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



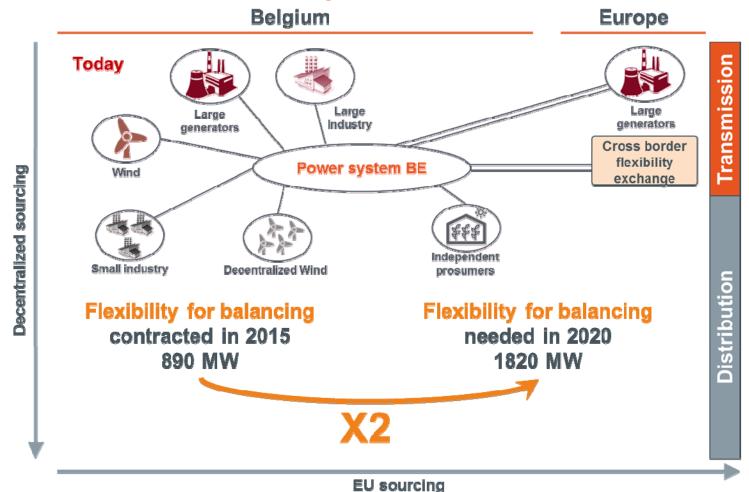
## What we understood from CWaPe's vision

Energy mix is mainly oriented towards RES	<ul> <li>Resources are mainly decentralised</li> <li>Seems technically feasible</li> </ul>
The "smart" grid is for everyone	<ul> <li>Supported by:</li> <li>Flexibility from generation and demand</li> <li>Cost minimisation and cost socialisation</li> <li>Adaptation to power electronics (enhanced security measures, provision of decentralised ancillary services)</li> </ul>
Clearly defined roles are needed	<ul> <li>DSO: Responsible until the meter, provides "incentive" tariffs</li> <li>Supplier: Single point of contact, invoicing responsibility</li> <li>Intermediaries (aggregator, ESCO<sup>1</sup>): chosen by the enduser, in an adapted market model</li> </ul>

<sup>1</sup> Energy Service Company



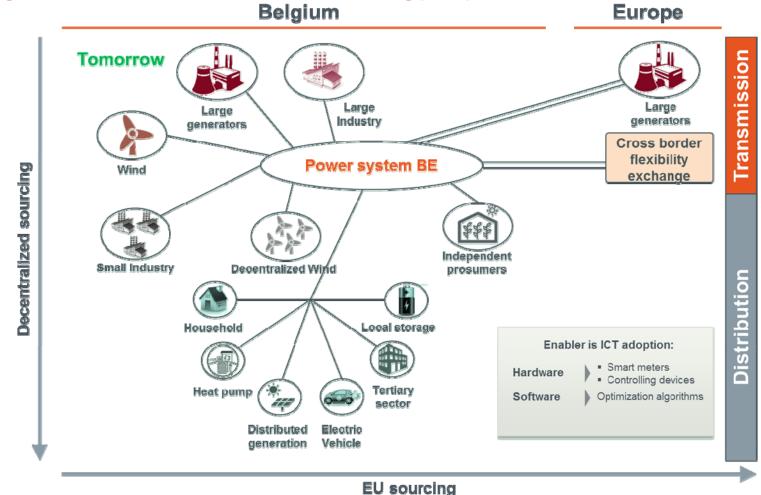
# Already today: the electricity system is evolving due to more renewables and digitalisation



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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