



Voltage regulation – challenges for our future

User's Group 23/10/2014

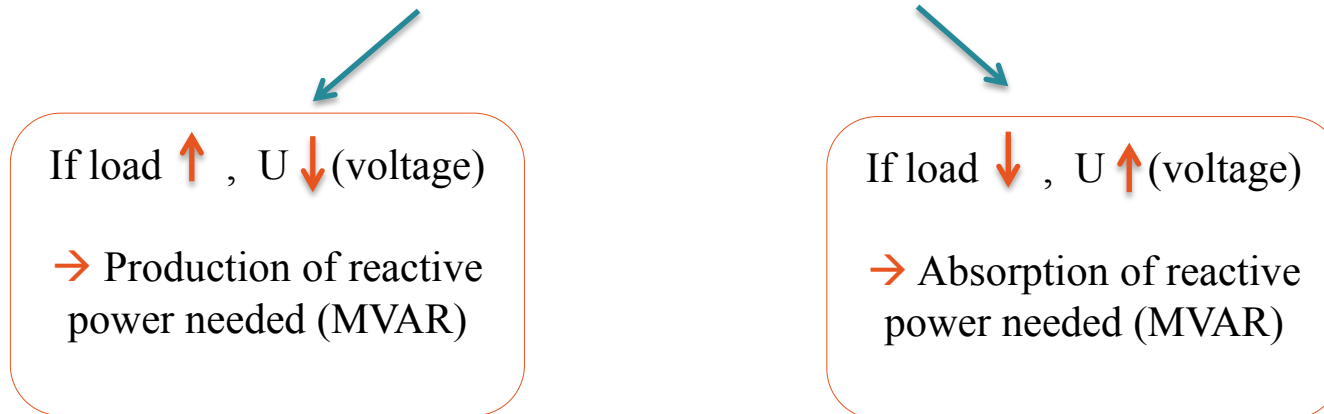


Agenda

1. Voltage regulation – reminder of key principles
2. Observed evolution of voltage regulation needs on ELIA's grid – 2013
3. Geographic constraint for voltage regulation
4. Evolution of Elia's grid and production park
5. Conclusions
6. Practical aspects

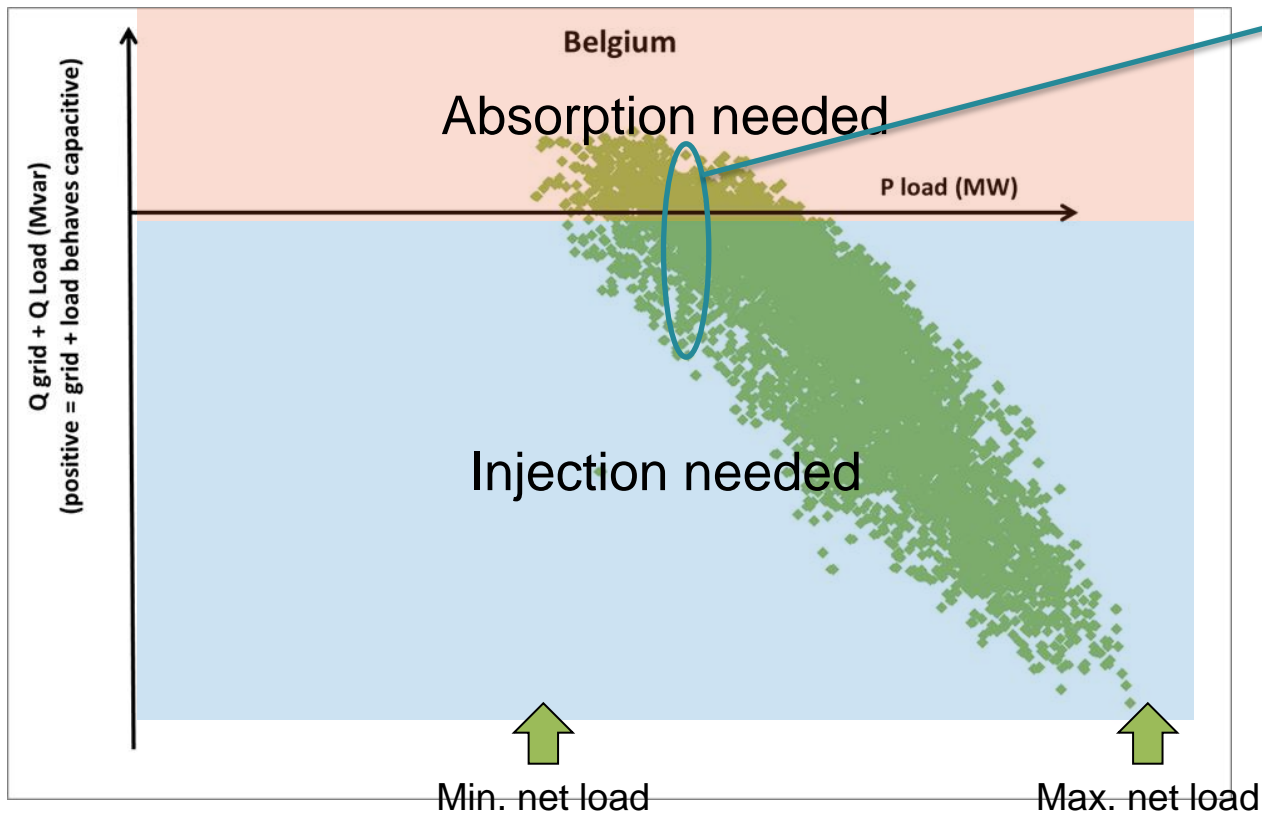
1. Voltage regulation – reminder of key principles

- Voltage on Elia's grid evolves following its **load** and **physical characteristics of its elements** (ex: cables are strongly capacitive when slightly charged and produce Mvar)



- ELIA uses, among other sources, equipment installed on production unit for voltage regulation and has therefore developed a specific ancillary service.
- A production unit has to produce active power to be able to supply reactive power .
- ELIA is currently analyzing how voltage regulation will evolve in coming years in order to adapt its ancillary service accordingly

2. Observed evolution of voltage regulation needs on ELIA's grid - 2013



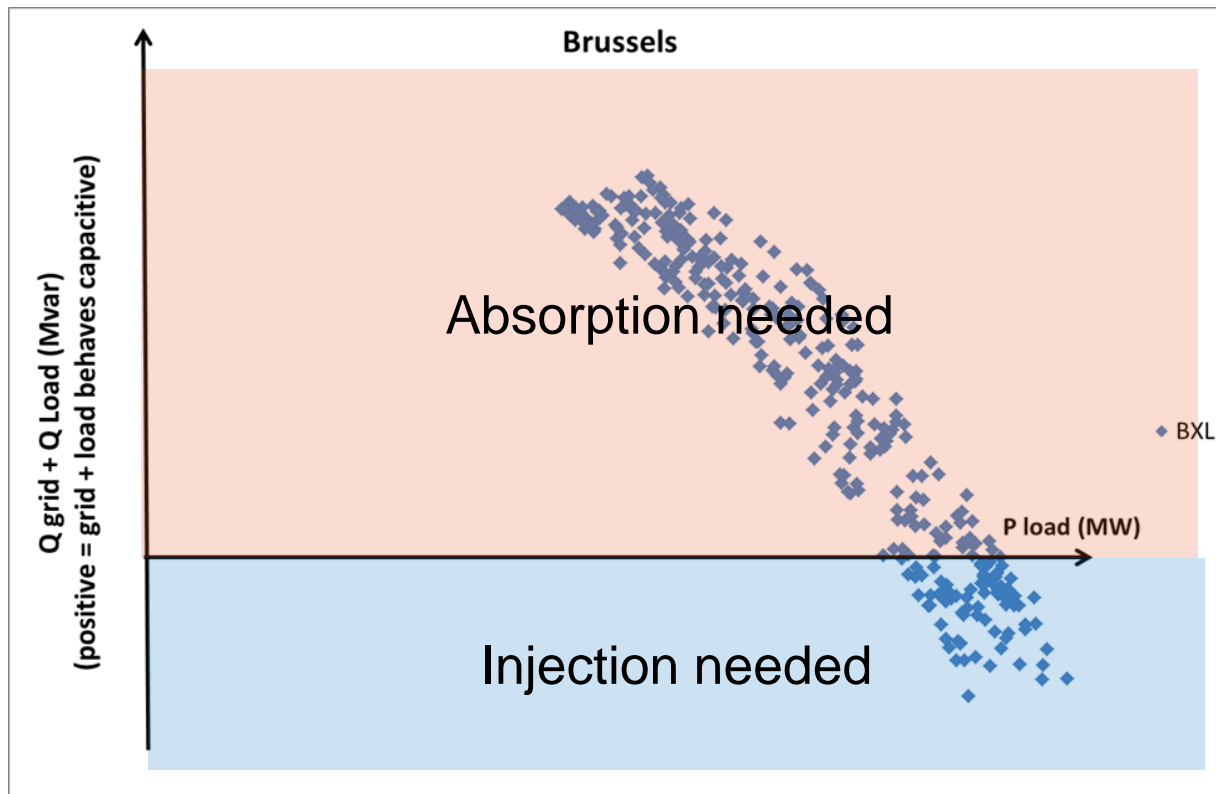
Opposite needs for reactive power occur at the same P load more frequently than before.
(ex: high importation level requires injection of reactive power)



Increasing volatility of the future need for reactive power

3. Geographic constraint for voltage regulation

- Need for reactive power vary significantly within Elia's electrical zones (ex: zone Brussels)
- Mvar cannot easily be transported on electrical grid (losses, instability,...)



4. Evolution of Elia's grid and production park

- Increasing capacity at interconnections
- Infrastructures on Elia's grid : increasing installation of cables → Our grid becomes more capacitive than before
- Temporary or definitive closure of classical production unit
- Continuous integration of Renewables

Need for **diversification**
of sources of reactive
power

5. Conclusions



Before being able to determine functioning rules (remuneration, activation, ...) to possibly use other sources for reactive power, ELIA needs to improve its **technical knowledge** of existing equipment on industrial customer's production site.

→ **Elia will send therefore a short questionnaire to all industrial customers**

6. Practical aspects

- ELIA wants to send its questionnaire before end of October
- **Industrial customers are kindly asked to answer before 31/11/2014 and send the questionnaire back to thibaut.gerard@elia.be**
- Questions / ELIA contact point : Thibaut Gérard or via your Key Account Manager

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