INTERNATIONAL WORKSHOP ON ADVANCED REACTOR SYSTEMS AND FUTURE ENERGY MARKET NEEDS

Session 2. Electricity markets

Alain Janssens
EURELECTRIC, Vice Chair of the Markets Committee

Wednesday 12 April 2017, 10.45-11.45

OECD Conference Centre
The “New Electricity Market Design” requires a strong interlinkage between several legislative proposals.

**WHOLESALE MARKETS**
- General rules for the wholesale market
- Integration of Renewables
- Network Access and congestion management
- Resource adequacy, capacity mechanisms
- Roles of TSO & DSO
- Regional Cooperation
- Network Codes and guidelines
- Third Country Participation

**RETAIL MARKETS & CONSUMERS**
- Active customers (including, Self-generation and energy communities)
- Billing, Retail pricing & Dynamic pricing
- Disclosure of Energy Sources
- Tasks of DSO
- Electromobility
- Storage ownership

**SECURITY OF SUPPLY**
- Methodology for adequacy assessments
- Risk Preparedness Plan
- Electricity Crisis Situations
- Evaluation and Monitoring
- Regional Cooperation

---

**Diagram:**
- The new electricity market design
  - Electricity Market Regulation
  - Electricity Market Directive
  - Risk Preparedness Regulation
  - RED II Governance ACER
Clean Energy Package sets key principles for well-functioning short-term markets

Key principles for integrated forward, intraday, day-ahead markets

Some market distortions are removed
e.g. exit low price caps and allow scarcity pricing

RES
Key principles for market integration
Balancing responsibility
Priority dispatch and re-dispatch
Congestion management & curtailment

Regional system operation
Step-wise approach to RSO
More efficient use of the existing electricity infrastructure based on a non-discrimination congestion management
Well-functioning market design should value three key products to enable the Energy Transition:

- **Energy**
  - Selling KWh

- **Flexibility**
  - Adjusting to short-term variations

- **Capacity (availability)**
  - Firm capacity for security of supply

**Markets:**

- Forward, day-ahead, intraday markets
- Day-ahead, intraday, balancing markets, ancillary services
- Market-based capacity mechanisms where relevant
....But it is far from being an issue of wholesale markets only

Increasing penetration of (subsidized) renewables and decentralization/prosumers create other challenges downstream

Despite decreasing wholesale prices, the electricity bill for consumers has increased in Europe due to:

- Surcharges related to RES support schemes
- Increased grid costs, but DSO’s squeezed by net metering

**Evolution the electricity invoice in Europe: 2008-2014**

- Decrease of support ...
- ... but new RES targets
- Need to remove net metering
- Introduce capacity term?

Source: Eurelectric (2014)
Decarbonisation and decentralisation: need to unlock flexibility resources

- STORAGE
- DEMAND & SUPPLY BALANCE
  CONGESTION MANAGEMENT
- DEMAND SIDE FLEXIBILITY
- FLEXIBLE RES
- FLEXIBLE “TRADITIONAL” PLANTS
Over half of the EU’s generated power in 2015 came from low carbon sources and the share of renewables in the power mix continues to rise.
The European power sector is undergoing radical change. Renewable energy sources, distributed generation and demand response are playing an increasing role in the power system.

Reduced demand, rapid increase in variable RES with low variable cost, and a drop in the wholesale electricity prices, has affected the business case for power generation, whether new or existing.

In this new energy system, decentralised and centralised large-scale systems will depend on each other.

Nuclear power can play an important role in solving the challenges of this new, more diverse, energy system, providing the reliable baseload supply necessary to ensure generation adequacy.
Ensuring nuclear power’s contribution to Europe’s energy transition

Key messages

- Nuclear energy contributes to the three major energy policy objectives of the European Union: **security of supply, decarbonisation** and **competitive energy prices** in Europe.
- Therefore, a continuing contribution of nuclear power should be part of Europe’s low-carbon energy transition, and this will need a **more positive EU policy framework**.
- Investor confidence through price signals that reflect long-term needs and policy objectives, require a **market-based environment** and a strengthened, well-functioning **ETS system**, which are key elements to trigger investments in low-carbon generation technologies, including nuclear power generation.
eurelectric
ELECTRICITY FOR EUROPE