



# European Marketplace for Decentralised Flexibility

EC DG Energy  
Brussels, 13<sup>th</sup> February 2020

Enno Böttcher, CEO

# Trends in the electricity sector ...

... e.g. roadmap of Nordic Council of Ministers and ENTSO-E vision on market design ...



Roadmap themes as of Nov. 2018 in Stockholm:

## 1. Market Development

new business models / services / market design / customer centred / price signals

## 2. Flexibility issues

Flexibility market / Sector coupling for flexibility / Balancing Market / increased electrification - flexibility support

## 3. Digitalisation Integration

Real-time data / open data / customer-owned data / SMART grid / meters / automatization (+pilots / forerunner) / digitalisation

## 4. Integration of renewables

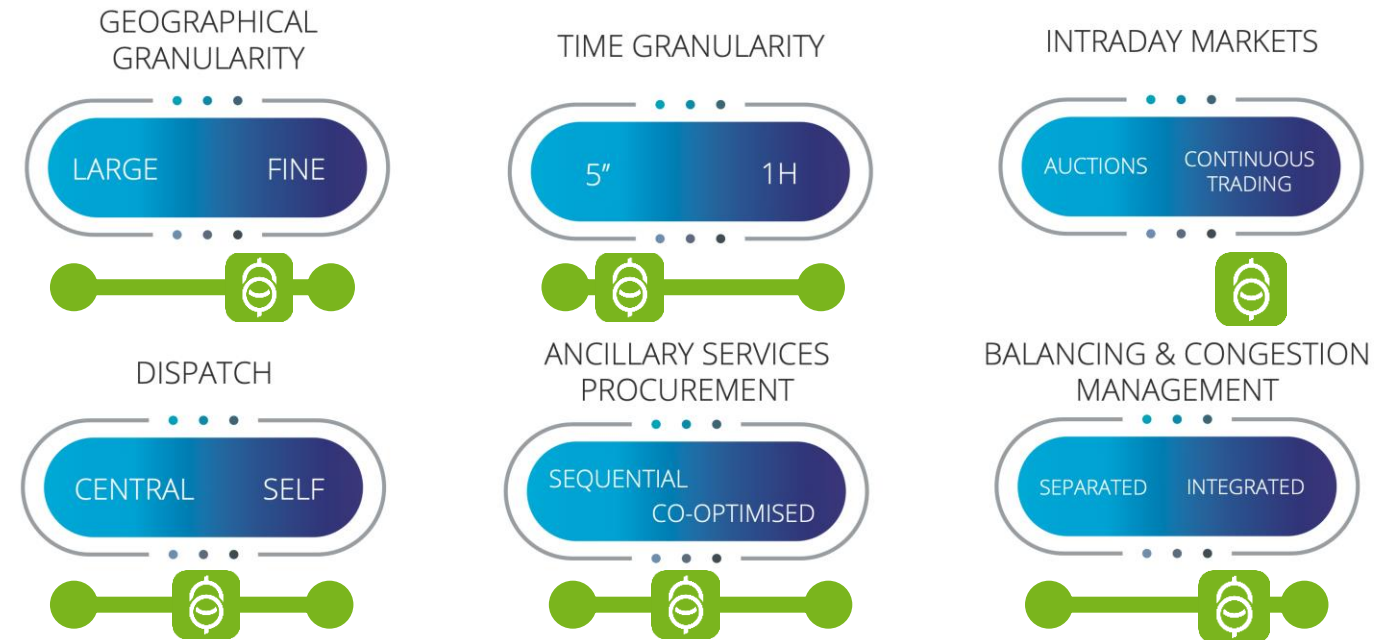
Carbon-neutral / Zero-carbon / increased electrification / environmental reasons

## 5. Harmonising with EU

Regulations, market- and grid development / harmonised Nordic standpoint on EU issues

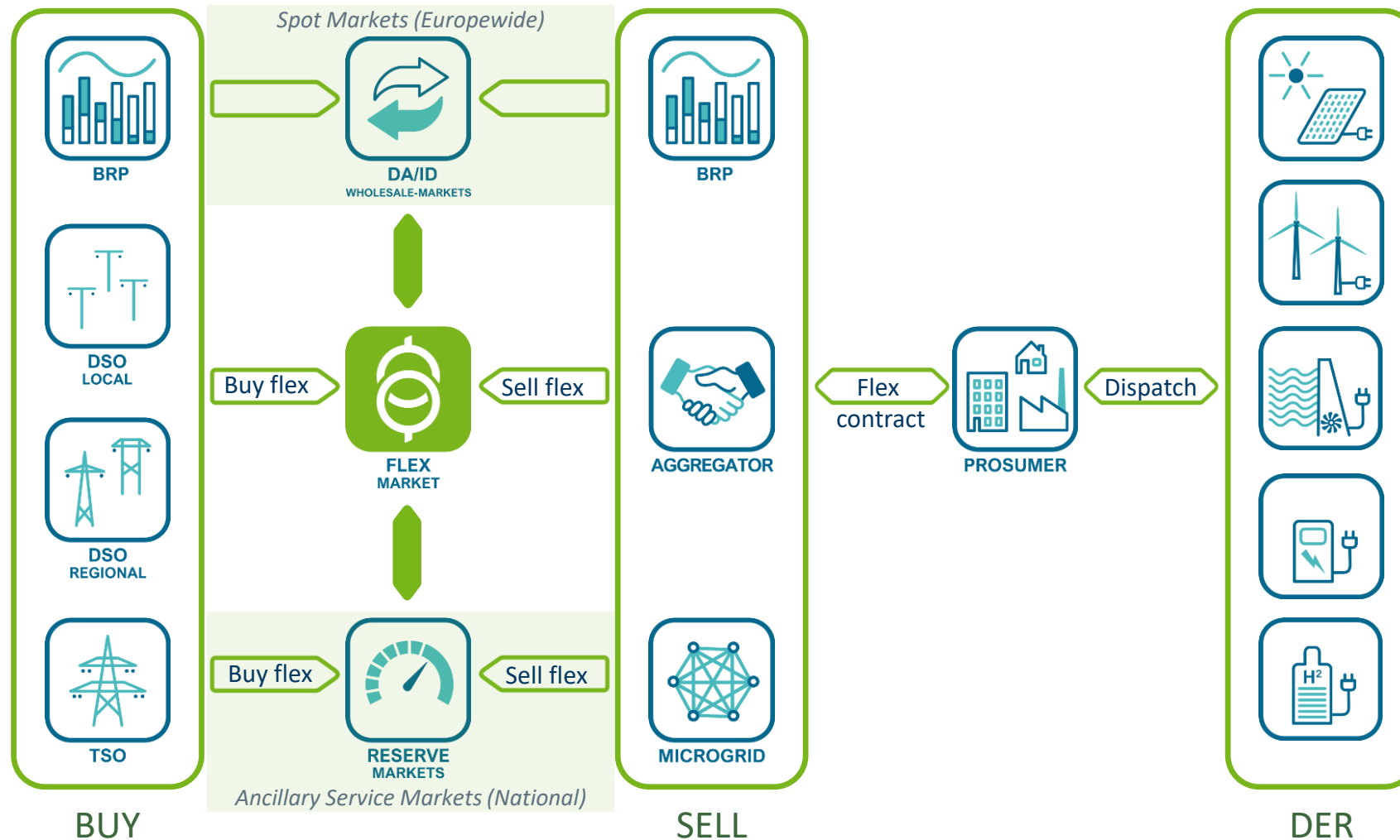


Source: ENTSO-E Vision on Market Design and System Operations towards 2030: (as of Nov 2019); example on market design options for short term markets and congestion management



# Bottom Up – a fully-fledged, integrated Market Design

Serves 100% the Clean Energy Package - fills the gap between commercial & regulated domain



## Sellers' need ...

- ... a place to trade their flexibility - *access to markets*,
- Someone to *aggregate small flexibility* to enable market access,
- A *fair and independent market price*,
- A *market* all year round ,
- *Service providers* that can connect up and *manage flexibility automatically*.

## Buyers' need Flexibility to be available

- ... when there is *too much production*,
- when there is *too much consumption*,
- for *long term planning*,
- to *help operations* in near real-time situation in *N-1 situations*,
- in a *specific location*,
- for *frequency balancing* and for *balancing of portfolios*.

The NODES market platform is built to support different products and services, with different properties:

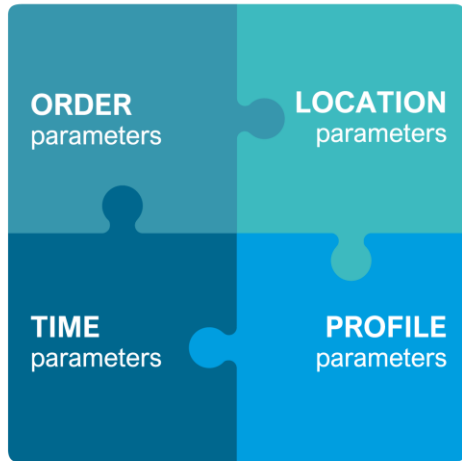
- ShortFlex services are offering NODES participants the opportunity to trade contracts, which oblige the seller to a constant change in infeed or offtake of active power within a pre-defined grid location during a fixed time period.
- Grid location is a service for system operators for creating and editing discrete spatial representations of the boundaries of one or more parts of their electrical grid.
- LongFlex is a service which offers NODES participants to bilaterally agreed capacity contracts in pre-defined grid locations the opportunity to automatically generate ShortFlex orders with the bilaterally agreed specifications.
- Rebalancing (implementation phase) is a service which offers automatic energy balancing to BRPs whose portfolios are affected by flexibility asset activations caused by a trade in ShortFlex products.
- MicroEnergy (design phase)

The products are defined by means of a set of parameters, some of which are mandatory parameters (such locational parameters) while others may be left open, depending on the priorities among buyers and sellers.

# Parameters for utmost usability of flexibility ...



... but standard products works well within regional marketplaces for short- & long-term capacities



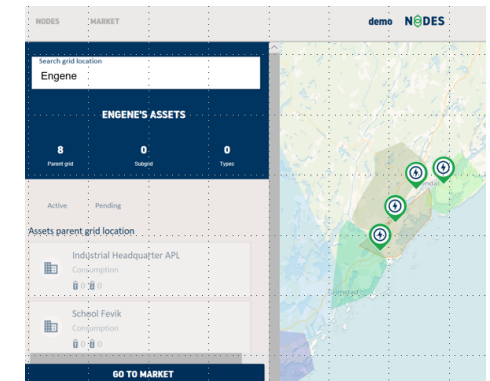
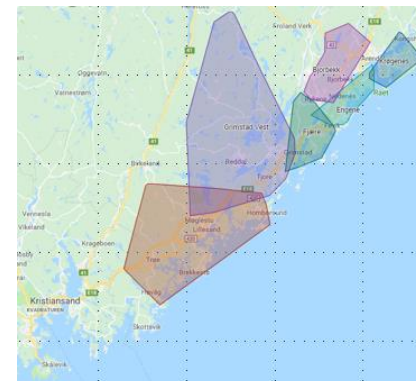
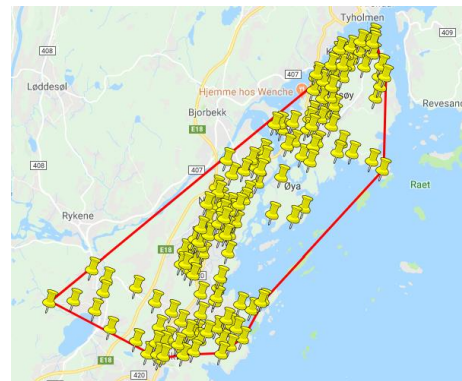
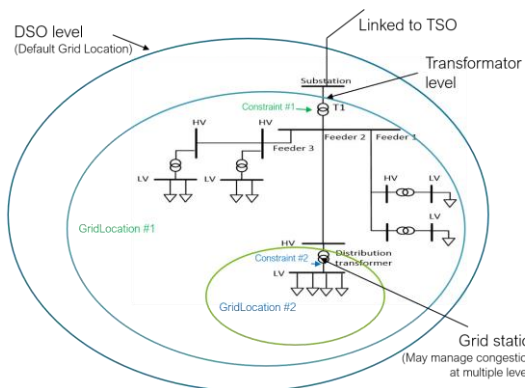
## ORDER parameters:

Standard orders are e.g. 1 hour 1 MW latest 30 minutes before delivery 13-14 hrs

Parameterised ShortFlex order allow e.g. 25 minutes for 0,45 MW 10 min before delivery. This is an opportunity for any DSO, and FSP will align.

## LOCATION parameters:

DSOs know their grid best. NODES allows easy-to-build grid location or local markets, in which assets of FSPs, once registered and certified, can have access to.



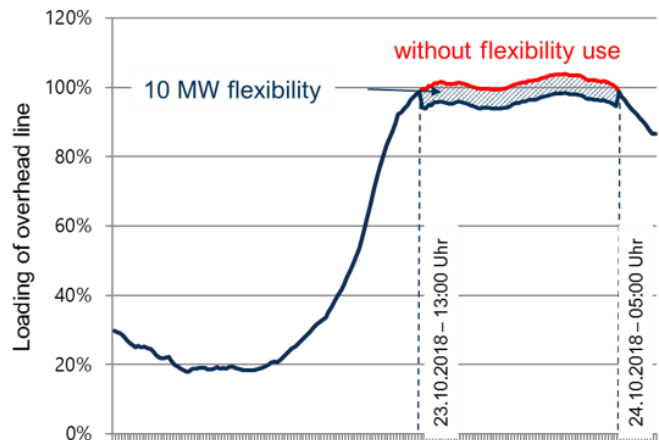
An business ecosystem for platforms and common industrial APIs built to allow and scale wherever a need to facilitate the CEP in Europe.

# NODES projects ...

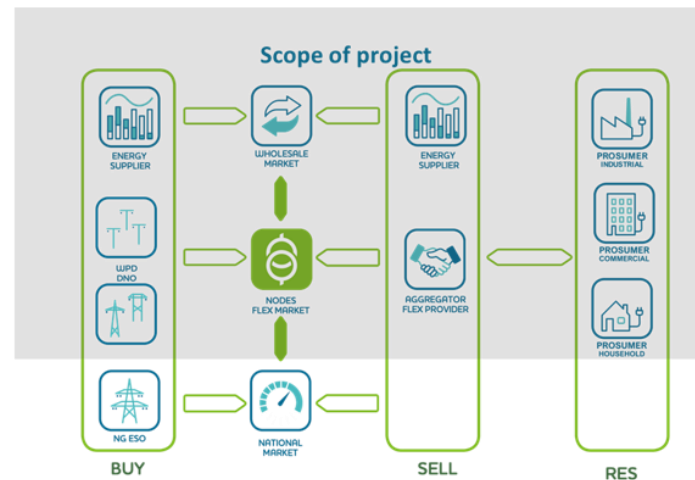
... some examples for realised and planned test installations



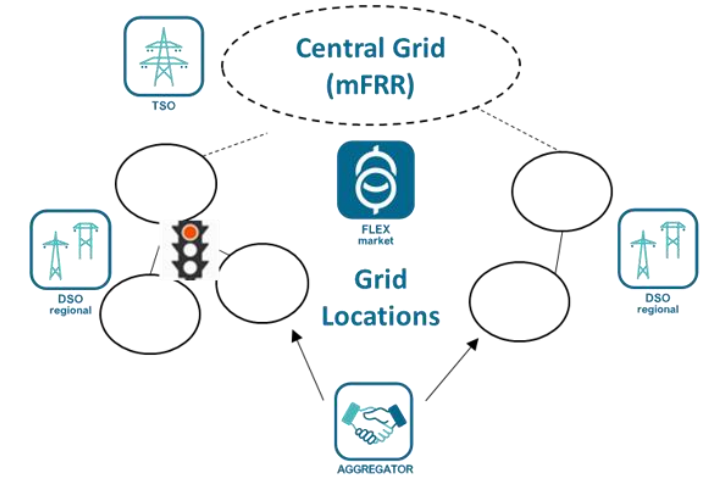
- DSO grid congested by excess RES production
- Access to 10 MW demand side flexibility via NODES



- Aligning NODES market design with GB market
- Trading flexibility on Day-Ahead and Intraday, including auto-rebalancing



- Flexibility used by multiple DSOs for congestion management
- Flexibility also used in TSO reserve market



# Challenges implementing CEP ...



... some observations during realised, ongoing, and planned test installations

- ⊕ Regulatory framework created legal uncertainty in several countries, and thus associated financial risks.
- ⊕ Outstanding regulatory implementation leads to inadequate planning security for engaged stakeholders.
- ⊕ Inadequate variety of network tariff models that hinder market-based utilisation of prosumer flexibility (e.g. switchable loads according to the principle of "use instead of downsizing") and thus stand in the way of network-friendly behaviour.
- ⊕ Restrictions on the integration of renewable energies with regards to the existing supporting schemes (EEG), in particular for using self-generated and self-consumed renewable energy in several sectors.
- ⊕ Obstacles to new industrial applications due to the existing supporting schemes (e.g. power-to-gas plants for the conversion of renewable electricity into chemical energy sources and products).

Building Europe's most customer-centric, integrated energy marketplace to unlock the value of local flexible power resources and support the drive to a sustainable, emission free future.

