Securing Resource Adequacy

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Why has resource adequacy become an issue?

**MORE POWER COMING FROM RENEWABLES**

Today up to 90% of variable renewable electricity is connected to distribution grids

- Rising share of renewable energy is changing the nature of electricity markets
  - More variable less-predictable output increases price and volume risk – not a good investment environment
  - Need for higher capacity margins – more capacity for market to support.

- Need to decommission coal fleet over the next 10-15 years, some of this capacity will need to be replaced
Winter package - proposals

• Energy market reform rather than explicit investment support
  – Markets should reflect the real-time value of energy and adequately reward flexibility
  – Allow demand side to participate, responding to price and other signals to reduce resource requirements
  – Adopt a regional approach to resource adequacy assessment,
    • Extends regionalization seen in market timescales
    • Exploits diversity to reduce overall capacity requirements
Capacity surplus: Europe as a whole (GW)

ENTSO-e 2015 SO&AF data

- Potential to reduce capacity requirements via a regional approach
Resource adequacy assessment

- Starting point - security of supply is a MS accountability (Directive 2005/89/EC)
- MS required to adopt
  - Reliability Standard (Entso-e) against which capacity requirements can be determined
    - defines expected energy not served, based on VoLL and cost of entry
  - Standardized European probabilistic resource adequacy assessment methodology (Entso-e)
    - Contribution from demand response, storage and interconnection
If a capacity deficit is identified

- Identify market/regulatory failures that might be contributing to insufficient levels of investment
- Adopt remedial measures
  - Shortage pricing, removal of price caps, increased interconnection, demand response, storage etc
- If remedial measures are insufficient or time is needed for the measures to be effective, then a capacity mechanism may be justified
  - Compliance with State Aid guidelines
  - Capacity emitting more than 550gm CO2/kWh excluded
Role of Regional Operational Centers

• Entso-e required to establish system operational regions, each with a ROC
• Significant role in resource adequacy assessment & delivery
  – Regional sizing of reserve and balancing requirements
  – System adequacy forecasts
  – Calculate maximum entry capacity for external generation
DG Comp Sector inquiry into Capacity Mechanisms (CM)

• CMs reflect concerns over security of supply
  – ability of “energy-only” market support investment

• CMs fundamentally change electricity markets
  – Income for availability not energy
  – Different designs impact on energy prices differently
  – Domestic resources favoured, no proper account of interconnection/external resources

• Badly designed CMs often
  – Support incumbents over new entry/technologies
  – Over-procure with unnecessary costs to consumers
DG Comp recommendations

• Market reform before introducing a capacity mechanism
  – Economic reliability standard
  – Prices should reflect value, price caps removed, balancing market reform
  – Encourage demand flexibility

• Where capacity mechanisms can be justified
  – Broadest eligibility including DR
  – Explicit cross-border participation