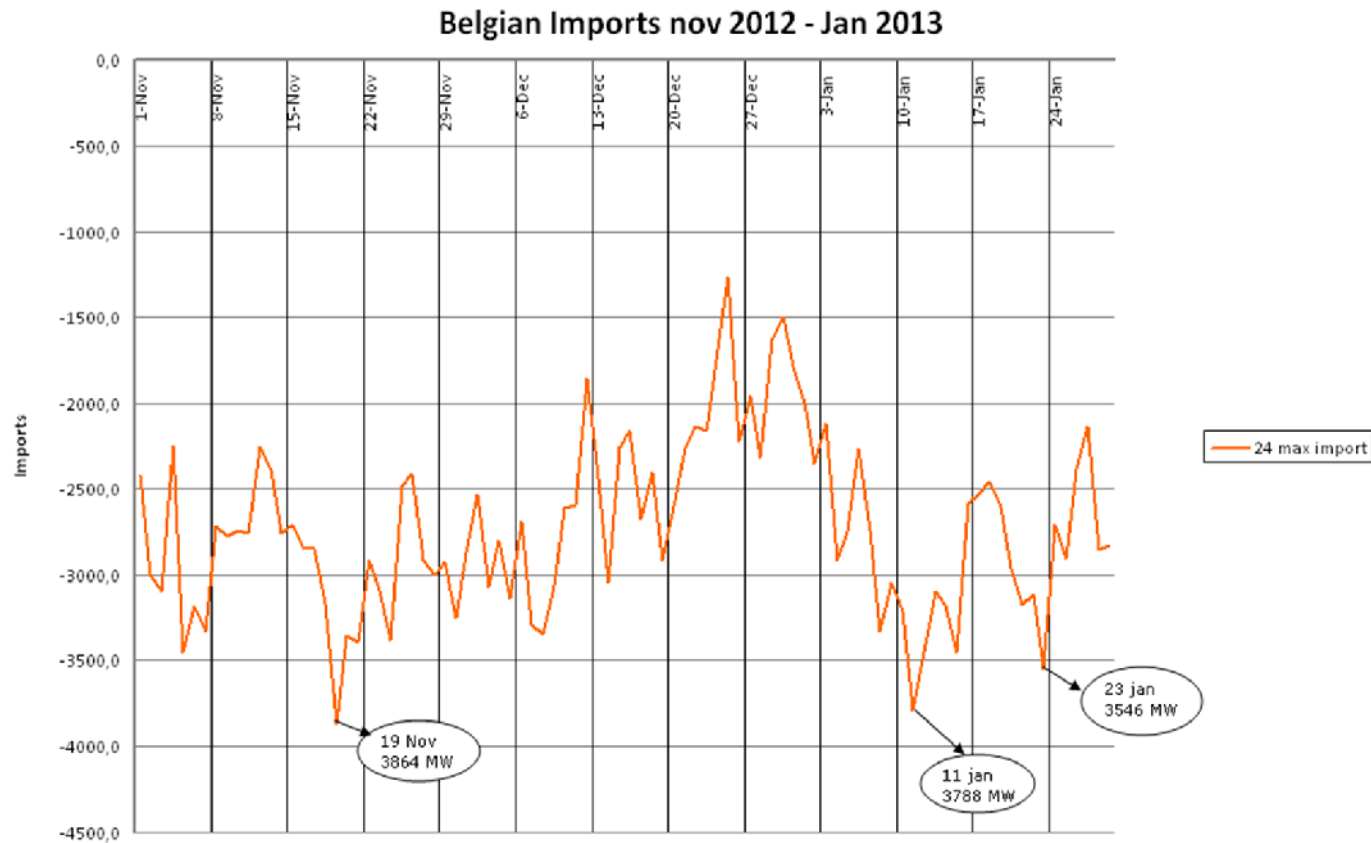
ENTSO-E winter outlook 2012-2013 (November 30th 2012)

- confirmed the import dependency of Belgium and
- concluded that, in case of low temperatures in Europe especially in France, this could lead to non-manageable flows on Elia grid or risks of scarcity.

Review of the winter and impact on SoS

Belgian (physical) import:

November 1st – end of Jan (max. MW of the day)



- If > 3500 MW: accepted case by case, only after security check by experts.
- 29 days > 3000 MW import; partly for economic reasons (e.g. 19/11/2012 max. 3864 MW).

End 2012, up to 15 January 2013

Until end of 2012:

Mild winter; some problems of incompressibility (lack of flexibility) during the holiday period (Christmas - New Year). The control area was occasionally “too long”.

Friday 11 January 2013 : A 24h **forced outage** of an another large NPP raised the total level of imports to **3788 MW** (intraday).

Security evaluation in case of longer delay:

- France $> 0^{\circ}\text{C}$ → exporting, so Belgium could import from N and S.
- French peak load ~90 GW compared to 102 GW during cold spell February 2012
- If all available Belgian units would have been used, this would lead to max. imports of 3600 MW (which was acceptable) but no more margins left in case of another FO.
- Close follow up of repair + ready for new analysis during weekend

→ **manageable**

Cold spell 16-25 January

In general



Day time temperatures

- $< 0^{\circ}\text{C}$ in Belgium
- Cold in NL, B, D, but only half France

France (2300 MW/ $^{\circ}\text{C}$)

- Maximum load 92 GW compared to 102 GW record value Feb. 2012
- High generation availability
- Mostly exporting; only importing on 17 January

Belgium

- High generation availability (of course except D3 & T2)
- Possibility to import energy from both North and South → no specific problems or risks for SOS are encountered.
- Margins after a possible forced outage (N-1) are reduced to zero.
- Most critical day up till now was January 17th (next slide)

Cold spell 16-25 January: focus on 17 January

Load Elia grid ~13.2 GW

Import on January 15th: **3450 MW**

January 17th:

- Day-1 Belpex **180 EUR/MWh** @ evening peak → start up of additional available conventional generation in B.
- **France** changed from export to **import** (2700 MW) at evening peak
- **Unplanned outages (total ~1000 MW)** before evening peak:

→ Elia activated all reserves:

- Use of all free bids
- Activation aggregator REstore
- Contractual Industrial Interruptables, included additional “winter”
- R3 reserve units started: 300 MW

→ During evening peak **all margins were exhausted**

→ Intraday trades allowed to free up again margins

Cold wave 16-25 January: week 4

Comparable to previous week 3

- With lower freezing t° during day
- But higher generation availability in Belgium

Max import level on 23 January was **3546 MW**

Relatively low load France (86,3 HW) → import capacity available on both North and South border



Conclusions Nov2012 - Jan2013

- Overall **availability** (except D3&T2) of the **generation** portfolio in Belgium was very high.
- Maximal availability of generation and grid in CWE region
- Such high availability not feasible every year due to limited delay for outages and inspection of units
- Belgium structurally **dependent upon imports**
 - we observed (due to economical reasons) import levels to 3500 MW.
 - 29 days above 3000 MW (25% of winter load)
- **Energy was available** in Europe thanks to **limited winter load** (t° South France 10° C => **10 000 MW less load F**) and high availability of French generation
- **Import- export situation of France** (and hence load in France) is crucial.
 - When France exports, no issues to import 3500 MW in B.
 - When France imports (very cold in whole of France) → non-manageable flows or scarcity is possible.
- During cold spell (e.g. Jan 17th) → **reduced margins**; an additional big incident would have triggered the emergency plan.