Electricity market framework & RES integration

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The market we aiming for ...

Affordability?

Security of supply

Integrated & efficient market

Competitive

Sustainable
Competition

- Efficient market mechanisms / clear framework / institutions
- Level playing field
- Transparent and non-discriminatory third party access
- Self-dispatch
- Bilateral trading combined with organized markets
- Price formation based on supply and demand interplay
  - Scarcity should result in price spikes
- Scheduling and balancing responsibility for all participants
- Transparency and integrity regime
Market under different designs

Importance of cross-zonal capacity
High system operation costs (redispatch)
Higher competition
Loop flows

Understanding the system constraints for each node
Low system operation costs
Low competition
No loop flows

Understanding the system constraints for each node, and how they impact cross-zonal capacity
Low system operation costs, but still some countertrading necessary
Competition only on zonal level
Cross-zonal market

Forward cross-border capacity products

Spot cross-border capacity+energy products

Cross-border Balancing (TSO-TSO)

Forward Market (Long term Physical/Financial rights)

Monthly (M+1)

Yearly (Y+n)

Day Ahead Market

Intraday implicit

Delivery of Long term and Day ahead allocated rights

Intraday market

Balancing

Delivery of intraday

Delivery of Long term and Day ahead allocated rights

Real-time reserve activation, re-dispatch, countertrading...

Allocation of forward rights on long-term basis through auctions as PTRs or FTR (tradable rights with UIOSI). Single allocation office for capacity allocation.

Price coupling - auction mechanism managed by PXs with capacity module. Flow-based or NTC-based.

Countinuous mechanisms with complementary auctions (PXs+capacity) Flow-based or NTC-based

Exchnage of balancing products offered by MPs
Sustainability

- Environment – LCPD / EID
- Pricing externalities (carbon price / tax)
- Energy efficiency
- **Supporting deployment of RES**
- Coal phase out
- Integration of energy and climate plan / strategies
- Decentralization & digitalization
Framework for supporting RES deployment (1)

Existing *acquis*

Third Energy Package (R=0; D=12)
- A market to support RES goals
- Priority dispatch
- NRAs’ support

RES support Directive 2009/28/EC
- Key framework to support RES – setting the national targets
- Introduction of support schemes
- Share of RES includes: electricity consumption, H&C and transport
- Priority access, or
- Guaranteed access
- Minimise curtailments

Acquis to come (applicable in EU)

Clean Energy Package (R=42; D=30)
- A market to support RES goals – decarbonisation, decentralised, reward flexibility, storage, innovations, decentralisation
- NRAs’ support
- New services for consumers – aggregation of demand and supply
- Market-based remuneration of RES
- Priority dispatch – from small facilities
- BRP > 400kV (200kV as of 2026) and with approved State aid
- BRP once functional intraday/balancing market in place
- Trading products for RES - bid size 0.5 MW
  - 15min from 2021 (in scheduling area)
  - 30min from 2025 (in synch. area)
- Guaranteed network availability for RES (limited redispatch max5% of the RES generation) / zero for self-generated electricity
Framework for supporting RES deployment (2)

*Acquis* to come (applicable in EU)


- Key framework to support RES – setting the national targets 2030
- Support schemes – that increase integration of RES; market based and market-responsive way
  - Market premium (sliding or fixed)
- Support of small-scale installations
- Share of RES includes: electricity consumption, H&C and transport
- Renewables self-consumptions – store and sell excess
Electricity market: issues & challenges (1)

Make RES support market-compatible
- RES sell in the market
  - (RES Directive)
- RES balancing responsibility
  - (Elec Regulation)
- Limit priority dispatch
  - (Elec Regulation)

Make markets fit for RES
- RES-friendly short term markets
  - Min bid size
  - Gate closure time
  - Imbalance settlement period
  - One-way balancing procurement
    - (Elec Regulation)
- Integrated short term markets
  - Day-ahead and intraday market coupling
  - Cross-border sizing and procurement of reserves
  - Cross-border capacity calculation
    - (Elec Regulation)

Allow prices to reflect (locational and time) scarcity
- Remove price caps
  - (Elec Regulation)
- Bidding zone definition
  - (Elec Regulation)
Grid management: issues & challenges (2)

- **Manage congestion**
  - Clarify curtailment / redispatch rules
    - (RES Directive)
  - Bidding zone definition
    - (Elec Regulation)

- **Make full use of cross-border transmission capacity**
  - Cross-border capacity calculation
    - (Elec Regulation)
  - Regional coordination centers
    - (Elec Regulation)
  - Use of congestion rents
    - (Elec Regulation)

- **Reap benefits of distributed generation**
  - Clarify self-consumption rules
    - (RES Directive and Elec Directive)
  - Empower consumers
    - Right to dynamic price contracts
    - Right to a smart meter
    - (Elec Directive)

- **Update DSO function**
  - DSO to procure local flexibility
    - (Elec Directive)
  - DSO as neutral market facilitators
    - No storage ownership
    - Data management
    - (Elec Directive)
Adequacy: issues & challenges (2)

Allow prices to reflect (locational and time) scarcity

- Remove price caps
  *(Elec Regulation)*

- Bidding zone definition
  *(Elec Regulation)*

Where needed, design smart capacity mechanisms

- Based on an **EU-wide adequacy assessment**
- Technology neutral
- Open to **cross-border participation**
- Compatible with **decarbonisation**
# Contracting Parties ID national markets: ECRB report

**TABLE 1: Close of day-ahead & opening of intraday national market**

<table>
<thead>
<tr>
<th>Contracting Party</th>
<th>GCT of the D-1 market</th>
<th>Is ID market allowed after D-1 GCT? GOT for ID?</th>
<th>GCT of the ID market</th>
<th>Centralised platform in place for exchanging electricity on ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>D-1, 14:00</td>
<td>Yes</td>
<td>H-1</td>
<td>No</td>
</tr>
<tr>
<td>BiH</td>
<td>D-1, 15:30</td>
<td>Yes, ID opens from D-1, 18:00</td>
<td>H-1</td>
<td>No</td>
</tr>
<tr>
<td>GE</td>
<td>No ID market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS*</td>
<td>D-1, 13:00</td>
<td>Yes, ID opens after D-1 GCT</td>
<td>H-2</td>
<td>No</td>
</tr>
<tr>
<td>MK</td>
<td>D-1, 15:45</td>
<td>Yes, ID opens from D-1, 18:00</td>
<td>H-1</td>
<td>Yes, MEPSO’s MMS</td>
</tr>
<tr>
<td>MD</td>
<td>No ID market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MN</td>
<td>D-1, 18:00</td>
<td>Yes</td>
<td>H-1</td>
<td>No</td>
</tr>
<tr>
<td>RS</td>
<td>D-1, 14:30</td>
<td>Yes, ID opens from D-1, 18:00</td>
<td>H-1</td>
<td>No</td>
</tr>
<tr>
<td>UA</td>
<td>No ID market</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Contracting Parties ID x-border markets: ECRB report

### TABLE 2: Access to cross-zonal capacity

<table>
<thead>
<tr>
<th>Contracting Party</th>
<th>GCT of the D-1 cross-zonal nominations</th>
<th>ID capacity allocation</th>
<th>GOT and GCT for ID cross-zonal allocation?</th>
<th>Allocation mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>D-1, 14:00</td>
<td>Only on borders with MN and Greece</td>
<td>GOT: D-1, 18:00 GCT: H-1</td>
<td>AL-MN: Continuous FCFS (no price) AL-GR: Auctions and auction price are applied</td>
</tr>
<tr>
<td>BiH</td>
<td>D-1, 15:30</td>
<td>Yes, all border</td>
<td>GOT: D-1, 18:00 GCT: H-1</td>
<td>Continuous FCFS No price</td>
</tr>
<tr>
<td>GE</td>
<td>No ID cross-zonal access</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS*</td>
<td>See footnote 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MK</td>
<td>D-1, 15:45</td>
<td>Only on the border with RS&amp;KS zone</td>
<td>GOT: D-1, 18:00 GCT: H-2</td>
<td>Continuous FCFS No price</td>
</tr>
<tr>
<td>MD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MN</td>
<td>D-1, 14:30</td>
<td>Yes, all borders</td>
<td>GOT: D-1, 18:00 GCT: H-1</td>
<td>Continuous FCFS No price</td>
</tr>
<tr>
<td></td>
<td>Exception for MN-AL: D-1, 14:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>D-1, 15:30</td>
<td>Yes, except on the border with Bulgaria</td>
<td>GOT: D-1, 18:00 GCT: H-1 GCT: H-3 for auctions</td>
<td>Continuous FCFS No price RS-Romania: Four auctions per day and auction price is applied</td>
</tr>
<tr>
<td>UA</td>
<td>No ID cross-zonal access</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Thank You!

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