Les systèmes énergétiques du futur Vision d'Elia à l'horizon 2030 Cycle de Rencontres de l'Energie, 11.03.2016



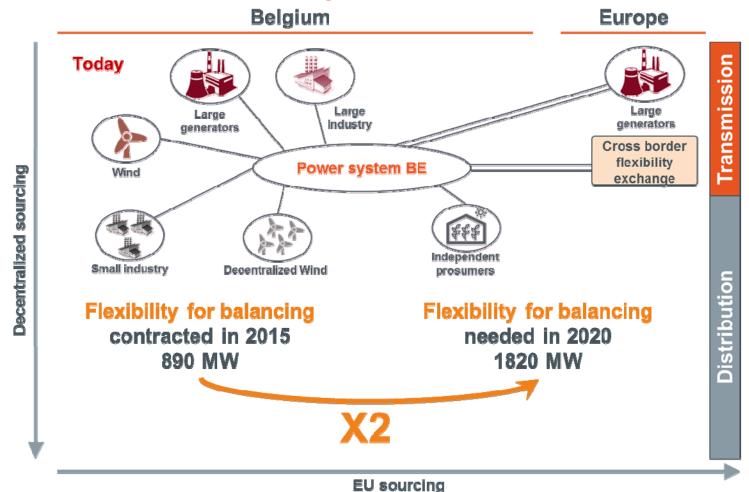
What we understood from CWaPe's vision

Energy mix is mainly oriented towards RES	 Resources are mainly decentralised Seems technically feasible
The "smart" grid is for everyone	 Supported by: Flexibility from generation and demand Cost minimisation and cost socialisation Adaptation to power electronics (enhanced security measures, provision of decentralised ancillary services)
Clearly defined roles are needed	 DSO: Responsible until the meter, provides "incentive" tariffs Supplier: Single point of contact, invoicing responsibility Intermediaries (aggregator, ESCO¹): chosen by the enduser, in an adapted market model

¹ Energy Service Company



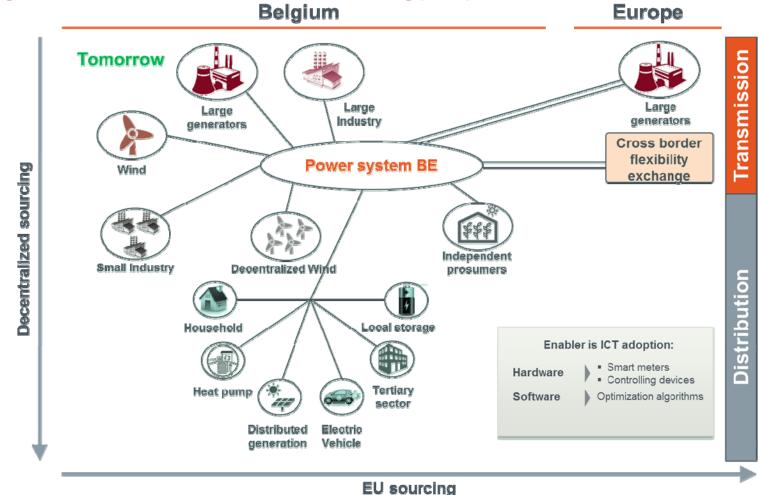
Already today: the electricity system is evolving due to more renewables and digitalisation



The flexibility needed to maintain the system balancing is increasing. Balancing is becoming more and more pan-European



Elia's vision of the future: more European integration with integrated decentralised energy system



Flexibility from decentralised energy resources (even at end-user level) participates actively in the balancing, and supports the massive integration of renewables



To implement our vision, key elements are needed

To manage an even more complex electricity system in the future, **we need a consistent, long-term and stable approach** to guarantee security of supply at affordable costs

The grid is key to integrate renewables

- The grid allows integrating the renewables connected at different voltage levels
- The transmission grid allows the flow of renewable generation across Belgium and abroad
- Interconnectors allow exporting excess renewables and importing missing generation, contributing to SoS

The grid needs to be complemented by other tools

- Flexible generation, not only conventional, but even from renewable sources
- Demand-side management, from different sectors (industry, tertiary sector, residential)
- Storage, from different technologies, and allowing bridging different energy systems

The market and more coordination are enablers

- Enhanced market mechanisms are needed to integrate the flexibility from decentralised sources, and to enable pan-European balancing.
- TSO-DSO coordination is key for system operation and market integration in order to have high and affordable security of supply
- Intra Federal coordination is key to have one vision that will enable the energy transition at affordable costs



Conclusion

- ✓ The future will be with more renewables (connected at different levels) in the energy mix
- Our vision is more European integration (balancing is pan-European) with integrated decentralised energy system (flexibility from decentralised resources contributing to the balancing)
- To build such a vision while guarantee secure and affordable security of supply, we will need different key elements
 - The grid, to integrate renewables at different levels and transport their energy within Belgium and abroad
 - ✓ Flexible generation, demand-side management and storage, which complement the grid
 - Enhanced market mechanisms and TSO-DSO coordination, to enable the optimal use of the different elements



Many thanks for your attention!





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