Developments and impacts of new European energy regulation

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User Meeting Hydro Power Scheduling, 13 March 2019

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Clean Energy Package

making the EU electricity market fit for the challenges of the clean energy transition

better **more**

connected

protected against black-outs

able to **integrate renewables**

market-based

consumer-oriented

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Clean Energy Package, overview

- **Energy Performance in Buildings Directive**
- **Renewable Energy Directive**
- **Energy Efficiency Directive**
- **Governance Regulation**
- **Electricity Directive**
- **Electricity Regulation**
- **Risk-Preparedness Regulation**
- **Regulation for the Agency for the Cooperation of Energy Regulators (ACER)**

https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans

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Status as of 1 January 2019

	European Commission Proposal	EU Inter-institutional Negotiations	European Parliament Adoption	Council Adoption
Energy Performance in Buildings	30/11/2016	Political Agreement	17/04/2018	14/05/2018
Renewable Energy	30/11/2016	Political Agreement	13/11/2018	04/12/2008
Energy Efficiency	30/11/2016	Political Agreement	13/11/2018	04/12/2018
Governance	30/11/2016	Political Agreement	13/11/2018	04/12/2018
Electricity Regulation	30/11/2016	Political Agreement	Pending	Pending
Electricity Directive	30/11/2016	Political Agreement	Pending	Pending
Risk Preparedness	30/11/2016	Political Agreement	Pending	Pending
ACER	30/11/2016	Political Agreement	Pending	Pending

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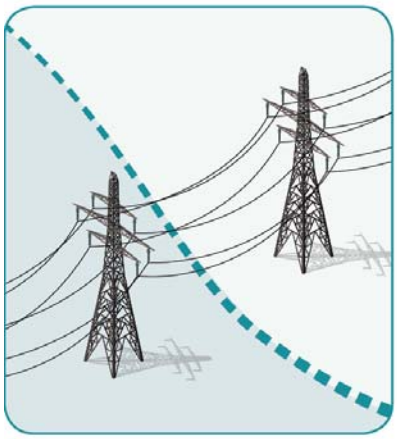
Intended impacts



- allowing **electricity to move freely** throughout the EU energy market through cross-border trade, more competition and better regional cooperation;
- enabling **more flexibility** to accommodate an increasing share of renewable energy in the electricity grid;
- **fostering more market-based investments** in the sector, while **decarbonising** the EU energy system;
- introducing a **new emissions limit for power plants** eligible to receive subsidies;
- improving planning to **anticipate and respond to electricity market crisis situations**, including through cross-border cooperation.

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Wholesale market design

Boost wholesale market **flexibility** and provide **clear price signals** to facilitate the continuing penetration of renewable energies and ensure investments

Enable **active consumer participation** and ensure that **consumers are protected and benefit** from progress in energy technologies

Promote **regional cooperation** and provide a true **European dimension to security of supply**

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Diving deeper in the Regulation

- Balancing
- Bidding limits
- Capacity allocation and congestion management
- Use of congestion income
- Cross border participation in capacity mechanisms
- Regional Coordination Centres
- EU DSO entity

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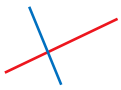
Setting the scene – Article 3



Encourage free price formation

Facilitate the development of more flexible and sustainable low carbon generation, and flexible demand

Empower customers to act as participant in energy market

Enabling small market participants through aggregation

long-term investments for a sustainable electricity system, energy storage, energy efficiency, demand response

Remove barriers to cross border participation

Enable the efficient dispatch of generation assets, energy storage and demand response

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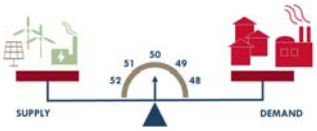
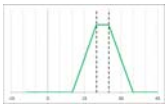
Balancing – Guideline on Electriticy Balancing
(3rd package, 2009)

- Balancing Service Providers and Balance Responsible Parties
- European platforms for exchange of
  - Replacement Reserves (RR, so far not in Nordic system)
  - Frequency Restoration Reserves
    - Manual – mFRR
    - Automatic – aFRR
- Standard Products
- 15 minute Imbalance Settlement Period
  - From December 2020
- Imbalance price





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CEP Art 5 - Balancing

- All market participants responsible for imbalances they cause
  - Derogations for small renewable generators 400 → 200 kW (++)
- Price of balancing energy shall not be pre-determined in a contract for balancing capacity
- Marginal pricing (unless …)
- TSOs procure balancing capacity
  - May be facilitated on a regional level
  - Reservation of cross-border capacity may be limited
  - Separate for up- and downward
  - Procurement of balancing capacity not longer than one day before
    - Unless… But at least 40 (30) % day-ahead, remainder < 1 month
- Publish imbalance price < 30 minutes after real time
  - Cf. proactive vs. reactive balancing & grid constraints

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Art 9, technical bidding limits

No maximum and no minimum limit of the wholesale electricity price.

- Applies to bidding and clearing in all timeframes
- Without prejudice to the technical price limits

Transparent mechanism to automatically adjust limits when expected to be reached

Technical price limits on clearing prices sufficiently high, harmonized and take into account Value of Lost Load

Art 13, Bidding zone review

- Bidding zones shall not contain long-term structural congestions
  - unless they have no impact, or etc. etc.
  - maximise economic efficiency and cross-border trading opportunities while maintaining security of supply
- Reporting and bidding zone review every three years
  - methodology based on structural congestions which are not expected to be overcome within the next three years, taking due account of tangible progress on infrastructure development projects, that are expected to be realised within the next three years.
- If structural congestion *within* bidding zone
  - Define national or multinational action plans
    - reduce the structural congestions no later than years after the decision to define an action plan
    - Yearly increase of cross-border capacities up to benchmark of 70 % in 2025
  - Or: review bidding zone configuration

Art 14, General principles of capacity allocation and congestion management

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- TSOs shall not limit interconnection capacity to solve congestion inside their own bidding zone or as a means of managing flows resulting from internal transactions.
- Complied with if with following minimum levels :
  - NTC: 70% of the capacity respecting operational security limits taking into account contingencies
  - Flow-based: 70% of the capacity respecting operational security limits of internal and cross-zonal critical network elements and taking into account contingencies
  - Values to be reached by 2025
- The total amount of 30% can be used for the reliability margins, loop flows and internal flows on each critical network element.
- Temporary derogations possible
- Cost sharing between TSOs: polluter pays principle

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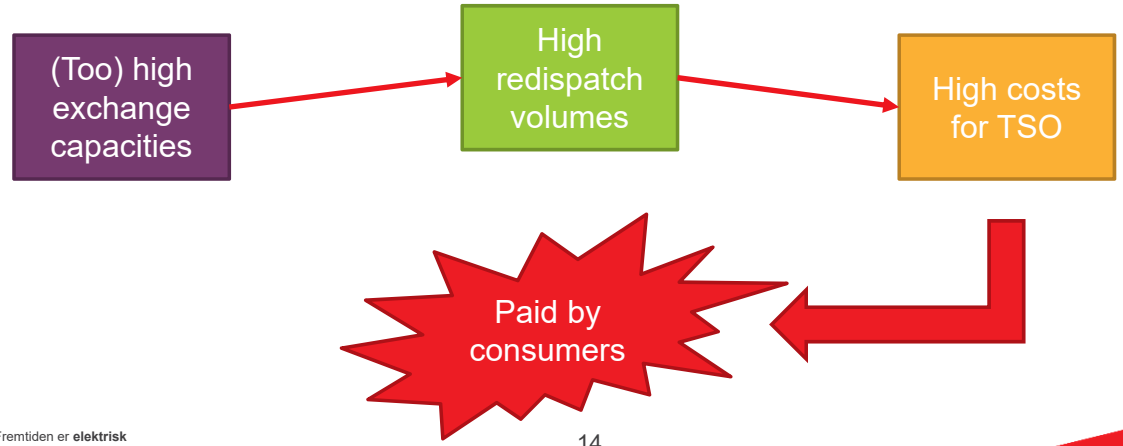
Minimum capacities

- It all sounds very nice, but…
  - Who benefits?



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Art 17, congestion income

- Use of congestion income:
  1. guaranteeing the availability of the allocated capacity; or
  2. maintaining or increasing interconnection capacities through optimisation of the usage of existing interconnectors; or
  3. covering costs of investments to reduce interconnector congestion.
- If above "adequately fulfilled" → reduce network tariffs

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Art 21, cross border participation in capacity mechanisms

- Mechanisms [ ] shall be open to direct cross-border participation of capacity providers located in another Member State
- In the case of capacity mechanisms in operation as of the [date of entry into force], Member States may allow direct participation [ ] of interconnectors as foreign capacity for a maximum of four/two years
- Cross-border participation in capacity mechanisms shall not impact cross-zonal physical flows between Member States
- The transmission system operator where the foreign capacity is located shall:
  a) verify technical performance and register capacity provider in registry
  b) carry out availability checks;
  c) be notified by capacity provider about participation in foreign capacity mechanism;
  d) notify TSO applying the capacity mechanism about c)

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Cross border participation in Cap Mech

- Important for Norway
  - Cap Mech reduce price level and price volatility
  - Therefore also value of interconnectors in energy market
- UK has Cap Mech
  - Norway participation agreement
    - But what about Brexit?
- Potential impacts if Sweden, Germany, Netherlands create Cap Mech
  - Not very probable in short term

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Art 34: Regional Coordination Centres

- coordinated capacity calculation
- coordinated security analysis
- creation of common grid models
- support the consistency assessment of TSOs' defense restoration plans
- regional short term system adequacy forecasts
- regional outage planning coordination
- support the coordination and optimization of regional restoration
- post-operation and post-disturbances analysis and reporting
- regional sizing of reserve capacity
- facilitate the regional procurement of balancing capacity
- Etc.

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Art 49: establishment of EU DSO entity

- Art 51, tasks
  - promoting operation and planning of distribution networks
  - facilitating the integration of renewable energy resources, distributed generation and other resources
  - facilitating demand side flexibility and response
  - contributing to the digitalisation of distribution systems
  - participating in the elaboration of network codes for distr. grids
  - cooperate with ENTSO-E on
    - monitoring of implementation of the network codes relevant for DSOs
    - coordinated operation and planning of T & D systems

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Conclusions CEP Electricity Regulation

- Comprehensive rules
- Positive focus on market and competition
- Many compromises
- Expect more bureaucracy