Energy regulation and the fight against climate change

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CEER–ARIAE meeting, Madrid, 8 April 2010

Overview

- Copenhagen outcome and EU next steps
- Regulators' commitment made in Athens
- ICER Virtual Working Group on Climate Change
- Current CEER work:
  - Smart grids
  - Wind energy integration

Copenhagen outcome

- **15th Conference of the Parties (COP15) to the UN Framework Convention on Climate Change held on 7-18 Dec 2009**
  - **No legally binding successor to Kyoto Protocol agreed**
  - **COP15 merely took note of the "Copenhagen Accord" among 29 Heads of State and Government**
  - **Objective: limit global warming to below 2°C above pre-industrial levels**
  - **Developed countries to put forward their voluntary emission reduction targets by the end of January 2010**
  - **Developing countries to commit to mitigation actions; basis for regular Monitoring, Reporting and Verification of such actions; and financing (30bn USD for 2010-2012; 100bn USD/a from 2020)**

EU next steps (1)

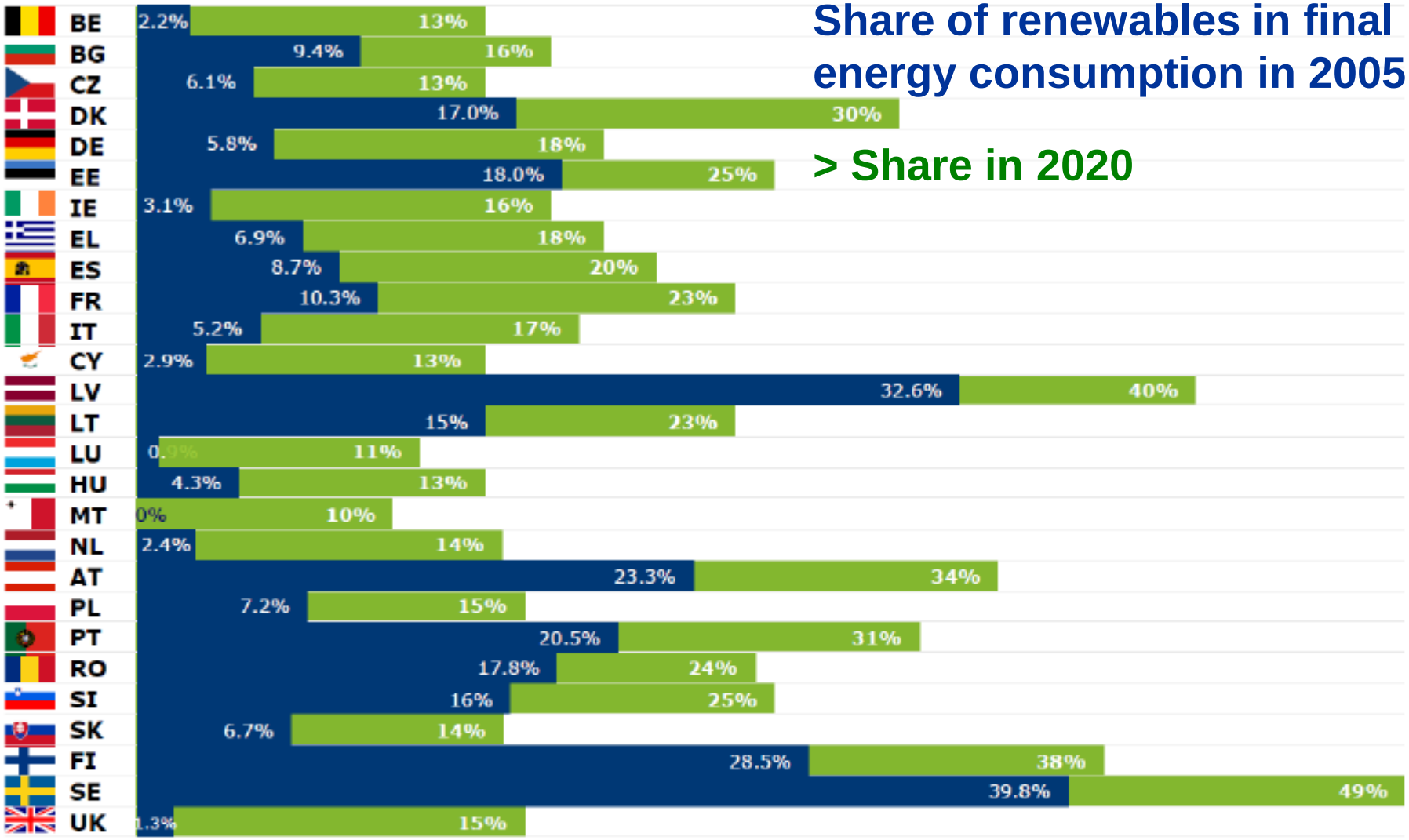
- **EU aims to make the Accord legally binding, if not in Cancun in Dec 2010, then in South Africa in 2011**
- **European Council of 25-26 March 2010 set a series of *'EU2020'* targets, inter alia confirming earlier targets to:**
  - **increase renewables' share in final energy consumption to 20%;**
  - **move towards a 20% increase in energy efficiency**
  - **reduce greenhouse gas emissions by 20% compared to 1990**
  - **EU *'conditional offer'* to move to a 30% reduction by 2020, *"if the conditions are right"***
    (as part of a global and comprehensive agreement, provided other developed countries commit themselves to comparable emission reductions and developing countries contribute adequately according to their responsibilities/ capabilities)

EU next steps (2)

- Commission intends to draft a *'Roadmap for a low carbon energy system'* to achieve a 80-95% reduction by 2050, with milestones for 2030
- Analysis of practical policies required to implement a 30% EU emission reduction, including 'carbon leakage' risk (situation of energy-intensive industries)
- Implement the Energy/Climate package of 2008

  … inter alia National Plans by June 2010 to achieve the respective binding national renewables targets

EU next steps (3)
National renewable energy targets



Regulators' commitment

- **At the Athens World Forum on Energy Regulation in Oct 2009, regulators issued a Statement on Climate Change and committed to:**
  - **create a new International Confederation of Energy Regulators**
  - **support the delivery of energy to all in developing markets**
  - **promote energy efficiency**
  - **conduct a review of renewable energy & distributed generation**
  - **share best practice on regulatory issues key to meeting emissions targets, in particular maintain a climate for investments in grid infrastructure and energy efficiency**
  - **foster stronger network interconnection in cooperation with nearest neighbours, and facilitate compatibility of our regulatory frameworks**
  - **promote reliable energy supply and reasonable energy costs to all consumers**

Work by ICER

- **The 'International Confederation of Energy Regulators' established Virtual Working Groups, covering:**
  - **Security of Supply,**
  - **Competitiveness and Affordability,**
  - **Education, training and best practices, and**
  - **Climate Change**
- **Climate Change VWG focuses on:**
  - **Best practice-Report on energy efficiency promotion (for G8 Energy Ministers' meeting on 25-27 June 2010)**
  - **Review of renewable energy and distributed generation (2nd half of 2010)**
  - **Share best practice on regulatory issues key to meet emissions targets – may include smart electricity grids**

Current CEER work (1): Smart grids

- **Conventional power grids**
  - **Centralised, controllable and predictable Generation followed stochastic, passive Demand**
  - **One-way power flow, limited communication**
- **Smart grid**
  - **(Some) decentralised (at LV and MV) and intermittent Generation**
  - **(Some) controllable Demand: Demand side management will contribute to network operation**
  - **Two-way communications available at all voltage levels**
  - **Distributed storage and electric vehicles**

Main drivers of Smart grids

- **Large-scale renewable energy sources including intermittent generation**
- **Distributed generation including small-scale renewable energy sources**
- **Active customer participation**
- **Market integration and market access**
- **Improved operational security**

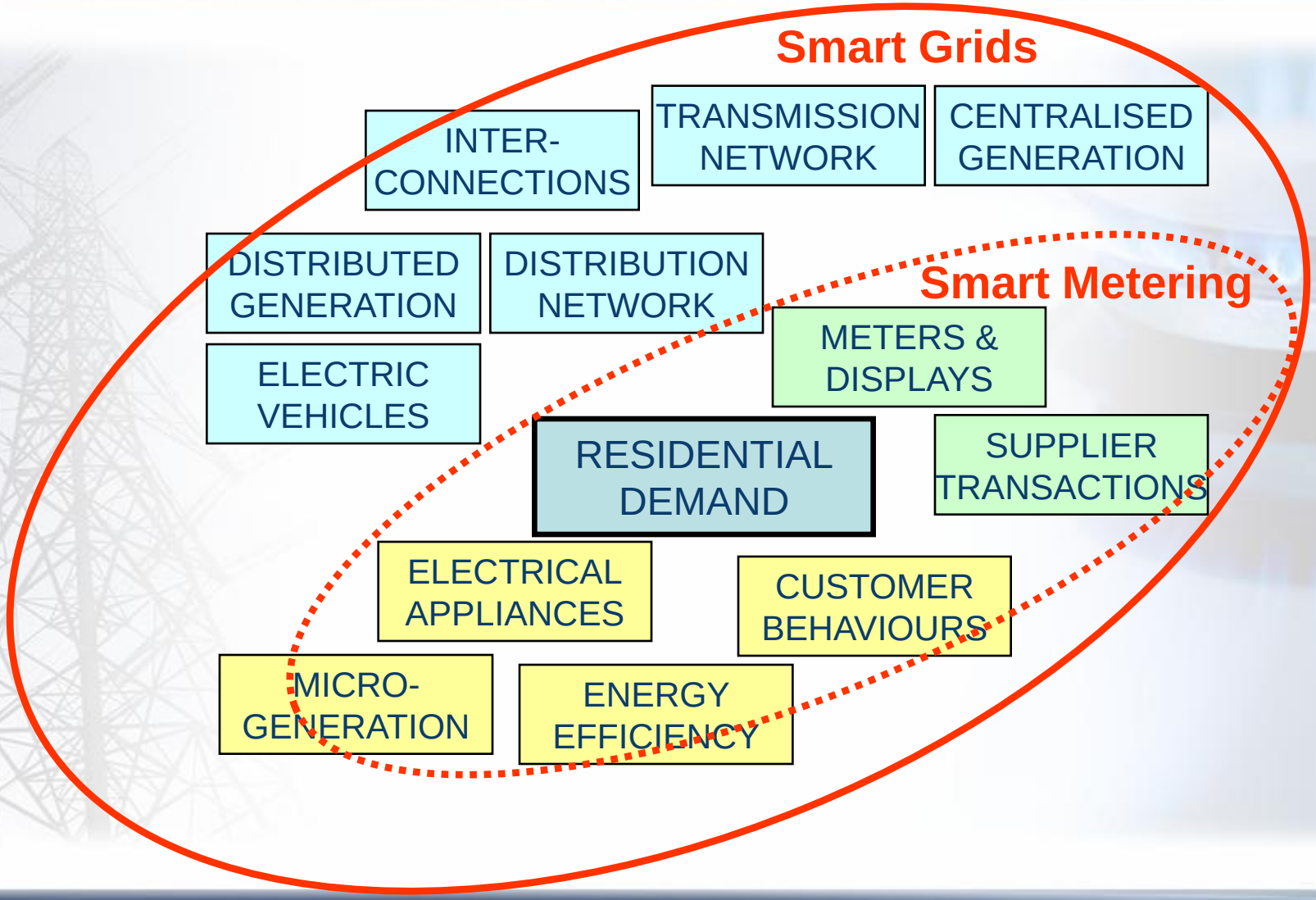
ERGEG position paper on Smart Grids

- **Consulted publicly in Dec 2009–March 2010**
- **ERGEG's understanding of Smart Grids** (adjusted from the definition by the SmartGrids European Technology Platform)**:**

  Smart Grid is an electricity network that can cost efficiently integrate the behaviour and actions of all users connected to it – generators, consumers and those that do both – in order to ensure economically efficient, sustainable power system with low losses and high levels of quality and security of supply and safety.

- **Not only distribution networks, it comprises transmission**
- **Scope of smart grids is much larger than smart metering**

Elements of Smart grids and Smart metering



Commission Smart grid Task Force

- **European Commission (DG ENER) established a Smart Grid Task Force in Nov 2009, to provide advice on policy and regulatory directions at European level and to coordinate the first steps towards implementation:**
  - **Expert Group 1.**
    Functionalities for smart grids (work only beginning) **and smart meters** (work advanced in European standardisation body)
  - **Expert Group 2.**
    Regulatory recommendations for data safety, data handling and data protection
  - **Expert Group 3.**
    Roles and responsibilities of actors involved in Smart Grids deployment
- **Parallel activities in the Commission (DG Research)**

Regulatory challenges

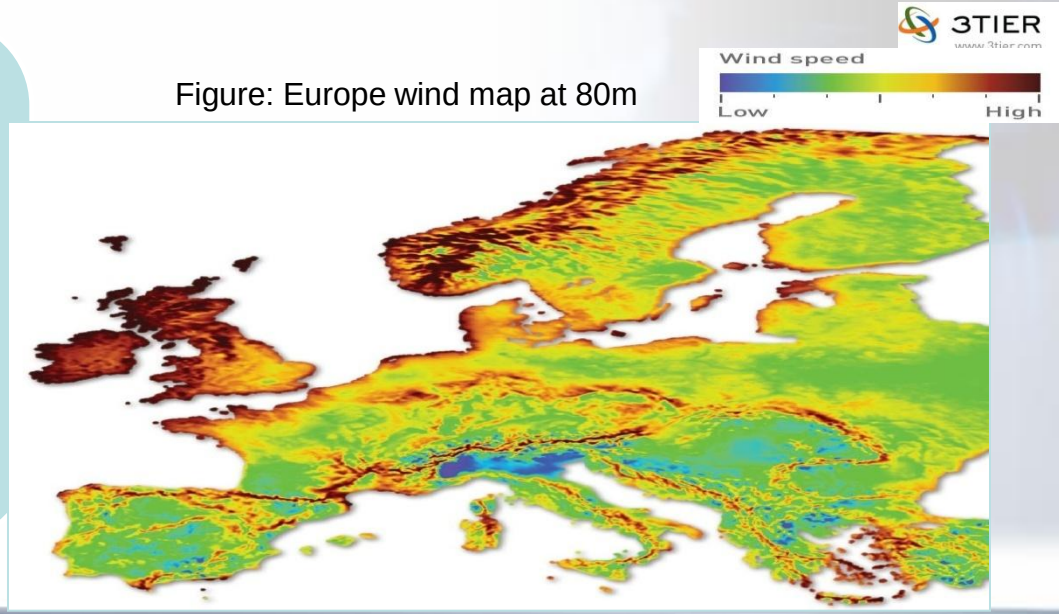
- **Keep a technology neutral perspective**
- **SG investment to provide better value and direct benefits for all grid users, and indirect benefits such as greater diversity for electricity system and society as a whole.**
- **Regulators to act as 'key facilitators' by identifying and removing possible barriers and by finding solutions that provide an appropriate balance between all stakeholders.**
- **Regulators to encourage an adequate level of innovation but also protect interests of consumers who will ultimately have to pay (no automatic cost pass-through for TSO demonstration projects, but case-by-case).**

Current CEER work: Wind integration

- **Regulators recognise that expected increases in electricity generation from wind, due to its intermittency, will give rise to issues for the market and network arrangements.**

In addressing these issues, CEER have published a consultation document which explores some of these issues….

Figure: Europe wind map at 80m



CEER wind integration Report

- **Report provides a review of how wind is treated among EU Member States**
- **CEER establishes that**
  - **explicit subsidies for wind generation, where required, should be separate from market and network arrangements;**
  - **market and network arrangements should encourage the integration of wind – and not present an undue barrier to its deployment; and**
  - **harmonisation (compatibility) should help – provided it does not amount to a barrier to wind.**

Market arrangements for wind

Gate-closure time

- Valid reasons for long GCT?

Cross-border integration

- Helpful to consider the importance of intra-day markets, alongside day-ahead

Balancing and reserves

- Where appropriate, wind's incentives to balance should be equally as strong as conventional generation;
- Cross-border balancing will be increasingly valuable

Since wind generation is better predictable closer to real-time, market arrangements should encourage the integration of wind generation into the market.

Network arrangements for wind

No undue discrimination

- How can we ensure differences do not distort incentives in locating – uniform charging regime?

Appropriate allocation of risk?

- Can cost-reflective charging, which provides incentive to locate in most appropriate location, allocate the risk?
- How can we encourage TSOs to take increased risk and innovate in developing the network?

Network development

- What role should the 10-year network development plan play in facilitating wind generation?
- How can we encourage government to speed-up the authorisation process?

A European 'Supergrid'?

For the future – A pan-European offshore grid, connecting wind farms and Member States…?

Issues for consideration include:

Who pays
- And who benefits?

Impact of distortions
- Different market and network framework

Different regimes
- For interconnection and transmission

Ownership of offshore grid
- Generator versus TSO

Regulators have a responsibility to consider these issues – Governments must also consider compatibility of support schemes.

Next steps

DEC ‘09	• Publish consultation document
Feb	• Workshop to discuss issues – Brussels.
11 Feb	• Public consultation closes
Q2 ‘10	• CEER Conclusions paper • Depending on above, findings could feed into our work on other areas, such as framework GLs, the network development plan, smart grids and smart meters.

Thank you for your attention!

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