Implementation of electricity network codes in the Energy Community
Vienna, 25/04/2017
Electricity Network Codes

3rd Package Network Codes

- **Connection Codes**
  - Requirements for Generators (RFG)
  - Demand Connection Code (DCC)
  - HVDC Connections (HVDC)

- **Market Codes**
  - Capacity Allocation & Congestion Management (CACM)
  - Forward Capacity Allocation (FCA)
  - Balancing Network Code (EB)

- **Operational Codes**
  - Operational Security (OS)
  - Operational Planning & Scheduling (OPS)
  - Load Frequency Control and Reserves (LFCR)

- **System Operation** (SO)
- **Emergency and Restoration** (ER)
## Connection Network Codes

- Lay down requirements for grid connection to the interconnected system, of NEW:

### RfG

**Power-generating facilities:**
- Synchronous modules
- Power park modules
- Offshore modules

### DCC

**Demand facilities or units**
- Transmission-connected demand facilities
- Transmission-connected distribution facilities
- Distribution systems, including closed distribution systems
- Demand units (used to provide demand response services to system operators)

### HVDC

**HVDC facilities**
- HVDC-connected systems
- DC-connected power park modules
Connection Network Codes

- **Also aimed to:**
  - Ensure fair **conditions of competition** in the internal electricity market
  - Ensure **system security**
  - Ensure the **integration of renewable electricity sources**
  - Facilitate Union-wide **trade in electricity**
  - Make **appropriate use of the facilities’ capabilities** in a transparent and non-discriminatory manner
  - Provide a **level playing field** throughout the Union

- **Not applicable for:**
  - **Islands of Member States** of which the systems are not operated synchronously
  - **Temporary or backup devices** operating in parallel mode (under specified conditions)
  - **Storage devices** except pump-storage modules (under specified conditions)
Connection Network Codes

- **Implementation** aspects:
  - **Entered into force** *(published)*:
    - RfG
      - 27 April 2016
    - DCC
      - 18 August 2016
    - HVDC
      - 8 September 2016
  - **Guidance** on implementation – non-binding, ENTSO-E to prepare **6 months** after entry into force
  - **Monitoring** of implementation – according to Articles 8 and 8 of Regulation EC 714/2009 – performed by ENTSO-E, data submitted by the TSO, ACER to prepare a list of relevant data **12 months** after entry into force
  - **Derogations** – granted by NRA (or other authority) upon request from the facility operator or TSO, NRA to publish criteria and procedure **9 months** after entry into force (subject to a review by the EC) and maintain a Register of derogations, ACER to monitor the derogations
  - **Application to existing facilities** – under specified conditions and upon proposal by the TSO and NRA decision – based on cost-benefit analysis
  - **Compliance** – assessed by the NRA, including testing and simulation of the compliance criteria based on specified procedures (disconnection and reconnection)
Connection Network Codes

- **Connection (technical) requirements:**
  - **Exhaustive requirements** – fully defined in the NCs - no further national specification needed
  - **Non-exhaustive requirements** – NCs do not contain all the information necessary to apply the requirement immediately and needs further specification at national level – amending technical regulations (national grid codes) may be required
    - *project specific* non-exhaustive requirements
    - non-exhaustive requirements at a **synchronous system** or **national level**
  - **Interrelated requirements** – HVDC heavily relies on RfG technical requirements
  - Typical technical requirements:
    - **Frequency** (deviation) requirements
    - **Voltage** (deviation) requirements
    - **Short circuit** requirements
    - **Power** requirements (active, reactive)
    - Protection and control
    - Information exchange (notifications)
  - Specific requirements (e.g. subsynchronous torsional interaction damping capability of HVDC)
Proposal for Energy Community

Requirements for adaptation:

- **Standard adaption** – (EU → Energy Community, EC → ECS, Member State → Contracting Party)

- **Special requirements for MD, UA, and GE (proposals)**
  
  • exemption of non-synchronous networks / islands – (reference to Continental Europe synchronous area)
  
  • application of “agreed European standards and technical specifications” – (on national level)

- **No duplication of already imposed obligations to EU authorities (EC, ENTSO-E, ACER) or MSs**

- **References to ENTSO-E and ACER in agreed format**

- **Adapted reference for entry into force, no adjustment of embedded deadlines and stipulated procedures**

- **No general adjustment of the specified technical requirements**

- **Reference to general EU law (e.g. confidentiality) – reference to corresponding national law**

- **Reference to the Third Package acquis and TYNDP – applied “as adapted by the EnC MC”**
Thank you for your attention!

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