



## Ensuring Market and Regulatory Arrangements help deliver Demand-Side Flexibility

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## CEER's work on Demand-Side Flexibility

- Who are we?

- ▶ The Council of European Energy Regulators : the voice of Europe's national regulators of electricity and gas at EU and international level
- ▶ We cooperate and exchange best practice to deliver a competitive, efficient and sustainable European internal energy market

- Why Demand-Side Flexibility?

- ▶ The Energy Efficiency Directive (2012) places requirements on regulators to promote demand side
- ▶ There are huge potential benefits if we can harness DSF and make it work in the best interests of European consumers



## Agenda

- *The potential value of Demand-Side Flexibility*
- *Unlocking that value through open markets*
- *Principles to govern Demand-Side Flexibility*



## Energy markets are evolving...challenges

- Massive changes in energy system due to environmental policy and technological advance
  - ▶ Increased amount of intermittent Renewable Energy Sources (RES)
  - ▶ Distributed generation; new market players
  - ▶ Technology: smart meters, smart grids; electrification of heat and power
  - ▶ Security of supply concerns
  - ▶ Consumers: increasingly aware and concerned (prices, trust, privacy, the environment)
- **Demand-Side Flexibility is *part* of the response**



## Where's the value?

DSF value throughout the energy system



**Balancing**

A flexible tool  
for balancing

**Capacity**

A flexible form  
of providing  
adequacy

**Generation**

Reduction in  
average  
generation costs

**Networks**

A substitute for  
network assets

DSF for Market purposes

DSF for Network purposes



## Potential benefits of DSF

| Potential benefits                        | Details   | Valuation (where service/product engages)   | DSF |
|---|---|---|-----|
| Improved long-term security of supply     | <ul style="list-style-type: none"> <li>Avoided investment in peak generation units</li> <li>Back up for intermittent generation</li> </ul>                    | <ul style="list-style-type: none"> <li>Participation in capacity remuneration mechanisms</li> </ul>   |     |
| Improved short-term security of supply    | <ul style="list-style-type: none"> <li>Additional flexibility, reduction of balancing costs</li> </ul>  | <ul style="list-style-type: none"> <li>Participation in balancing reserves (capacity + energy remuneration)</li> </ul>  |     |
| Reduced market price                      | <ul style="list-style-type: none"> <li>Production cost savings</li> <li>Lower spot prices</li> </ul>  | <ul style="list-style-type: none"> <li>Spot price</li> </ul>  |     |
| Reduced network costs                     | <ul style="list-style-type: none"> <li>Reduction of losses recovery costs</li> <li>Avoided investment costs</li> </ul>  | <ul style="list-style-type: none"> <li>Reduced network tariffs</li> <li>Difficult to assess the value at this stage</li> </ul>  |     |
| Better integration of renewables          | <ul style="list-style-type: none"> <li>Increased flexibility to manage renewables intermittency</li> </ul>  | <ul style="list-style-type: none"> <li>Cheaper balancing reserves</li> <li>Wholesale market (negative prices/RES curtailment)</li> </ul>                              |     |
| Environmental benefits and energy savings | <ul style="list-style-type: none"> <li>Potential reduction of global CO<sub>2</sub> emissions</li> <li>If deferment is less than 100%</li> </ul>              | <ul style="list-style-type: none"> <li>EU ETS dedicated mechanism</li> <li>Dedicated mechanisms (white certificates, direct subsidies programme)</li> </ul>           |     |
| Social and economic benefits              | <ul style="list-style-type: none"> <li>Reduction of fossil fuel import dependency</li> <li>Industrial competitiveness</li> <li>Jobs and innovation</li> </ul> | <ul style="list-style-type: none"> <li>Risk covered in the pricing of fossil generation</li> <li>No direct link with DSF action</li> <li>Net jobs creation</li> </ul> |     |

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## Where we are currently?

- DSF is so far mainly offered **by large industrial consumers** and mainly in the **balancing markets**
- For smaller consumers, DSF is so far **not a real option** although some countries enable them to participate either independently or through an aggregation service provider
- Energy systems historically designed **from the supply side** – the process to open up demand side will be **progressive**
- **Post EED, IEM and Network Codes, Smart Meters, (and local network balancing) things will change**



# Not a market for DSF, but markets open to DSF

## Networks

## Markets

Capacity

### Balancing?

- Open?
- Partially open?
- Closed?

### Ancillary Services

- Open?
- Partially open?
- Closed?

### Balancing

- Open?
- Partially open?
- Closed?

### Wholesale

- Open?
- Partially open?
- Closed?

Volume/Energy

- Open?
- Partially open?
- Closed?

- Open?
- Partially open?
- Closed?

- Open?
- Partially open?
- Closed?

- Open?
- Partially open?
- Closed?

## Anything in our way?

- But some difficulties to be overcome
  - ▶ Clearly established roles, responsibilities, relationships among market players
  - ▶ DSF needs access to all available energy markets (balancing, wholesale, retail and capacity)
  - ▶ The changing role of the DSO
  - ▶ Competition between the market players (new and incumbents)
  - ▶ Existing price regulation hinders DSF
  - ▶ Technological compatibility, measurement & verification, smart meters
  - ▶ Consumer awareness, engagement & understanding

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## High level Principles governing Demand-Side Flexibility

- As a high-level outcome CEER wants to **unlock the value of demand-side flexibility for the provider/customer**. This requires:
  - ▶ That consumers and market participants have the necessary information and tools to adequately and effectively engage in the market
  - ▶ A market free from barriers that promotes equal access for all parties and new entrants, through interoperable standards and arrangements
  - ▶ A regulatory framework that is flexible enough to adapt in an evolving market

## High level Principles governing Demand-Side Flexibility

- **More specifically:**
  - ▶ **An independent party should facilitate the administration of the different exchanges (energy, information, financial) between commercial parties**
  - ▶ **There should be processes to ensure that all parties have visibility of the DSF actions taken by any one party which impacts their business**
  - ▶ **Distortions to market signals that would unfairly advantage or disadvantage DSF should be avoided – a level playing field**
  - ▶ **DSF should be considered alongside traditional network reinforcement options by TSOs and DSOs**

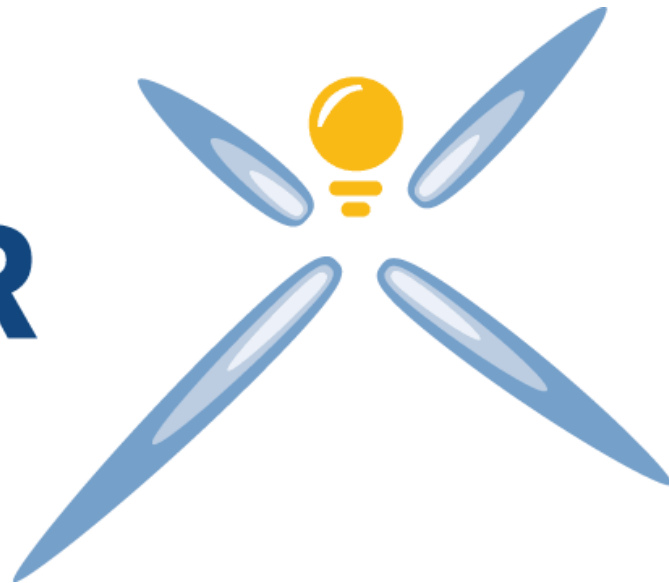
## Recommendations

- 6 short term recommendations
  - ▶ Roles and responsibilities clarified
  - ▶ The role of DSOs (and network tariffs)
  - ▶ Standards and methodologies
  - ▶ European network codes maintain a focus on demand side
  - ▶ Continue to quantitatively assess/compare DSF across the EU
  - ▶ Market and regulatory arrangements allow system-wide benefits to be passed on to end-use consumers

# Thank you for your attention

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