



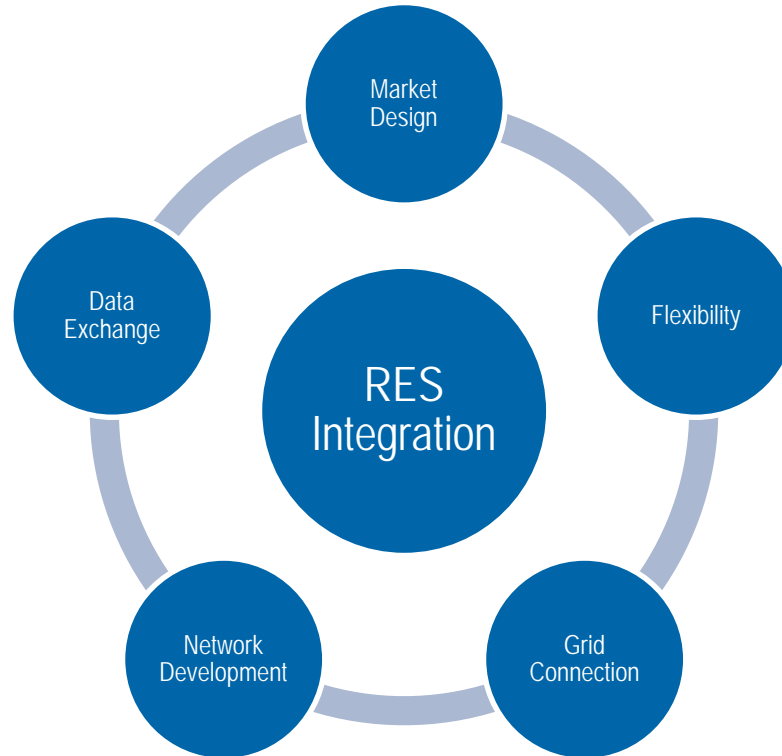
# Integration of RES in the Market / Regulatory Aspects

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# Regulatory Aspects

*A number of aspects have an impact on RES integration.*





## Network Development

- The integration of RES into the system needs to be duly considered when planning networks
    - More volatility in power flows
    - Higher share of generation on distribution level
    - Decommissioning of (thermal) power plants
  - TSOs and DSOs submit their network development plans to Regulatory Authorities
    - *“The development of a distribution system shall be based on a transparent network development plan that the distribution system operator shall publish at least every two years and shall submit to the regulatory authority. ... The network development plan shall also include the use of demand response, energy efficiency, energy storage facilities or other resources that the distribution system operator is to use **as an alternative to system expansion.**”* (Directive 2019/944, Article 32(3))
  - Subject to national legislation, Regulatory Authorities approve these network development plans
  - Two approaches observed:
    - Promotion of RES first and network development follows
    - Develop network first and then RES follows
- Ideally, the development of RES and network is done coordinated and ‘in parallel’



## Grid Connection

# Determination of Significance

*In turn determines requirements in terms of technical capabilities and data exchange.*

- Article 5 of Regulation 2016/631 (RfG NC) requires regulatory approval of the capacity threshold determining type B, C, and, D power-generating modules (PGM)
    - Requirements on technical capabilities for each generator type are defined in RfG NC
    - Threshold are proposed by TSOs and approved by Regulatory Authorities
- Defines significant grid users (SGUs)
- Linked to requirements on data exchange

Synchronous area	Limit for maximum capacity threshold from which a power-generating module is of type B	Limit for maximum capacity threshold from which a power-generating module is of type C	Limit for maximum capacity threshold from which a power-generating module is of type D
Continental Europe	1 MW	50 MW	75 MW
Great Britain	1 MW	50 MW	75 MW
Nordic	1,5 MW	10 MW	30 MW
Ireland and Northern Ireland	0,1 MW	5 MW	10 MW
Baltic	0,5 MW	10 MW	15 MW

Source: Table 1 of Regulation 2016/631



## Market Design

# Day-Ahead through Balancing

*Requirements from CEP need to be considered in implementation of market guidelines.*

- Implementation of the Third Energy Package is ongoing
    - Concerns Regulation 2009/714 and derived network codes and guidelines
    - Terms and Conditions or Methodologies pursuant to FCA GL, CACM GL and EB GL require approval of Regulatory Authorities/ACER
    - Regulatory Authorities/ACER are responsible for monitoring
  - Implementation of Clean Energy Package (CEP) has just started
    - Concerns mostly Regulation 2019/943 (Recast electricity regulation)
    - Minimum bid size of 500 kW or less
    - Imbalance settlement period (ISP) to be set to 15 minutes by 1 January 2021
    - Requirement on 15 minutes products in day-ahead timeframe by 1 January 2021
- To be considered when approving relevant terms and conditions and methodologies



- Gate closure time
  - Set to 60 minutes for cross-zonal allocation in ACER Decision 04/2018 (except for FI-EE at 30 minutes)
  - Call from market participants to reduce gate closure time
    - Discussions ongoing on interaction with balancing time frame
- Single intraday coupling (i.e. continuous trading) to be complemented by three intraday auctions
  - Defined in ACER Decision 01/2019
  - Auctions to take place at
    - 15:00 D-1 for all 24 market time units of day D;
    - 22:00 D-1 for all 24 market time units of day D, and;
    - 10:00 D for the 12 remaining market times units of day D
  - Main purpose is to price cross-zonal capacity in intraday timeframe
  - Products available at auctions still to be determined

- Intraday markets become 'intra-zonal' once cross-zonal intraday coupling has closed
- Gate closure times for intra-zonal trade generally shorter than for cross-zonal trade
- Generally lower liquidity on intra-zonal intraday markets close to real time as compared to cross-zonal intraday coupling
- Limited possibilities to balance portfolio in intraday
  - What incentives can be put in place to increase liquidity on intra-zonal intraday markets close to real time?



## Data Exchange

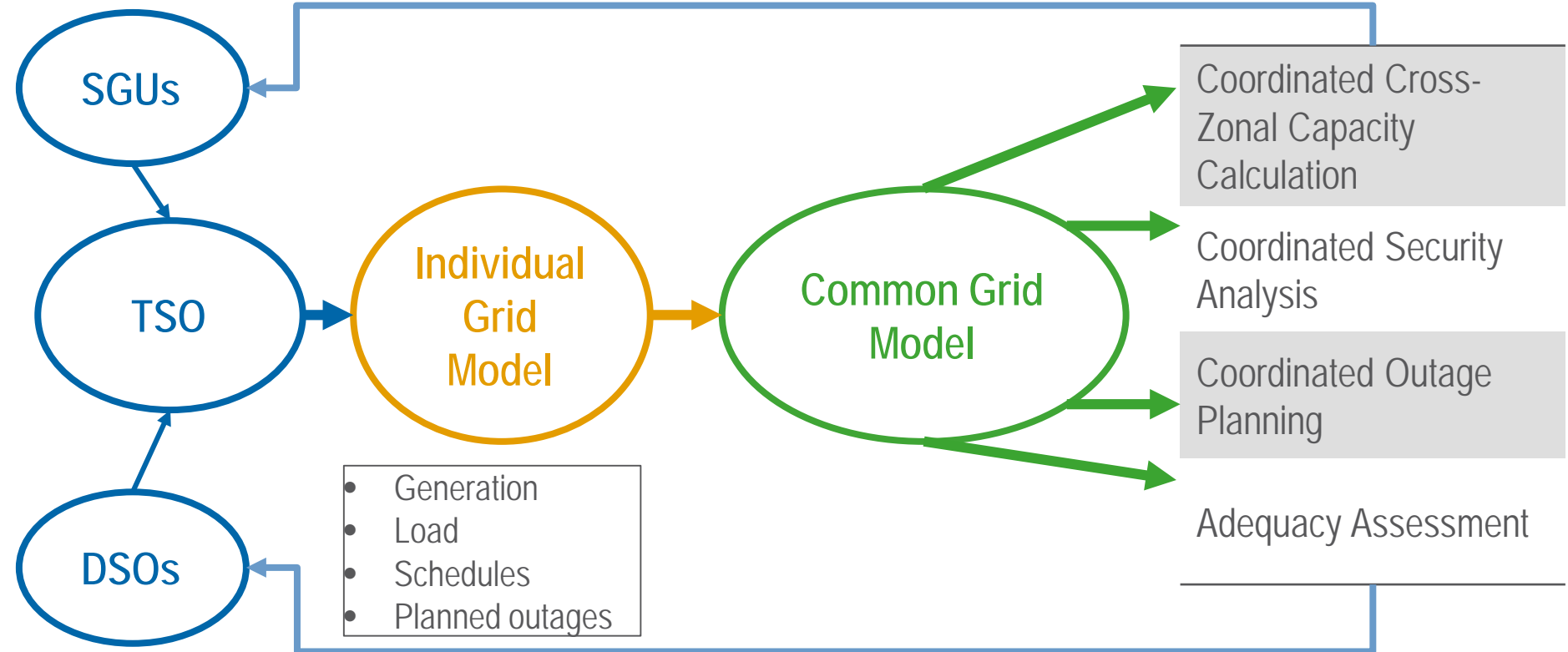
# Why Data Exchange?

*TSOs include data in individual grid models and for operational planning.*

- TSOs are obliged to create individual grid models based on data from DSOs and grid users
  - *'Generation and Load Data Provision'* pursuant to FCA GL and CACM GL for capacity calculation
  - Data to be included in the TSOs' individual grid models, which are merged into common grid model
  - Certain tasks from FCA GL, CACM GL and SO GL to be carried out on common grid model
- System Operations Guideline (SO GL; Regulation 2017/1485) holds requirements on data exchange
  - Article 40 ff
  - Among others, TSOs shall gather data on
    - Generation
    - Load
    - Schedules
    - Planned outages

# Why Data Exchange?

TSOs run coordinated processes and feed results back to SGUs and DSOs.



# Data Exchange - Who

*SO GL hold provisions on data exchange between network users and network operators.*

- **Article 40(6):**
    - Key organisational requirements, roles and responsibilities in relation to data exchange to be developed by all TSOs.
    - All Regulatory Authorities approved proposal in January 2019
    - Published on ENTSO-E website
- Defines who and how

# Data Exchange - What

*Per default, the full scope of data exchange as per SO GL applies.*

- Article 40(5):
  - Applicability and scope of data exchange can be 'reduced' on national level
  - TSO(s) work out proposal in coordination with DSOs and significant grid users (SGUs)
  - TSO submits a proposal to the relevant Regulatory Authorities for approval
    - Link to SGUs as per RfG NC
  - Data categories:
    - Structural data (Article 48)
    - Scheduling and forecast data (Article 49)
    - Real-time data (Articles 44, 47 and 50)
  - No clear deadline given in SO GL and not required
  - **Note: If no such proposal has been approved before 21 March 2019, the full extent of data exchange pursuant to SO GL applies!**



Flexibility



# Procurement of Flexibility

*Pilots of flexibility platforms are being tested. Combability with existing markets to be assessed.*

- Not entirely clear which entities can/should operate flexibility platforms
  - TSOs and/or DSOs?
  - Third Parties?
- Risk for cannibalisation among platforms vs. competition
  - More efficient to operate one centralised platform to pool liquidity?
- Unclear how such platforms interact with other markets both in terms of time-frame and incentives to use one over the other
  - Location of assets to be provided for flexibility products
- Need for regulation currently under discussion

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