
Enhanced value creation through collaboration between utilities and market players

Annex 67 seminar on Flexible Energy Buildings, 4 April, Aalborg



Danish Intelligent Energy Alliance



Members



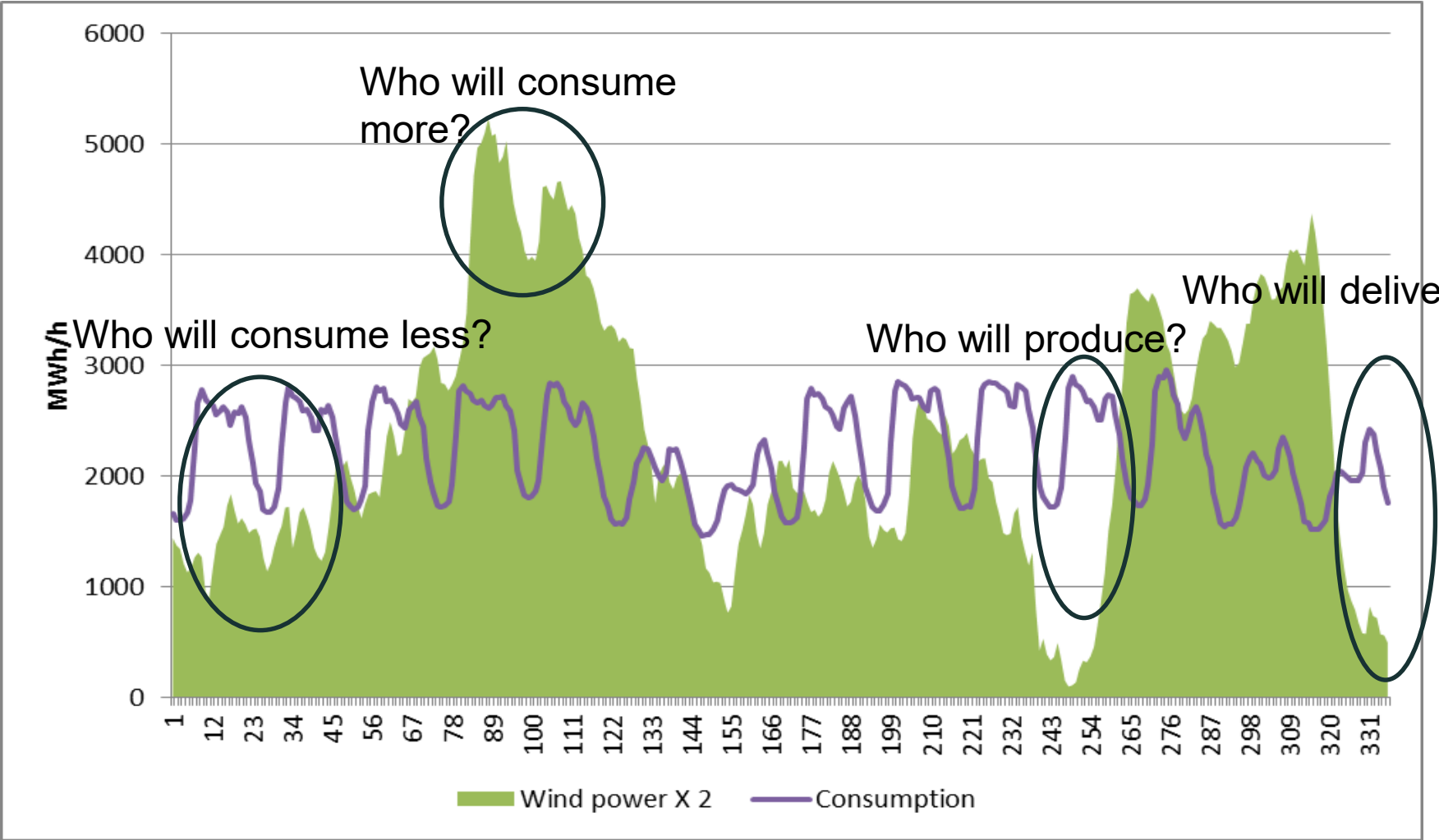
Member sectors:

- Energy and utility companies:
 - Electricity
 - Heat
 - Gas
 - Water and wastewater
- Municipalities
- Technology suppliers
- Advisors
- Universities
- Financial actors
- Research and knowledge institutions



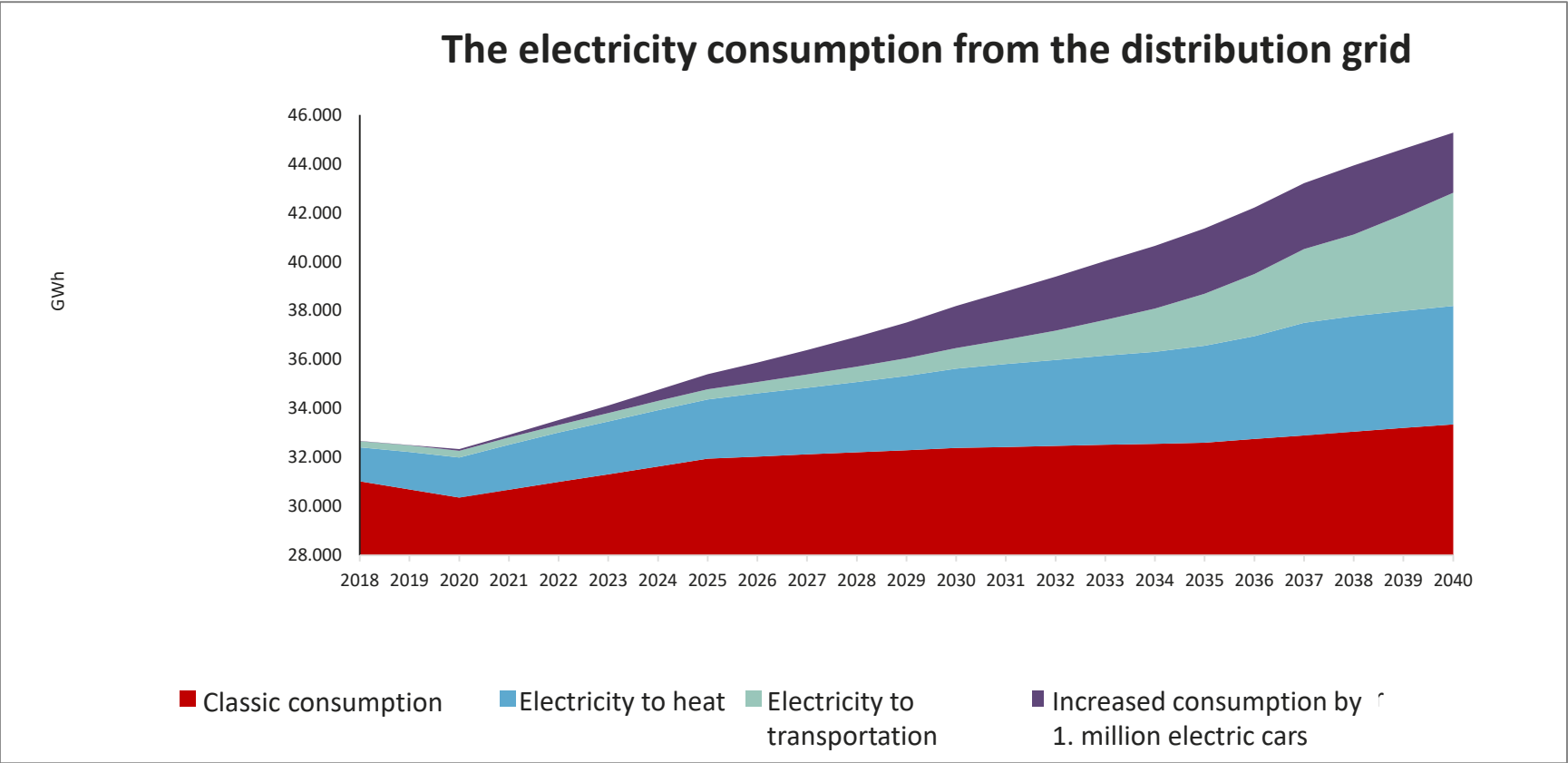
Drivers for flexible prosumers in the energy markets

- a need to integrate intermittent renewable energy resources

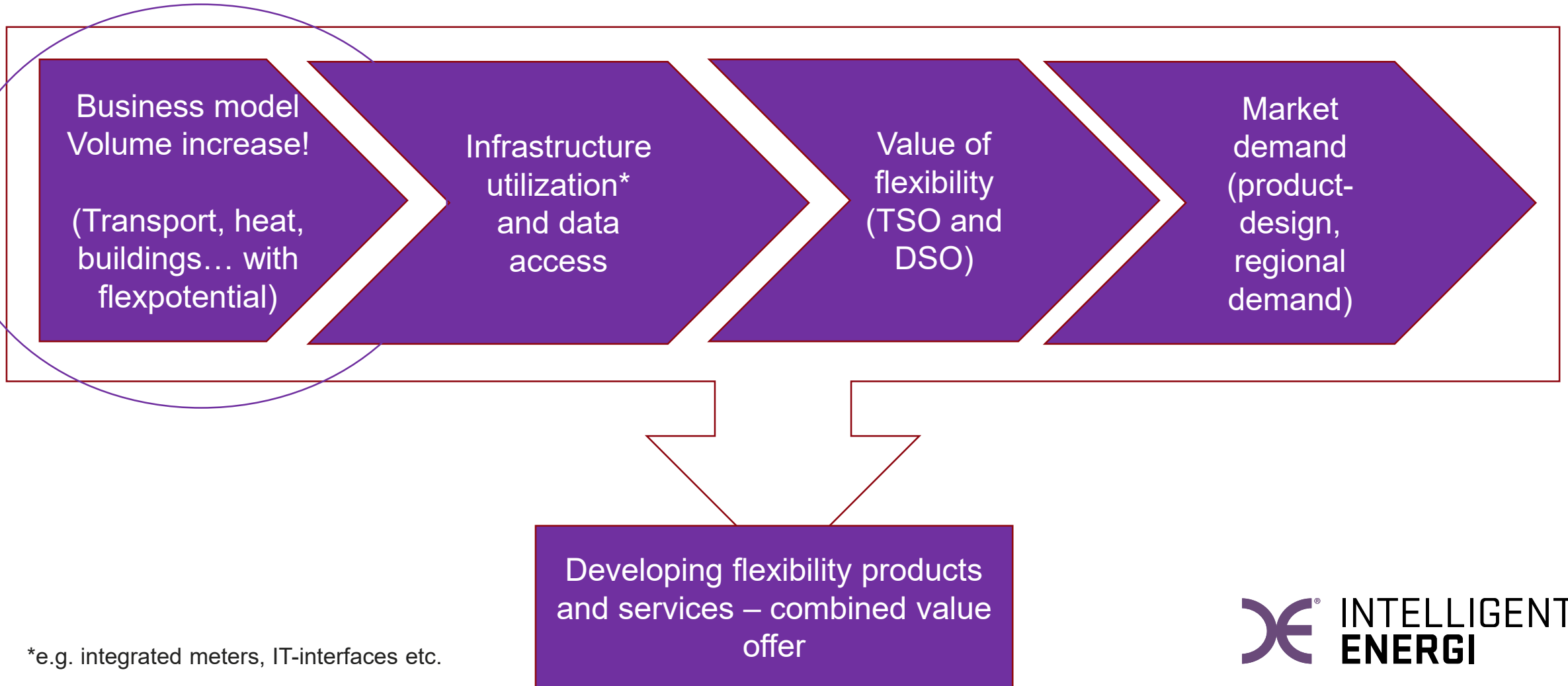


Electrification

40% increase in the distribution grid



A roadmap for flexibility services

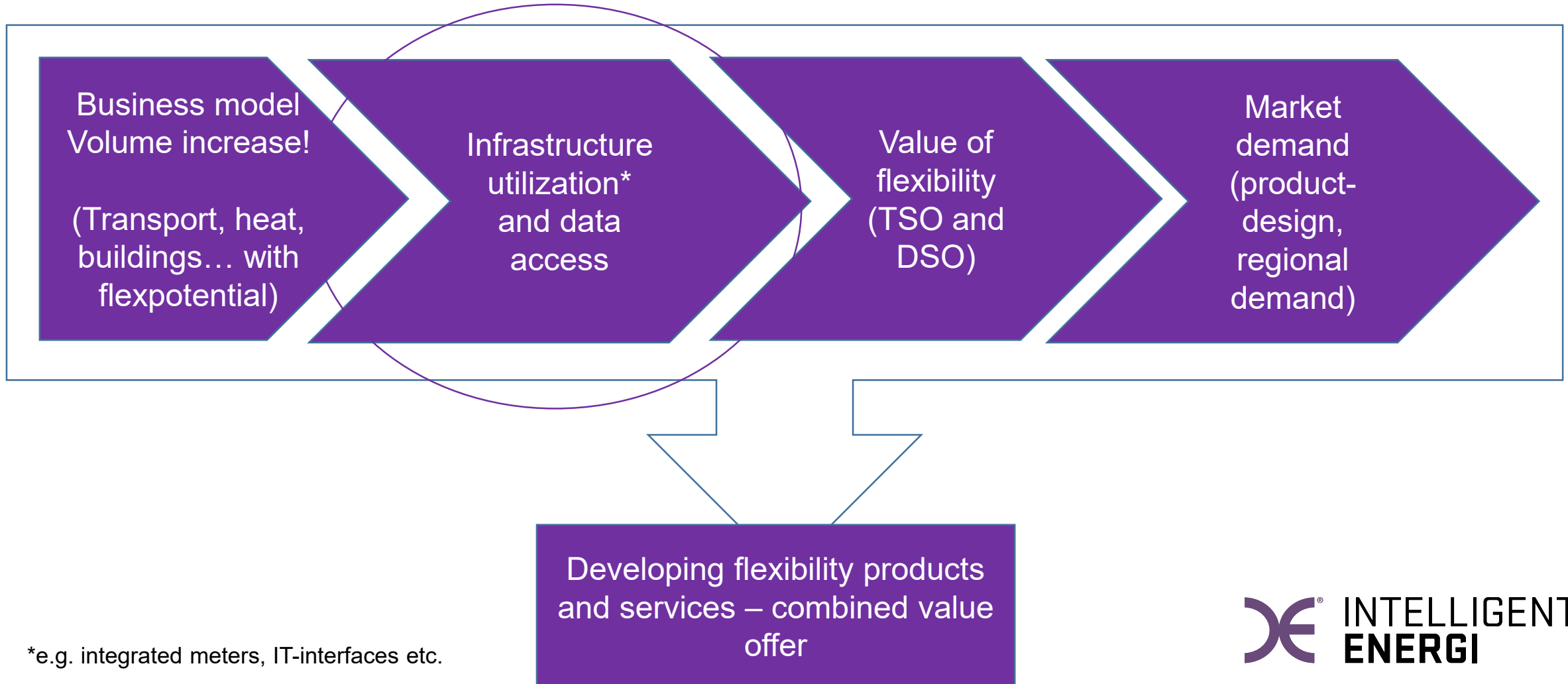


*e.g. integrated meters, IT-interfaces etc.

Increased volume – Market development

- The Energy Agreement in June 2018 lowered electricity-heat-tax permanently
- Government Climate proposal: 1 mio. EVs and plugg-in hybrids by 2030
- Treasury bill 2019: Elements providing a more stable framework for EVs
- EU's "Energy Performance in Buildings Directive" Dec. 2018: EV chargers in new buildings and ICT in all large buildings
- Several initiatives about data access and digitalization

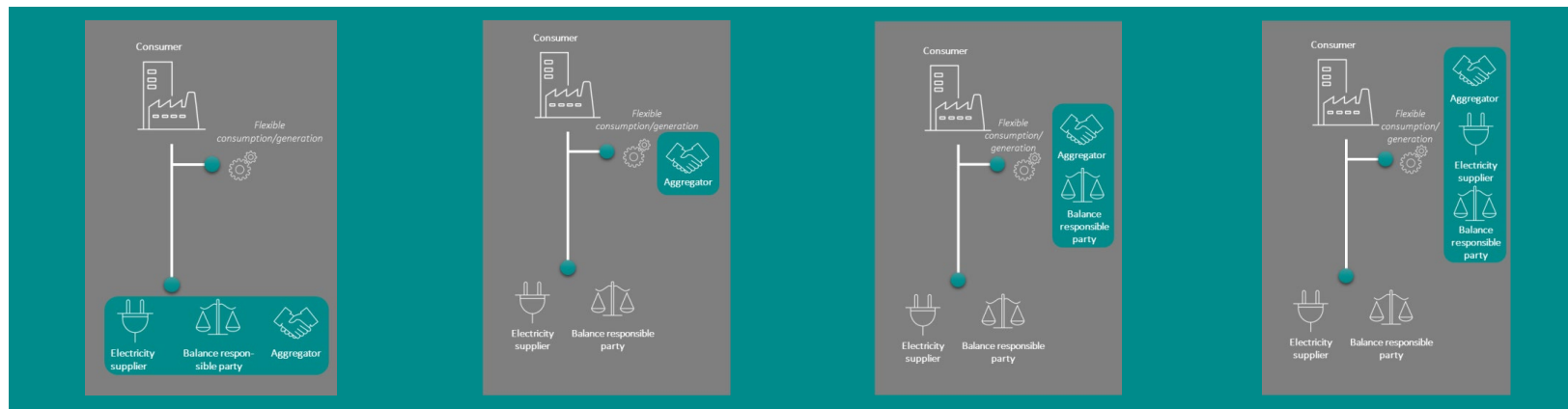
A roadmap for flexibility services



*e.g. integrated meters, IT-interfaces etc.

MARKET MODELS FOR AGGREGATORS

– Activation of flexibility (June 2017)

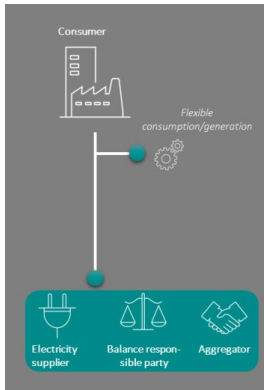


Source: Market Models for Aggregators (Danish Energy Association, Energinet, Danish Intelligent Energy Alliance and DI, June 2017)

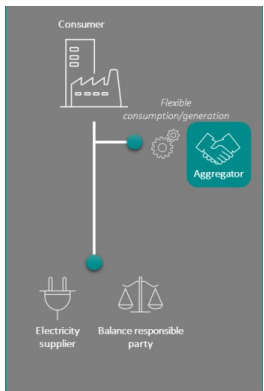
MARKET MODELS FOR AGGREGATORS

- AHEAD OF COMPLIANCE WITH EU CLEAN ENERGY PACKAGE

Aggregators are defined in the market:



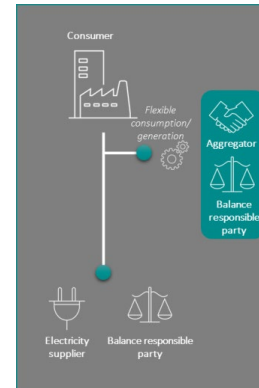
Still a need for more cases



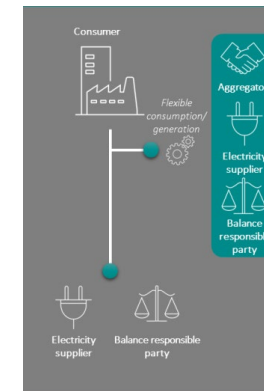
FCR no BRP-requirement
Tests are running since early 2019 with 4 cases



Aggregators are defined in the market – preliminary as suppliers



Further developed to incl. AGG as SUPP on own submeters and It-interfaces behind the DSO meter feeding data into the datahub. Tests are being initiated, spring 2019

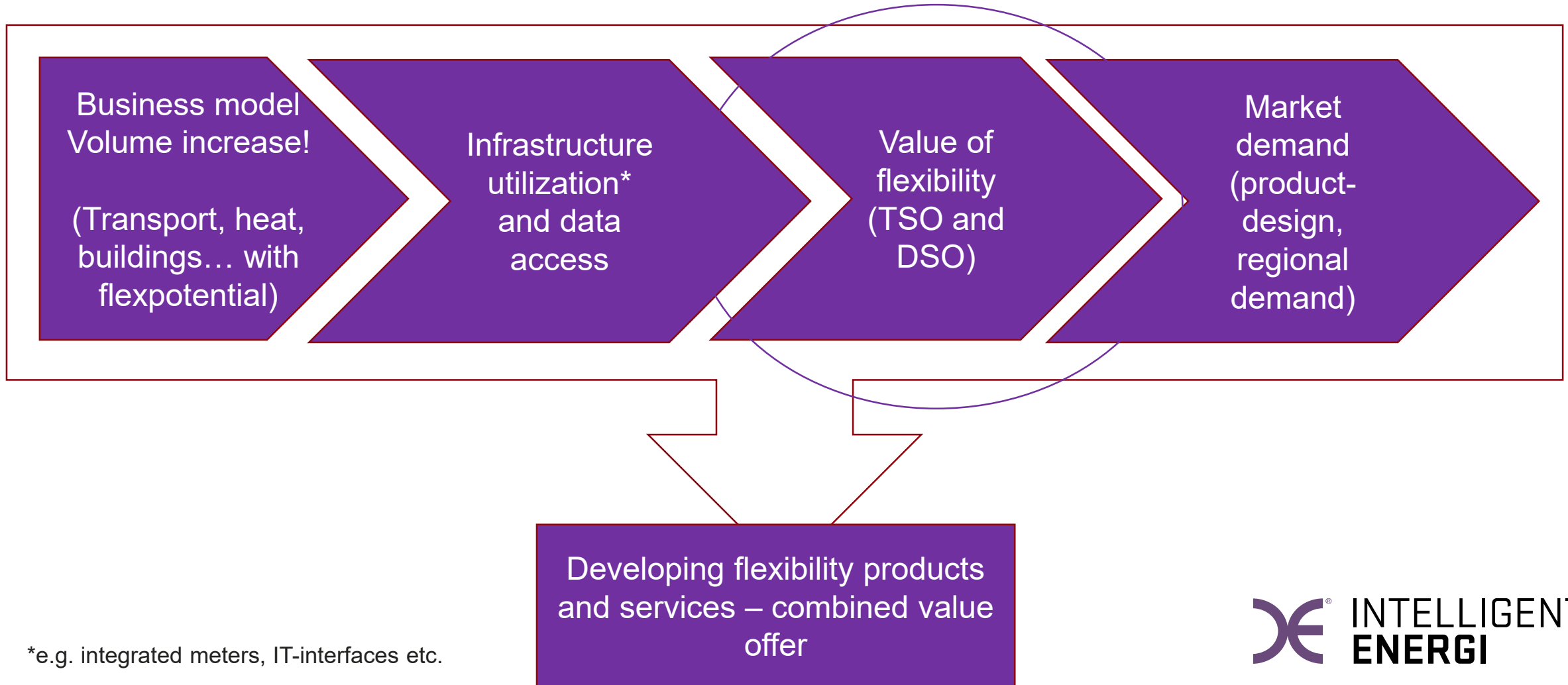


AGG using DSOs submeter (serial meter with data in the data hub) Better terms of delivery etc. Submission in spring 2019

Multiple data initiatives

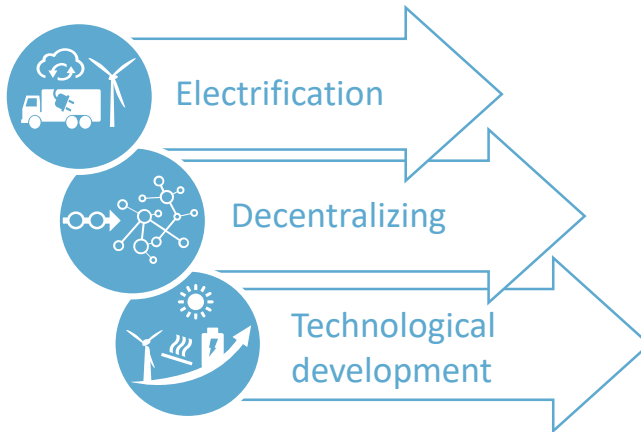
- Data driving growth – government growth team recommendation
- Center Denmark, Flexible Energy Demand and Heat 4.0
- Energy Authorities effort to enhance Data utilization in Building

A roadmap for flexibility services



*e.g. integrated meters, IT-interfaces etc.

Case: Is there sufficient capacity in the power grid on Solvej?

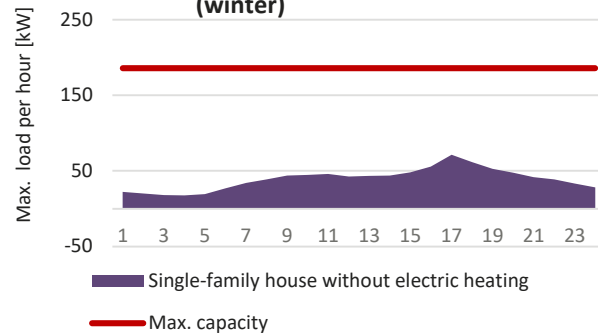


Market trends are putting pressure on the capacity in the power distribution network

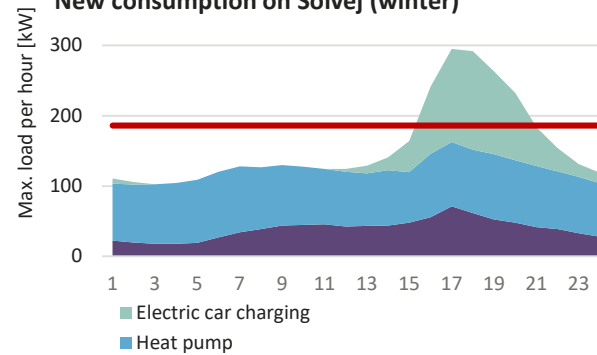
Case: Residential street Solvej
Is there **sufficient capacity** in the grid?



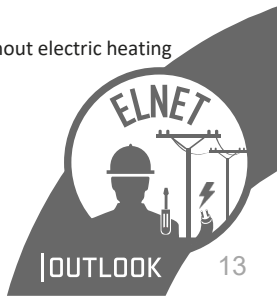
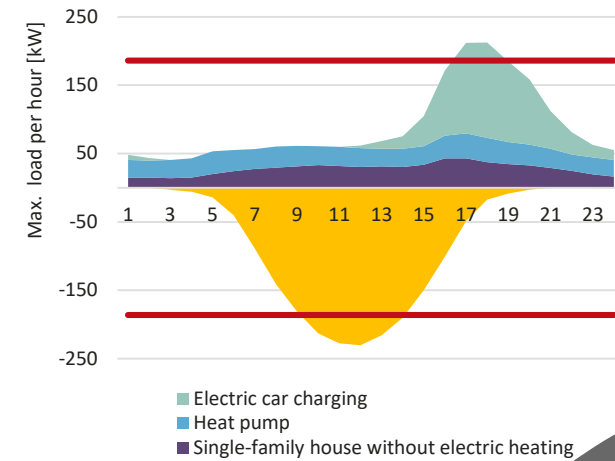
Classic electricity consumption on Solvej (winter)



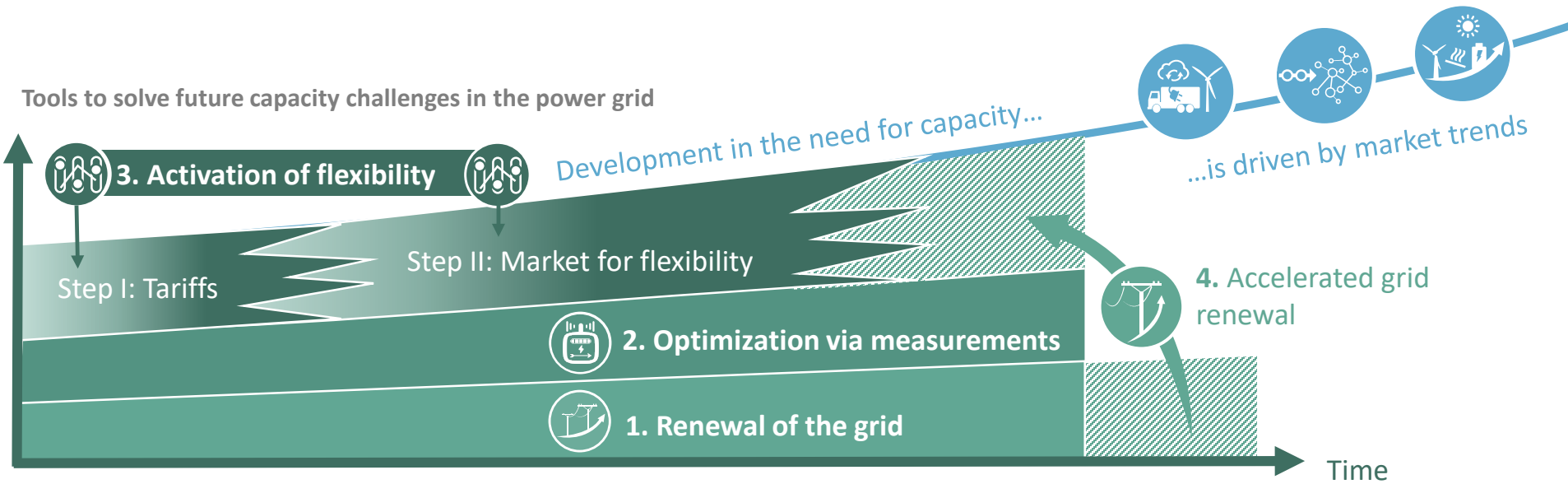
New consumption on Solvej (winter)



Solvej with solar panels (summer)



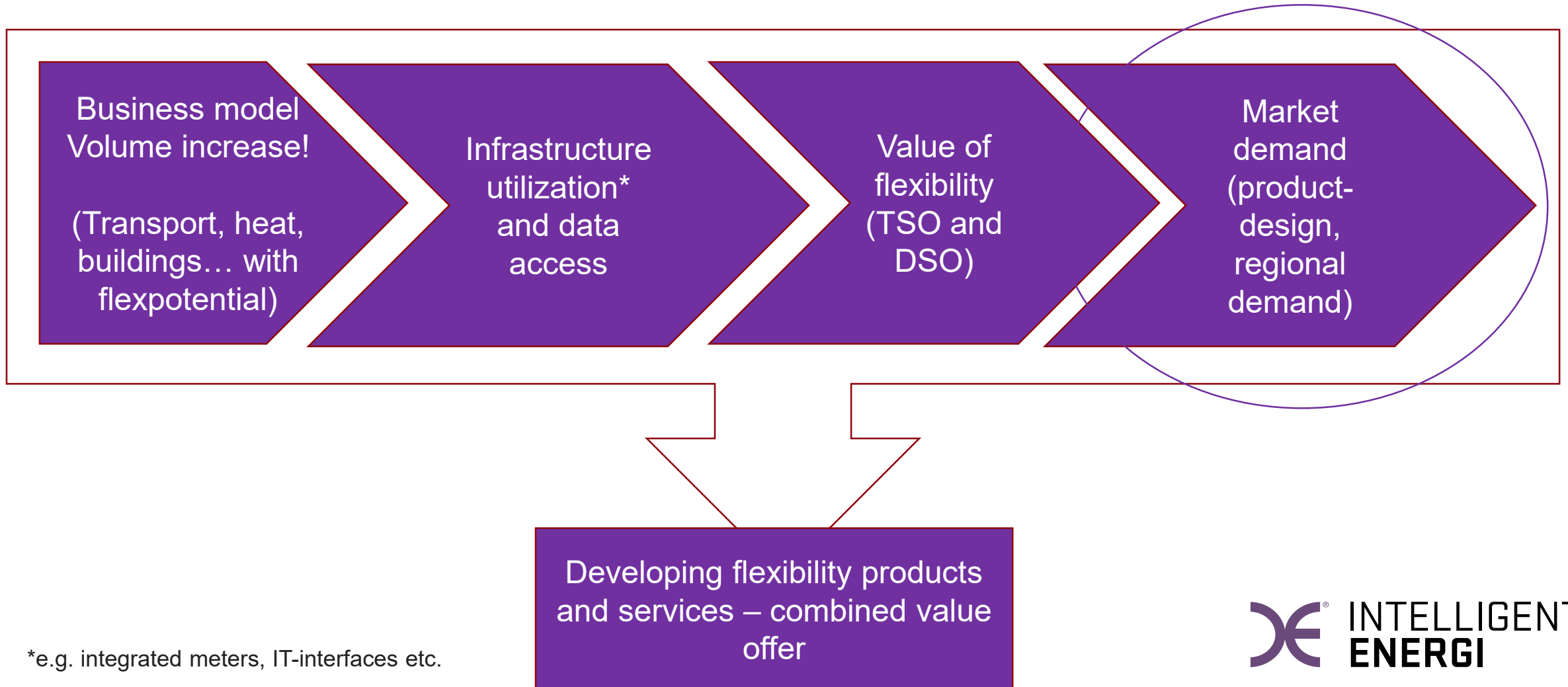
The complete solution to capacity challenges in the power distribution grid



Rewarding flexibility in the future

- **Reward the consumer that helps the grid** through time-of-use tariffs and by rewarding “the location that helps”
- The **fixed element in the tariff model below 50%** but avoid to undermine electrification
- **Look at the combined price signal: Tariffs and grid connection fee**, terms for new technologies need to reflect the value they represent in the power grid
- **Customer categories** and appropriate behavior in relation to grid load: Time-of-use tariffs for ordinary customers and capacity tariffs for large industrial consumers
- Fair tariffs no **cross-price subsidization**

A roadmap for flexibility services



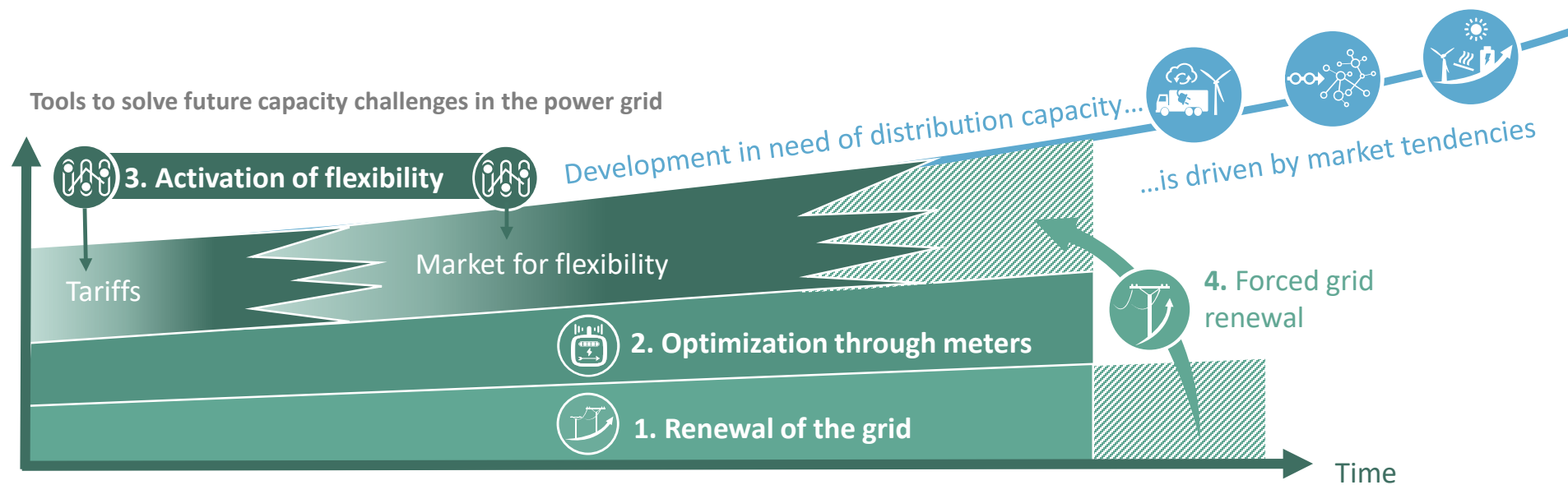
*e.g. integrated meters, IT-interfaces etc.

TSO balancing services – fair treatment of demand response

Product design and product terms in relation to TSO balance services

- **Volume** must be reduced. Bid-sizes need to be reduced further from 5MW to 1MW in The Regulating Power Market (FRR).
- **Duration** and number of coherent hours of flexibility need to be as low as possible.
- **The duration of the contract** has to be flexible (strategic reserves)
- **Symmetry demands** has to be removed.
- **The opportunity to pool** consumer and producer flexibility.

Danish DSO-flexibility trade to be developed

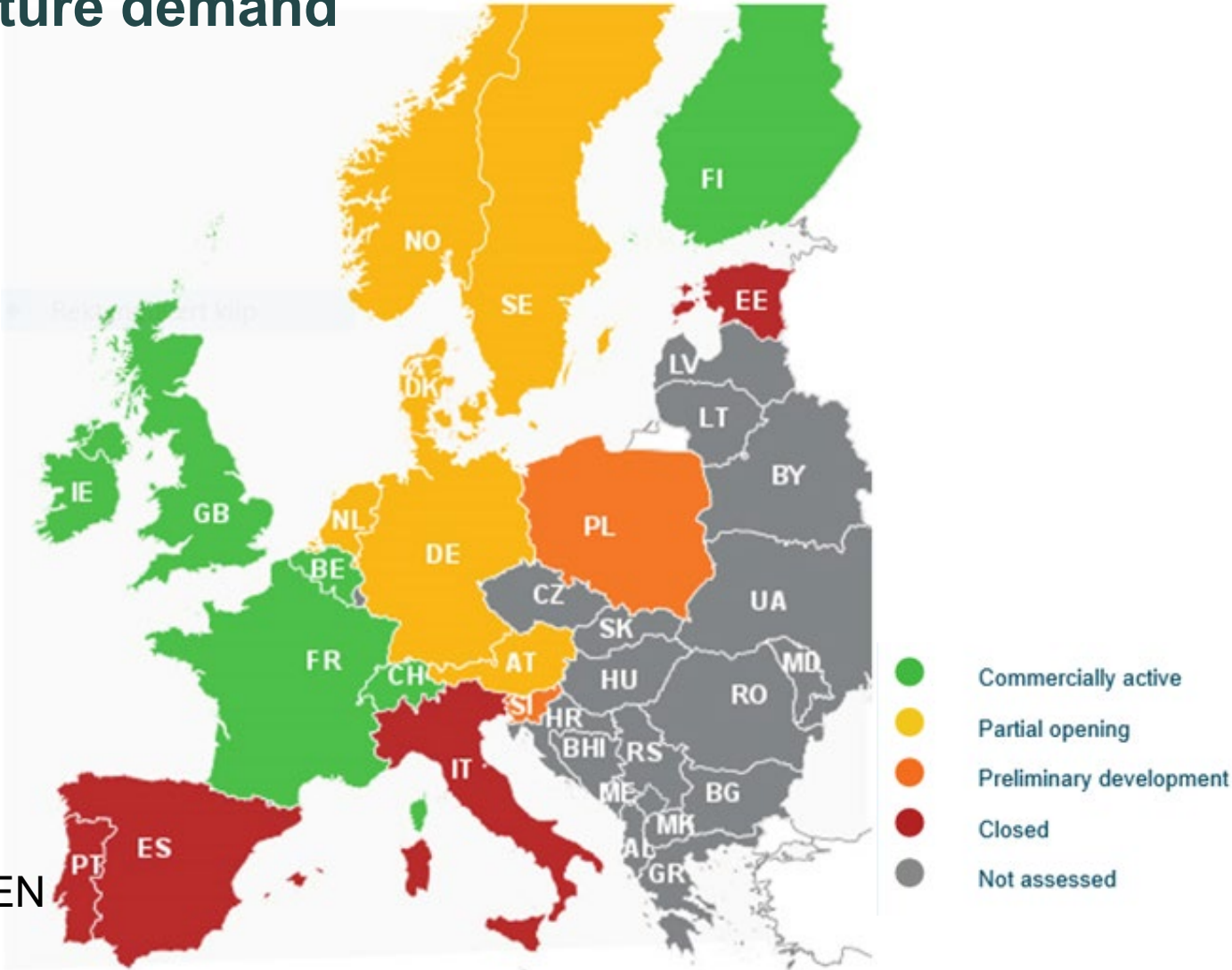


A roadmap for flexibility services



*e.g. integrated meters, IT-interfaces etc.

Getting the DK market ready and getting market players ready for the future demand



Source: SmartEN



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