


ACER

 Agency for the Cooperation
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Session I: Building an integrated grid **Issues of decarbonisation and RES**

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CEER - NARUC
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The EU Energy Sector challenges

(from the "Bridge to 2025" Conclusions Paper – September 2014)

**Moving towards a
Low-Carbon Society**

**Increased penetration of
non-programmable
Renewable Sources**

**Adequacy Concerns and
greater need for Flexibility
of the Electricity System**

**Flexibility and
Adequacy Markets in
Electricity**

**Changing Electricity
Generation Mix**

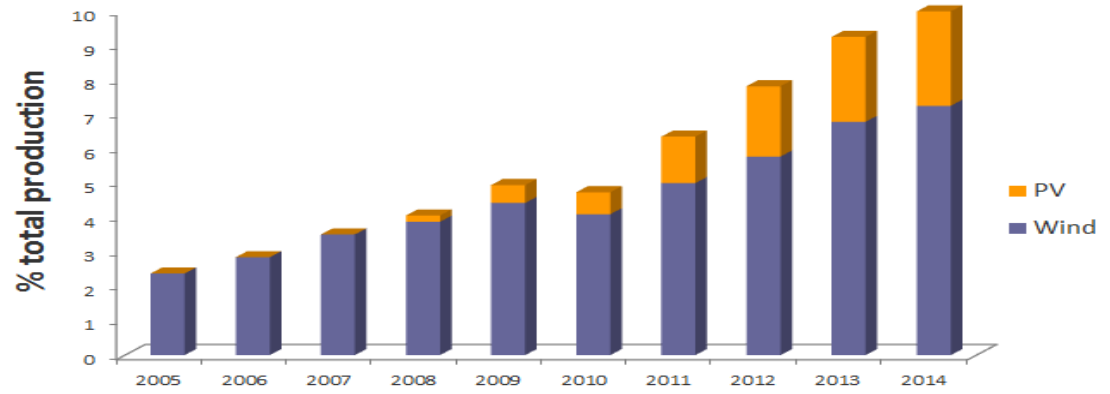
**Gas used as a "Cleaner"
and Flexible Power
Generation source**

**More liquid, flexible
and integrated Gas
Markets**

**Greater Consumers'
Engagement**

The Flexibility Challenge (1)

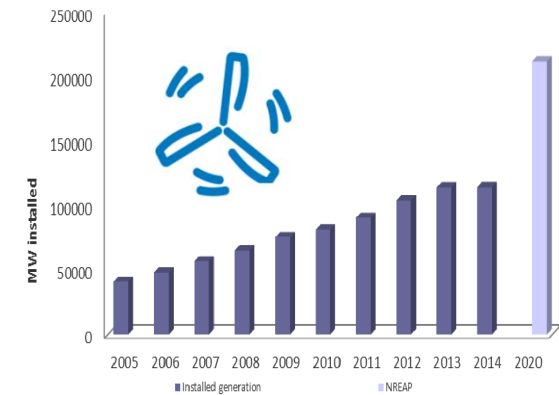
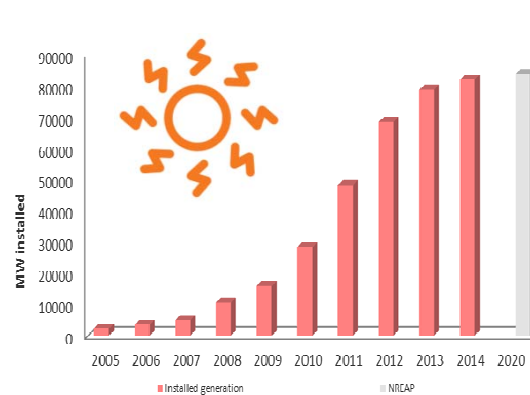
**Increased
RES Penetration**



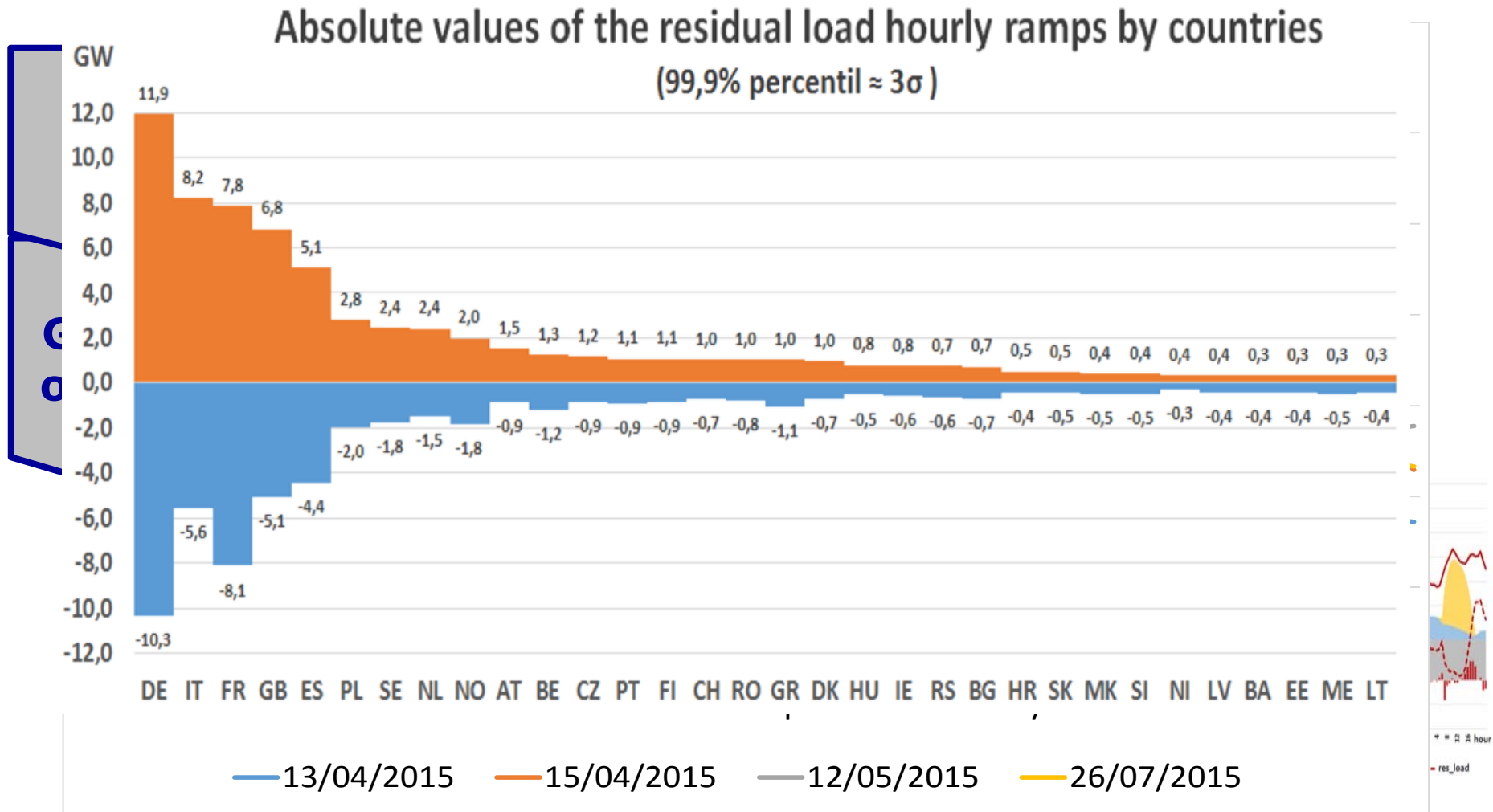
Share of renewable generation

Expected share of RES in electricity generation

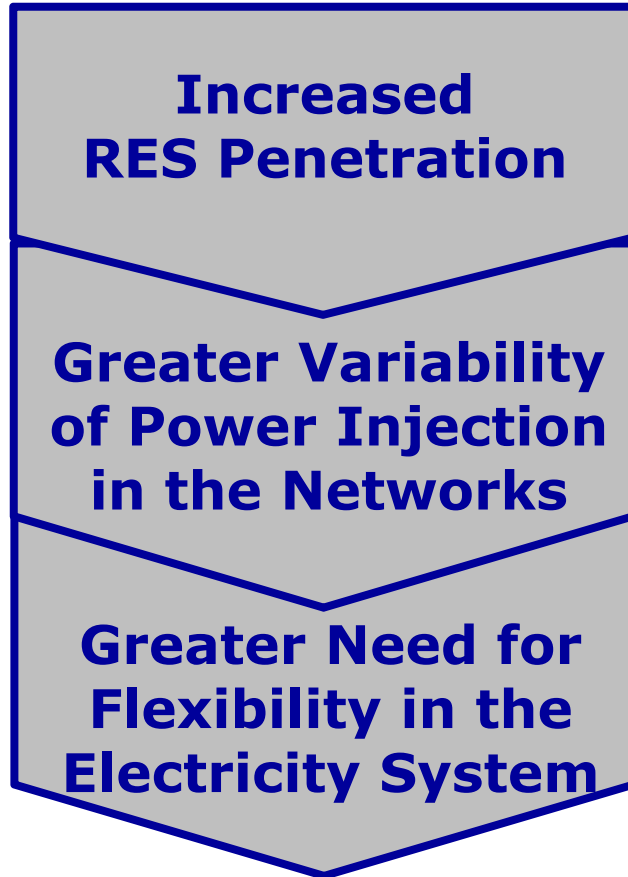
2020 **34%** **2030** **≈ 50%**



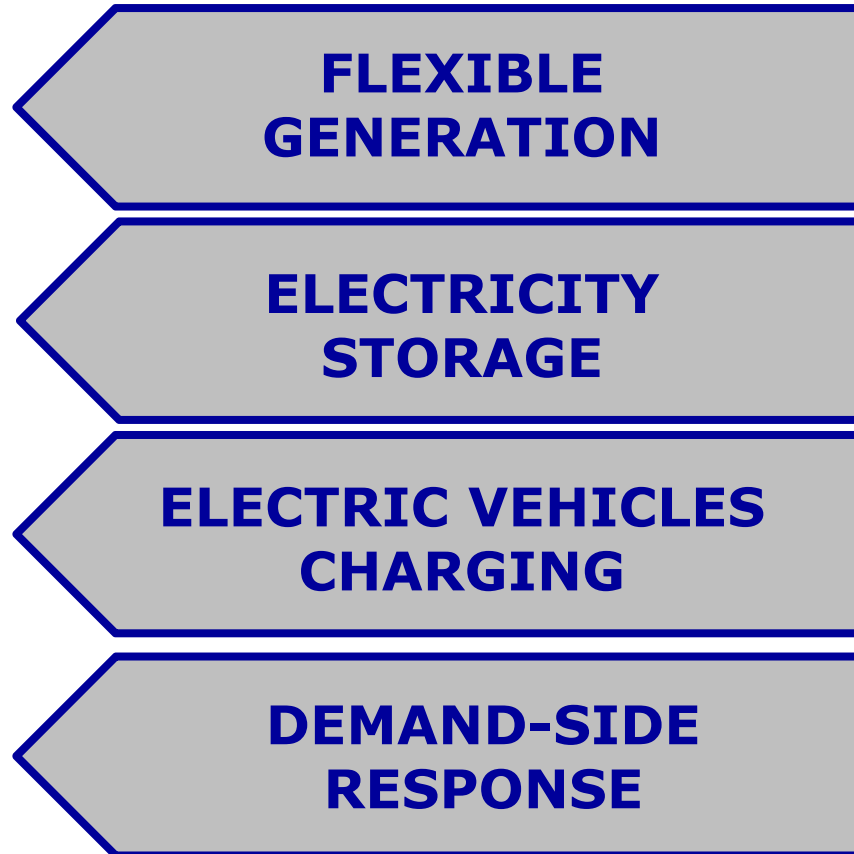
The Flexibility Challenge (2)



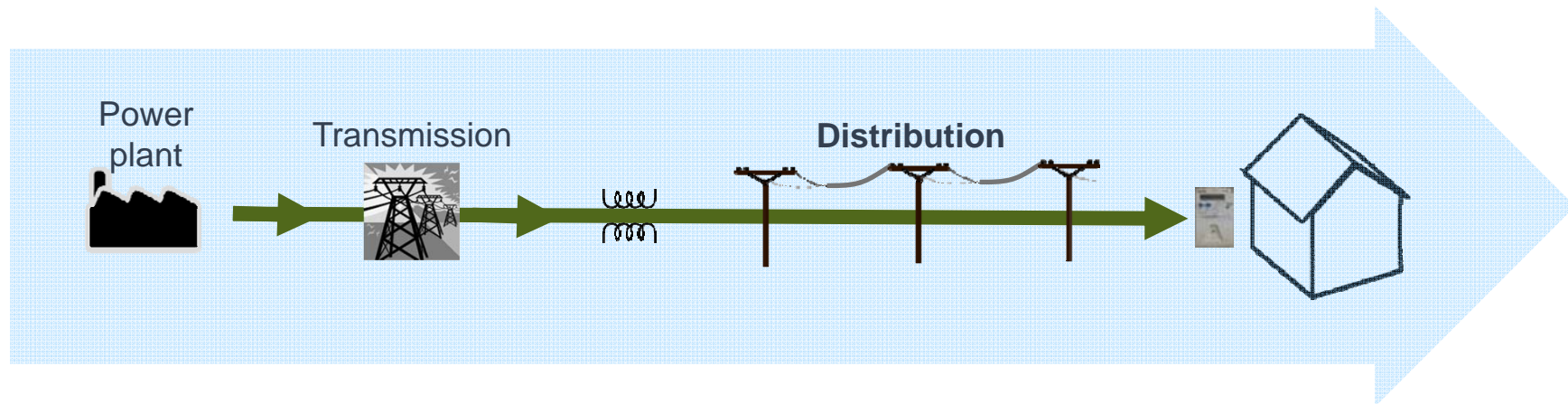
The Flexibility Challenge (3)



- Most of these resources are/will be connected to **distribution grids**



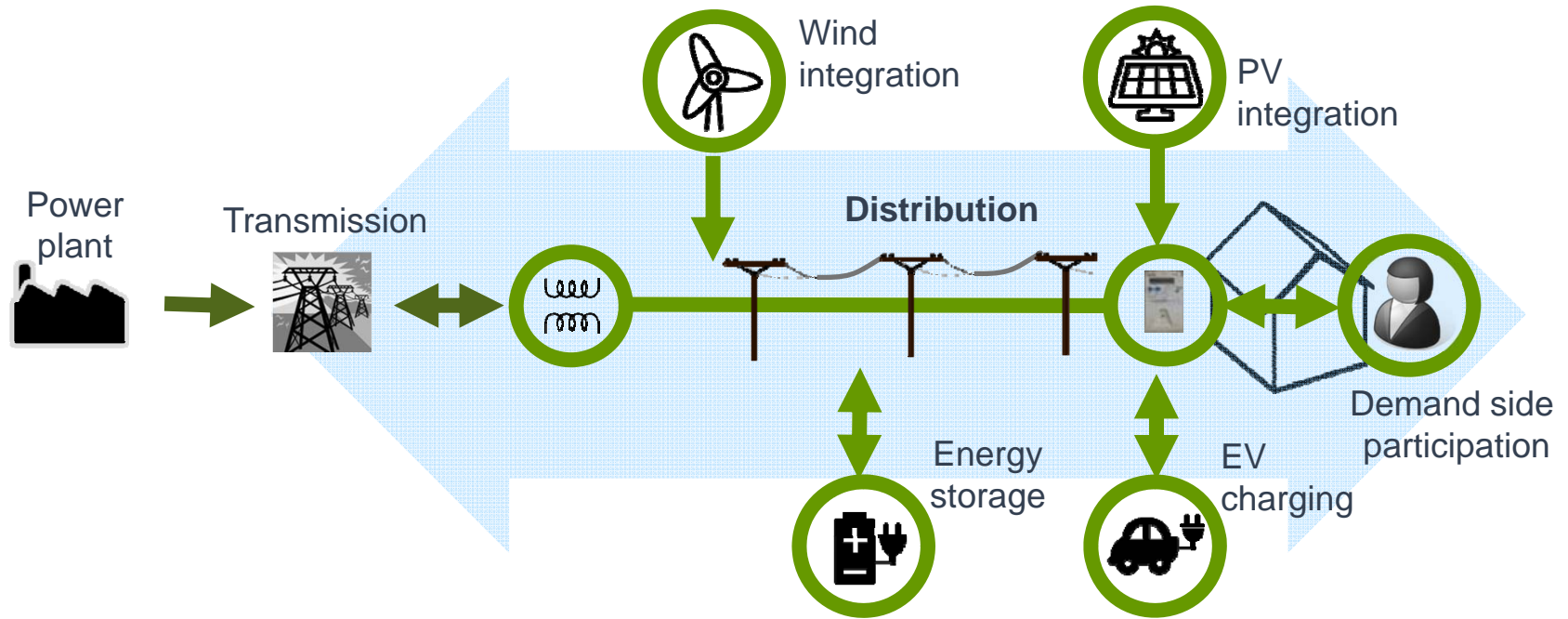
From a centralised power system...



A Changing Paradigm (2)

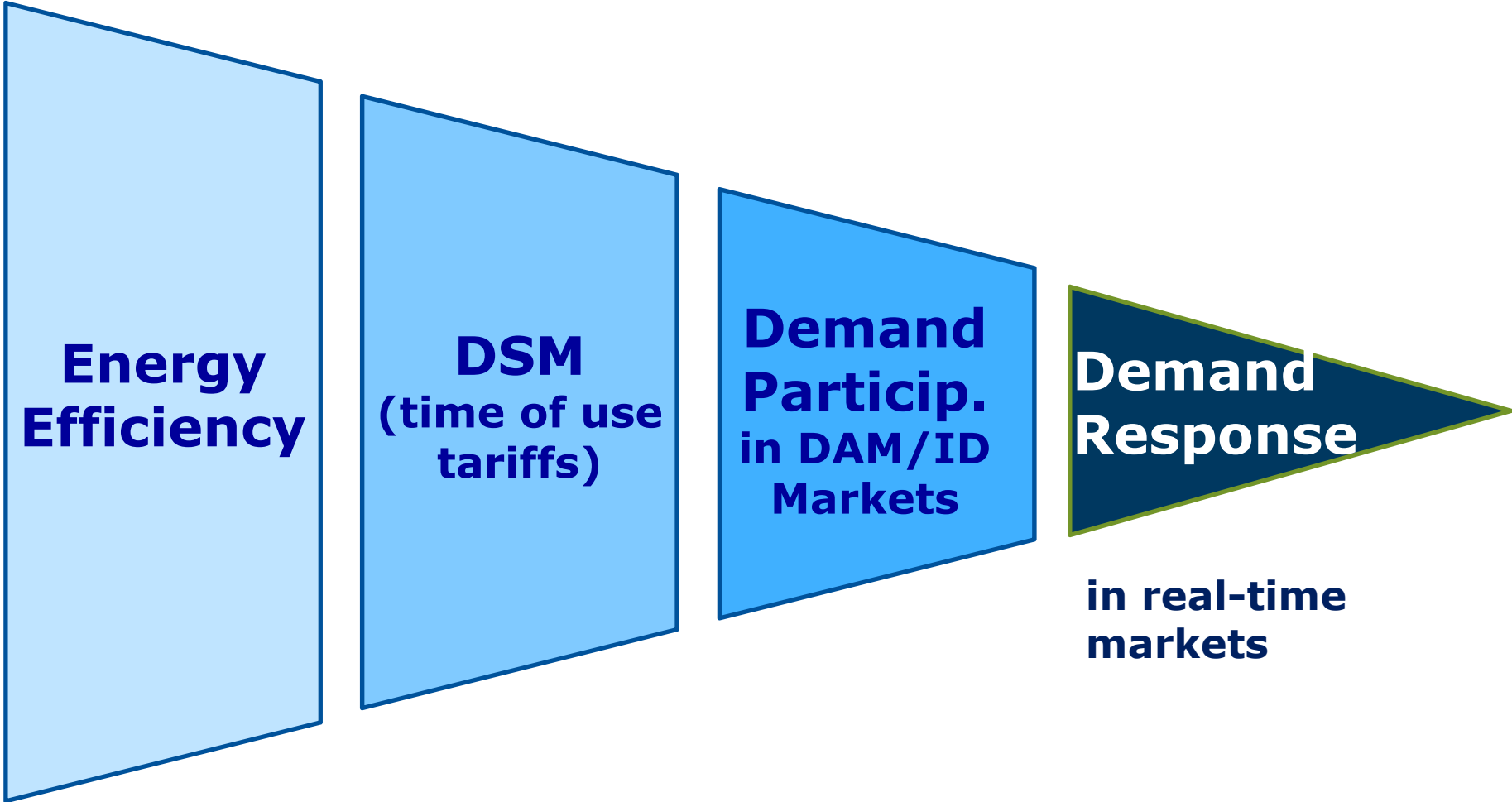
... to a decentralised one.

THE CHALLENGE



THE OPPORTUNITIES

Demand-Side Engagement



Integrating Grids or Integrating Systems? ... or both?



**Electricity
Transmission**



**Electricity
Distribution**



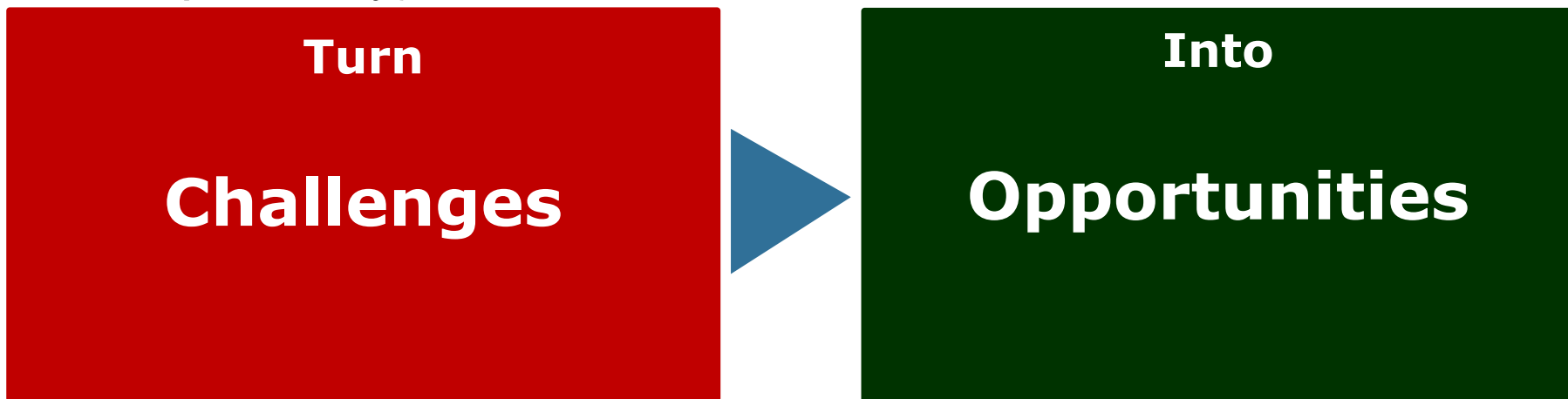
**Electricity
Transmission**



**Gas
Transmission**

Integrating Systems

- Greater need to operate the distribution system actively to:
 - balance more variable injections with flexibility resources
 - manage constraints
- Coordinated Operation of T&D Systems. Which model?
- Enable demand-side participation/response (in all market timeframes)
- Support innovation-based new services (offered competitively)





**Thank you
for your attention**

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