



Enabling a sustainable future

2nd Annual Nordic Electricity Market Forum
Oslo, 28th November 2019

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Trends in the electricity sector ...

... 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

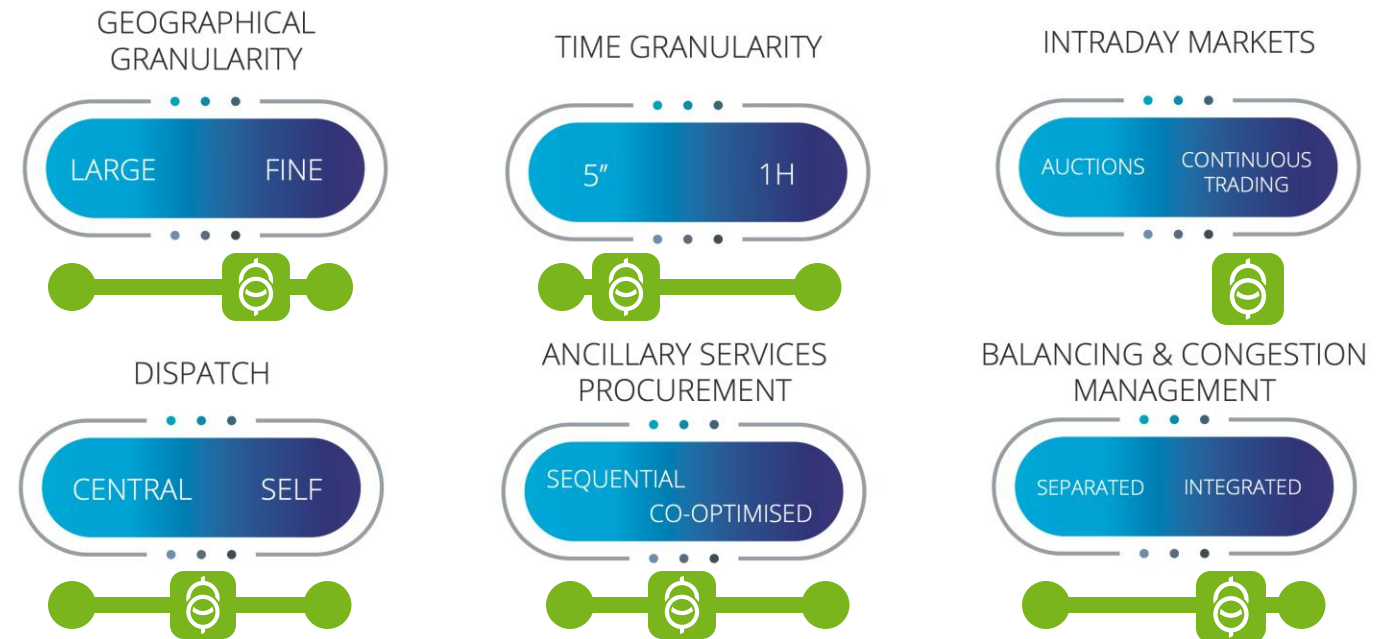
Carbon-neutral / Zero-carbon / increased electrification / environmental reasons

5. Harmonising with EU

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

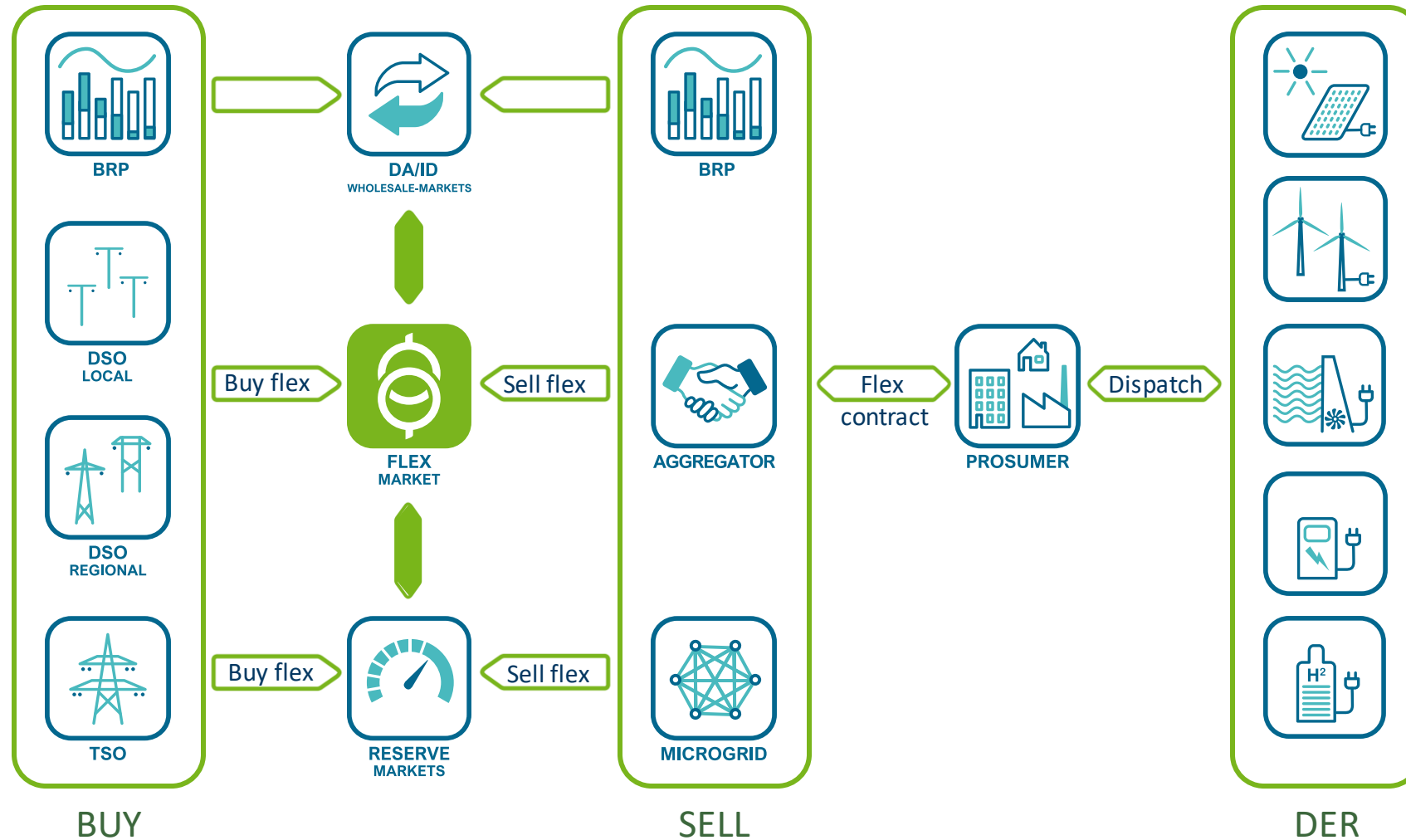


Source: ENTSO-E Vision on Market Design and System Operations towards 2030: (Nov 2019); example on market design options for short term markets and congestion management

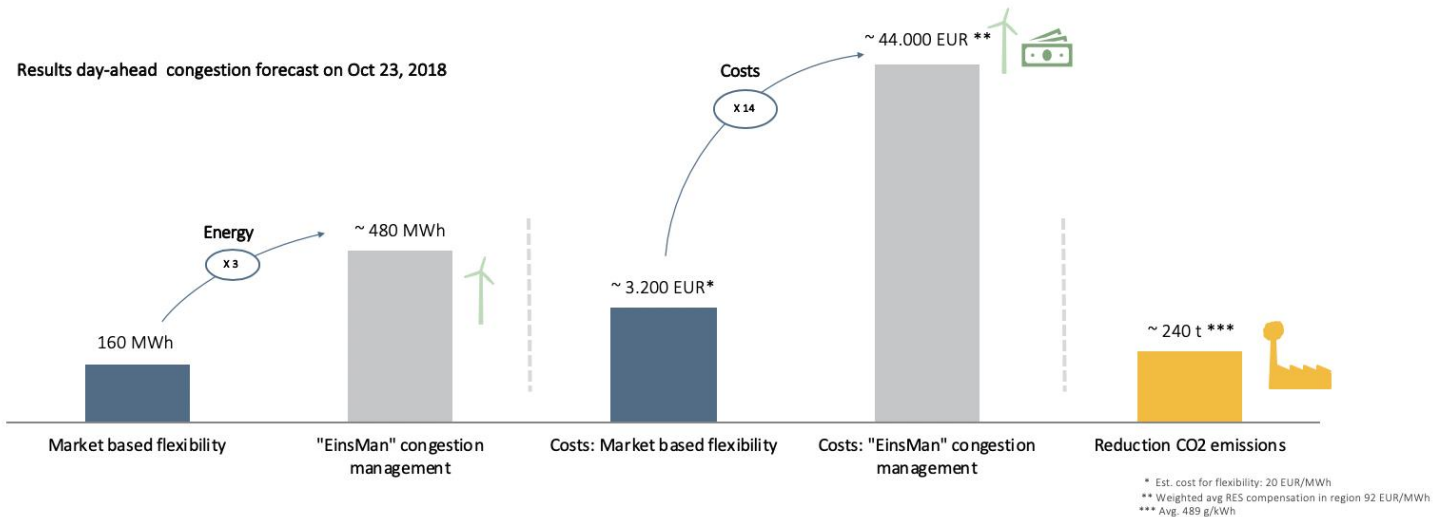
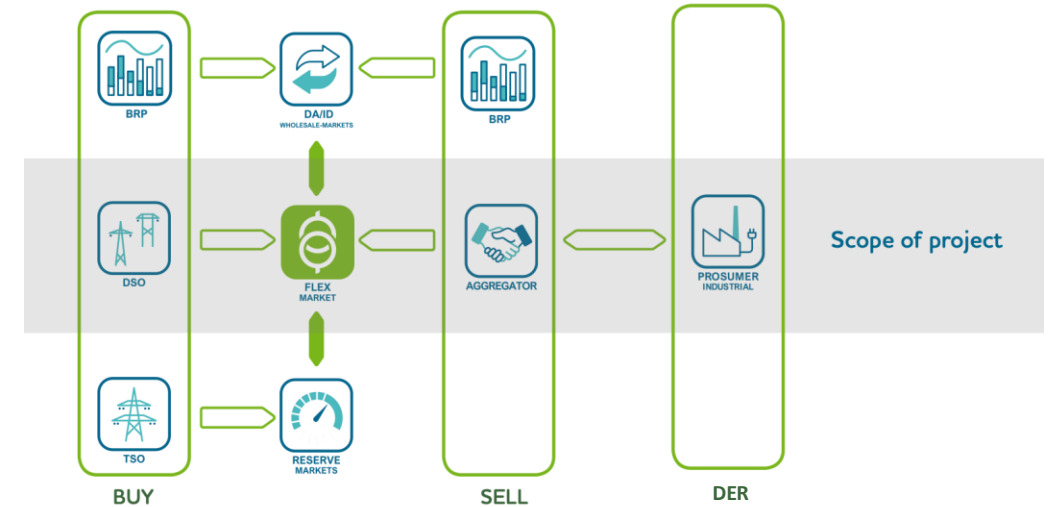


Bottom Up – a fully-fledged, integrated Market Design

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



- Flexibility – demand response offered via NODES
- Demonstrate the use of local flexibility as an alternative to traditional redispatch process
- Evaluating activation of available flexibility in a grid location that has 98% RES production in their grid (8.000 MW wind, 3.000 MW load)
- Verification of processes and procurement of local/regional flexibility

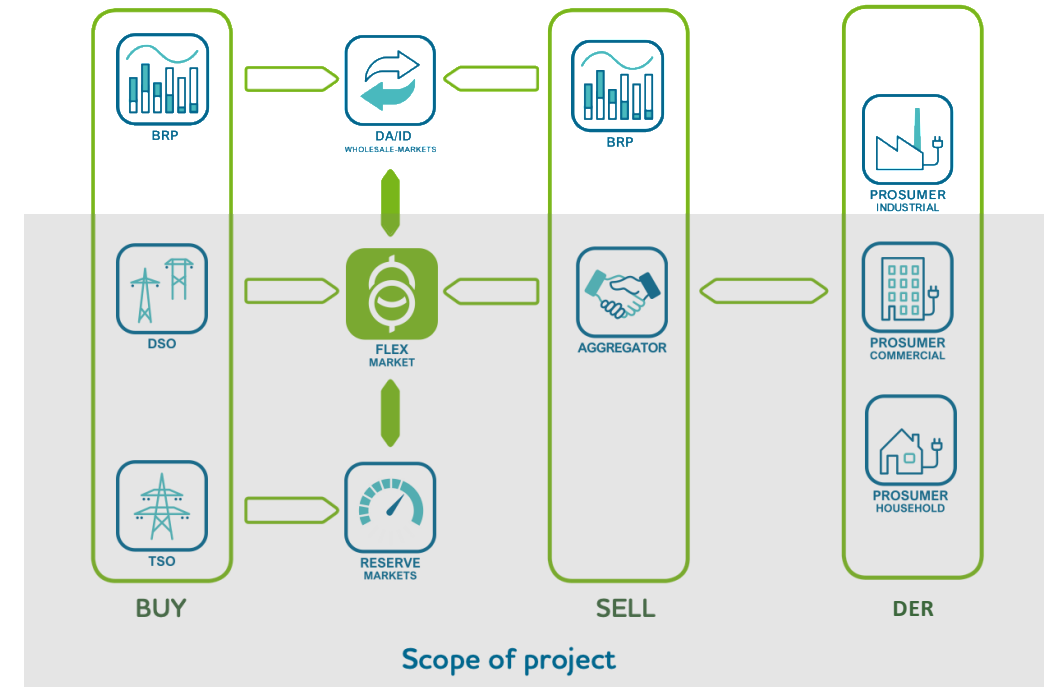


NorFlex

Norwegian large-scale demonstrator with Agder Energi, Glitre Energi, Mørenett and Statnett



- Large scale demonstration
- 3 DSOs and TSO
- Demonstrating vertical integration of flexibility with TSO market
- Open to all flexibility providers
- Demonstrate technical aggregation to TSO level
- Continue to develop the marketplace further, as well as develop further supporting tools for the grid operator, and supporting tools for the FSPs



agder energi

GLITRE
ENERGI

Mørenett

Statnett

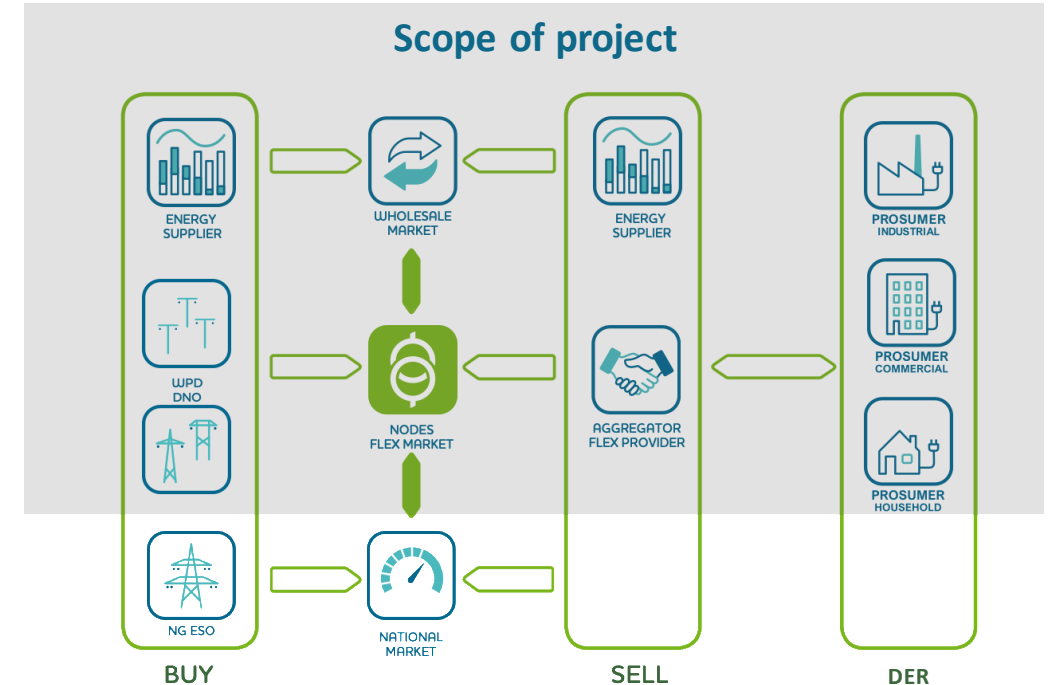
NODES

IntraFlex

UK Innovation project with Western Power Distribution and Smart Grid Consultancy



- Building on WPD's current procurement of flexibility services
- Creating a new, closer to real-time, flexibility market accessible for the DNO
- Trading flexibility in the day ahead and intraday time frame
- Aligning NODES market design with GB market
- NODES to develop auto-rebalancing function connected to the intraday market in order to lower energy supplier exposure of imbalance costs and decrease the cost of providing flexibility in the long run
- Smart Grid Consultancy to project manage and support
- Project period from November 2019 – November 2021



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.

