



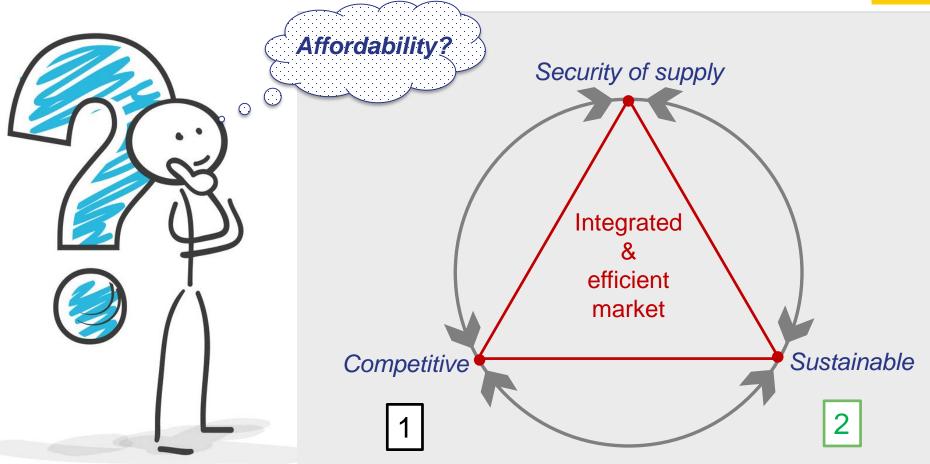
# **Electricity market framework & RES integration**

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### The market we aiming for ...





## 1 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

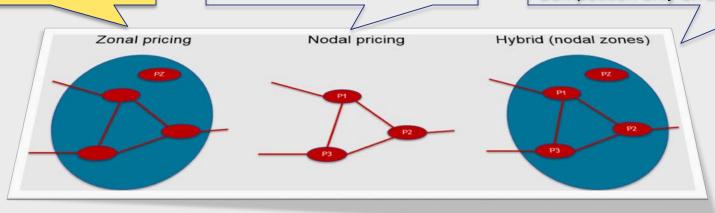
Low competition

No loop flows

Understanding the system constraints for each node, and how they impact cross-zonal capacity

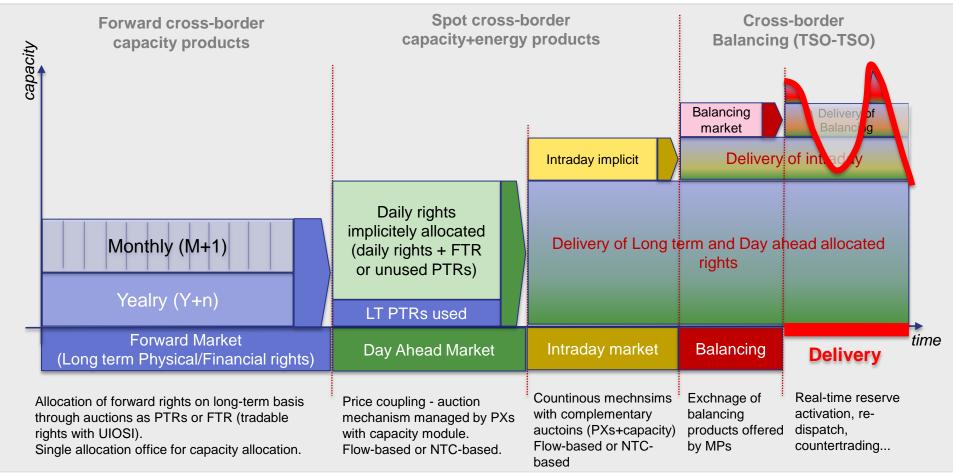
Low system operation costs, but still some countertrading necessary

Competition only on zonal level



#### Cross-zonal market





## 2

## 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)

RES support Directive 2018/2001

- Key framework to support RES setting the national targets 2030
- Support schemes that increase integration of RES; market based and marketresponsive 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 selfconsumption 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)

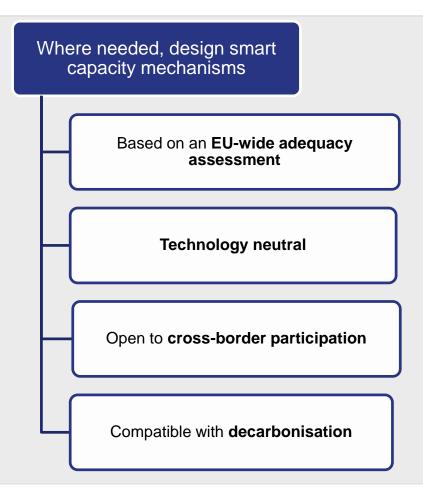
#### Adequacy: issues & challenges (2)



Allow prices to reflect (locational and time) scarcity

Remove price caps
(Elec Regulation)

Bidding zone definition
(Elec Regulation)



### Contracting Parties ID national markets: ECRB report



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

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

https://www.energy-community.org/dam/jcr:04ed1975-53ab-423b-b120-e01b12bc50c3/ECRB042019\_intraday.pdf

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



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

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



#### Thank You!

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