

# Winter 2014-2015

## Import capacity in scarcity context

Joint WG BG & SO

2014/10/23

# Agenda

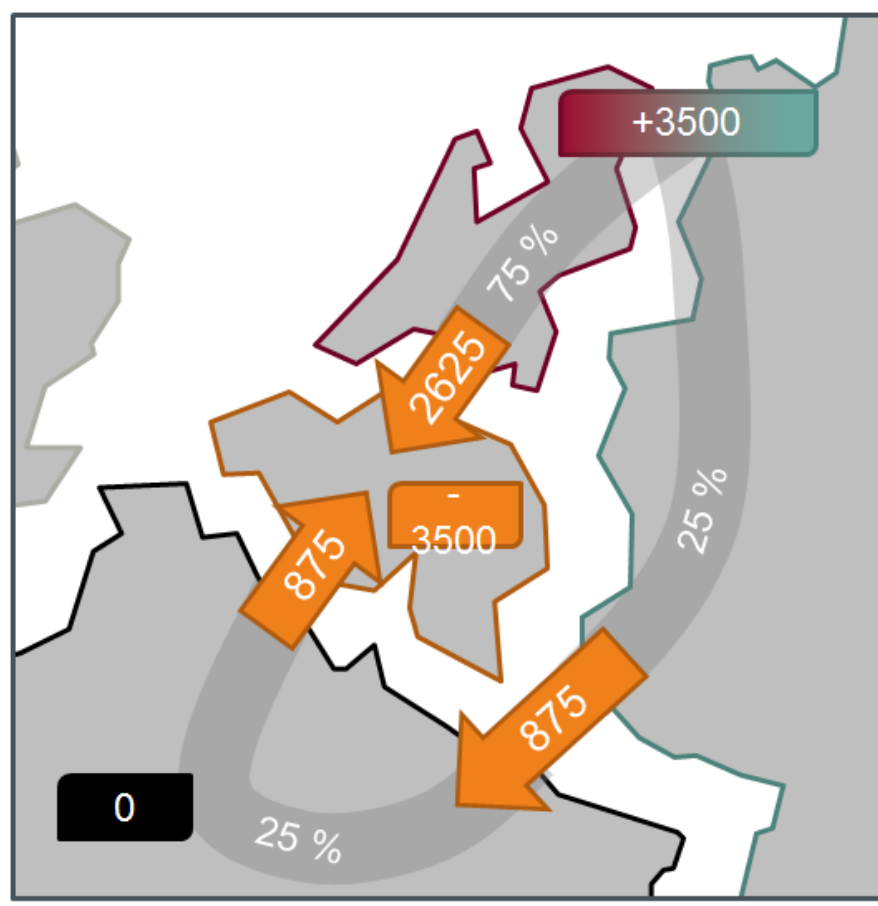
1. Introduction: analyses de réseau
2. Action spécifiques hiver '14-'15 : Coordination CWE de la capacité pour le marché dans plusieurs horizons de temps (M-1, D-1, ID)
3. Action spécifique hiver '14-'15 : Dynamic Line Rating
4. InterTSO à la demande d'Elia
5. Conclusions

# 1. Introduction: analyses de réseau

## Installed border capacity (nominal)

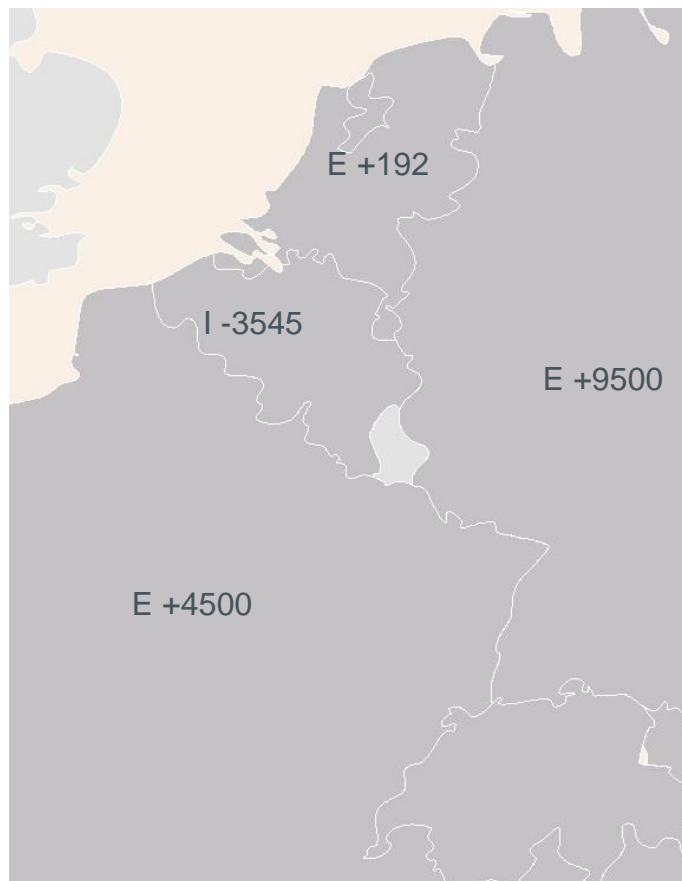
	MVA	MVA N-1 grens
Doel-Zandvliet / PST ZV	1420/1400	
Maasbracht-Meerhout / PST	1420/1400	2750
Maasbracht-Gramme/PST	1350/1400	
Avelgem-Avelin	1525	
Avelgem-Mastaing	1316	
Chooz-Monceau	290	3806
Achêne-Lonny	1316	
Moulaine-Aubange	442	
MontSM-Aubange	442	

# Principle balance / physical flow

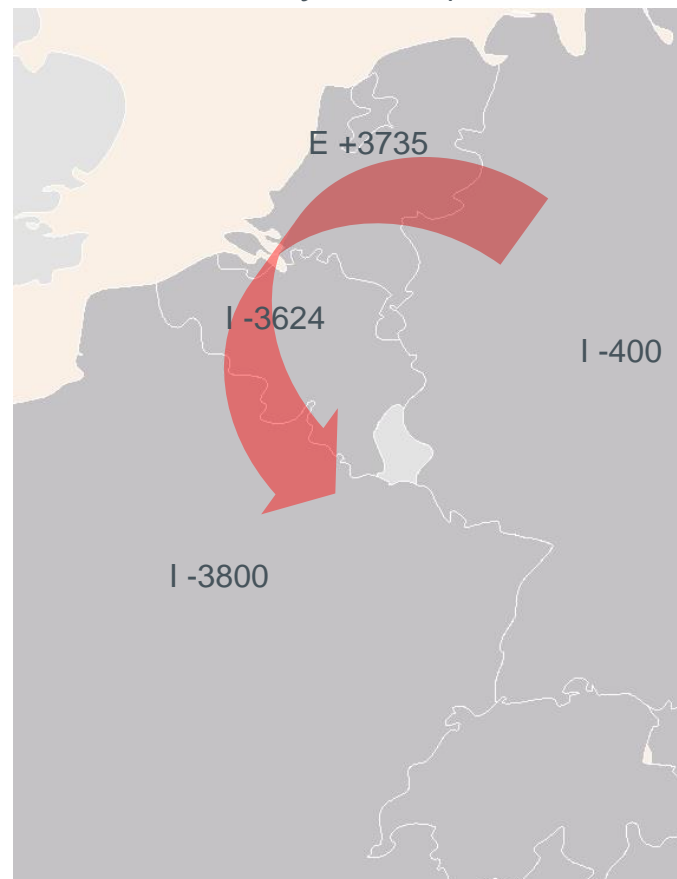


# Prepare for the worst case scenario in CWE

High wind, cold (most occurring)



No wind, very cold (**worst case**)



## No wind and very high load scenario (contd): Optimized physical flows



BE, NL, DE and FR grids implemented all the normal and exceptional topological actions to decrease the high unbalance of the flows

Physical flows **Not Manageable** with these actions.

➔ The global flow from the North to the South has to be reduced by adjusting commercial exchanges on CWE borders.

= need for a coordinated combination of NTC's on several CWE borders

2. Action spécifique hiver '14-'15 : Coordination  
CWE des capacités mensuels, day ahead,  
intraday



# Specific winter/scarcity: Overview time horizons XB capacity coordination



## In M-1 :

- Evaluate the need for **preventive reduction of M-1 CWE capacities**

## In W-1 until D-2:

- Continuous monitoring, exchange of information, escalation, ... **trigger Elia: capacity needed to prevent scarcity**

## In D-2:

- Apply a **coordinated optimization of day ahead capacities** (agreed upfront) with as objective to reduce the risk of curtailment, however, at the same time make sure that flows resulting out of the market coupling would remain manageable.

## In D-1 and intraday:

- Based on more accurate forecasts, additional remedial actions, taking dynamic line rating into account and perhaps freeze intraday exchange on other borders: **increase the intraday capacities towards BE** with as objective to make sure that our infrastructure is made available to market actors as optimal as possible, without endangering grid security.

## In Real-time:

- Avoid as much as possible preventive load shedding by also using **redispatch** and absorbing reliability margins. **InterTSO contracts** can be used both for energy as for **load flow problems**.

# Coordination of Day ahead capacity focused on scarcity BE

- The combination of border capacities in CWE resulting from this exceptional coordination process in D-2 (with Coreso/SSC) must be safe in terms of flows for a given/needed import towards Belgium.
- In the normal “common process” exists only the possibility of "red flag“, which would reduce NTC’s on all CWE borders to obtain safe flows.
- In practice, we need to co-ordinate in D-2 those day ahead capacities which have an impact on the flows on Belgian North border:
  - If France has no problem **reduction day ahead capa DE>FR**
  - If France has a shortage too: **reduction in the Netherlands of day ahead capa NL>DE**
- Recommendations on values will come from Coreso/SSC, in D-2, when the scarcity flag was raised.
- Otherwise, the normal common process still exists.

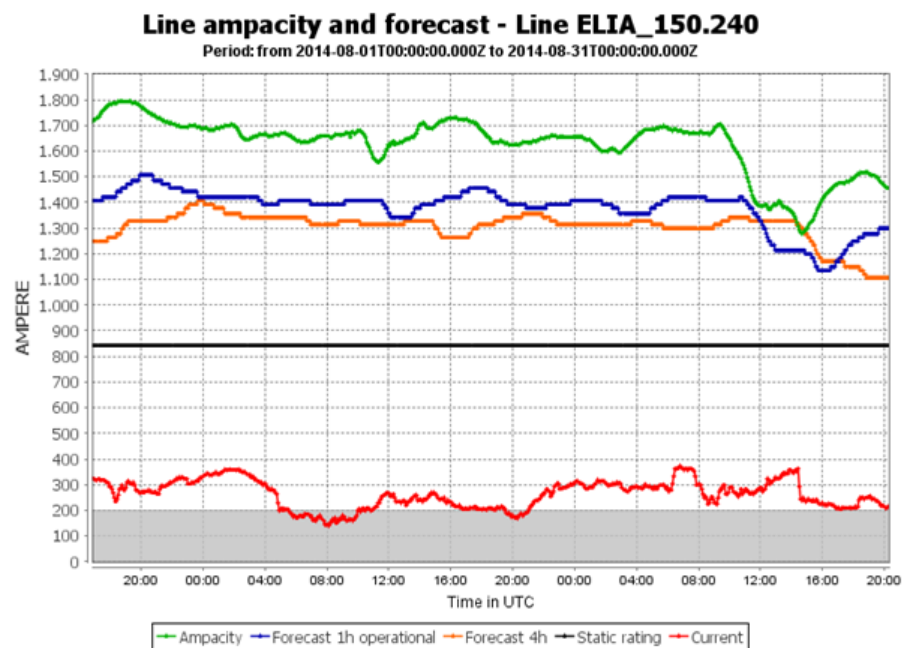
# Intraday capacity, starting D-1, ongoing ID (Be accurate)

- The neighbouring TSO's agree, for the scarcity days, on borders NL>BE or FR >BE, and still without endangering grid security, to determine a higher increase of intraday capacity, meaning not limited to the classical 200 MW increase (increase = above upon the use it or lose it).
- Between Tennet NL and Elia, a process for increase of intraday capacity already exists.
- With RTE, only in case of adequacy risk for Belgium, a process for intraday capacity updates will be set-up via Coreso
- Main drivers for allowing an increase of intraday capacities :
  - More accurate forecasts (DACF),
  - Taking dynamic line rating (Ampacimon) into account,
  - Additional remedial actions,
  - Possibly freeze intraday exchange on other borders (e.g. FR>DE)

### 3. Action spécifique hiver '14-'15: Dynamic Line Rating

# Dynamic Line Rating on border lines (technical)

- Timing to implement DLR on critical branches for cross border : December
- Real time operations: Static rating of the overhead lines replaced by Ampacity 1H, capped on 130% seasonal limit (E.g. 130% of 112% Inom = 146 % Inom)
- RTE & TenneT (1st time) will apply their seasonal values (on intrinsically stronger conductors)
- Additional intraday evaluations will take into account line forecasted ampacity values (lower value at same certainty level)
- Forecasted ampacities CANNOT be used in D-2 to determine day ahead capacity
- N.B. Coordination with other elements like PSTs, neighbours still needed.



## 4. Inter TSO à la demande d'Elia

## In Real-time (avoid load shedding)

- Avoid as much as possible preventive load shedding by also using contracts for reserve or as redispatching.

**It is possible that, even after several capacity calculation stages, not all issues have been solved by the market, either:**

Flow problems occur :

- N-1 (grid) not safe, in BE or CWE

Adequacy/sourcing problems occur:

- Reserve margins not sufficient to cover N-1 (generation)
- Remaining ACE, ...

For both issues, reserve contracts and redispatching may be efficient close to real-time:

- Either to reduce flows (eg re-dispatch FR=>NL)
- Either to replace ACE by interTSO program (eg FR=>BE or NL=>BE), within the available import capacity

## 5. Conclusions



# Overview conclusions winter 2014-2015

- Actions on grid physics:
  - Acceptable flow on overhead lines: **Dynamic Line Rating, combined with temporary overload of PSTs.**
  - Use the max. of normal topological actions
  - The flow optimisation can be used for: securing allocated capacity, OR give extra capacity to market, OR allow interTSO
  
- Actions on capacity for market: Coordination in CWE, on **Elia's request**, calculated by **Coreso/SSC**
  - Safe combination of **day ahead** capacities, **also using reduced Monthly capacities**
  - Accurate (higher) **intraday** capacities, **with objective to increase BE imports**
  - **After market closure: Increased use of inter-TSO contracts, including redispatching if possible.**

# Many thanks for your attention!

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