



Smart TSO-DSO interaction schemes, market architectures and ICT
Solutions for the integration of ancillary services from demand side
management and distributed generation

European Utility Week | Oct. 6th 2017

The Danish Pilot: Electrically heated swimming pools as flexible assets

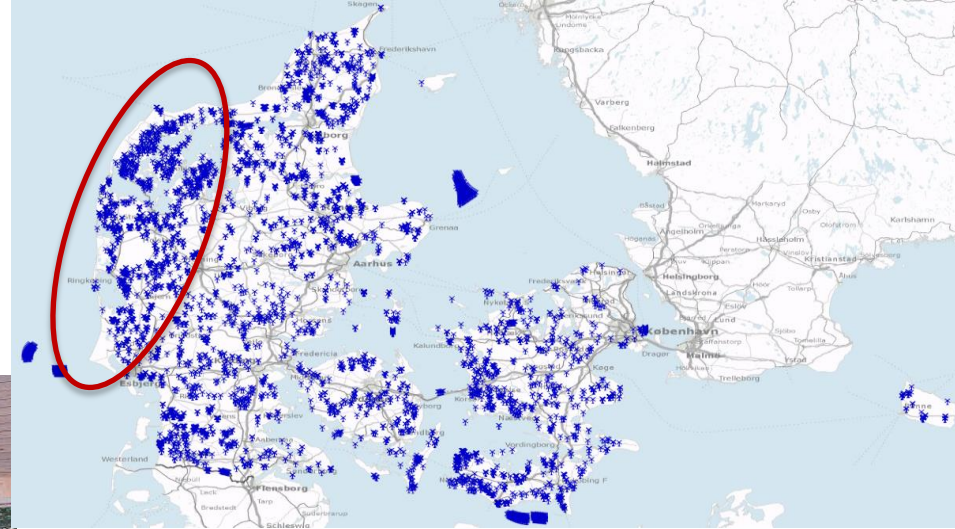
Loui Algren, Engineer
Energinet



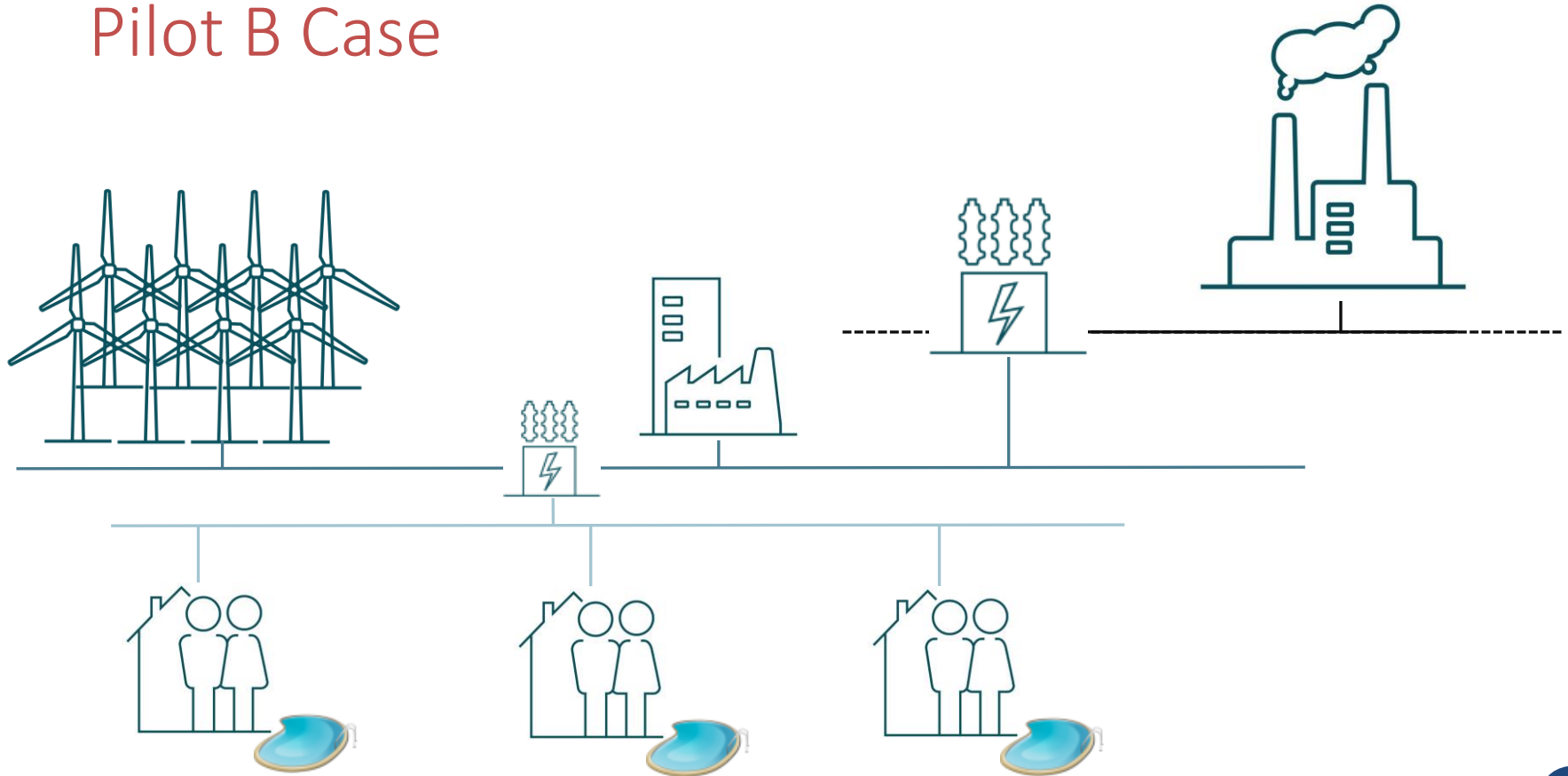
This project has received funding from the European Union's Horizon 2020
research and innovation programme under grant agreement No 691405

Pilot case

- 30 summer houses
- Electric heated swimming pools
- Highly flexible consumption

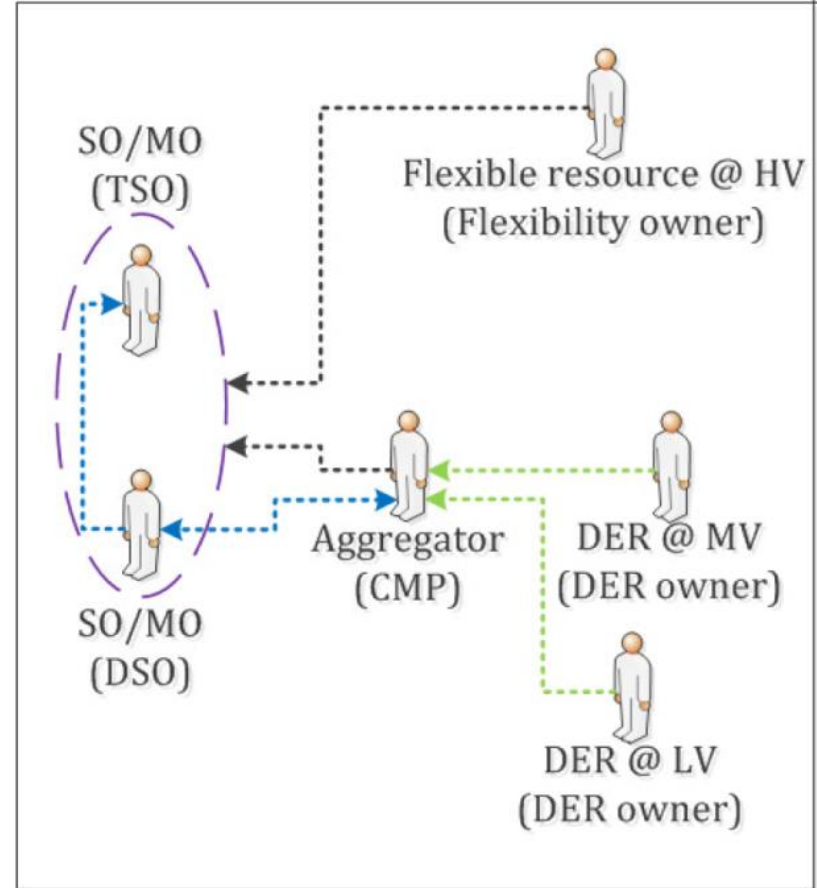


Pilot B Case



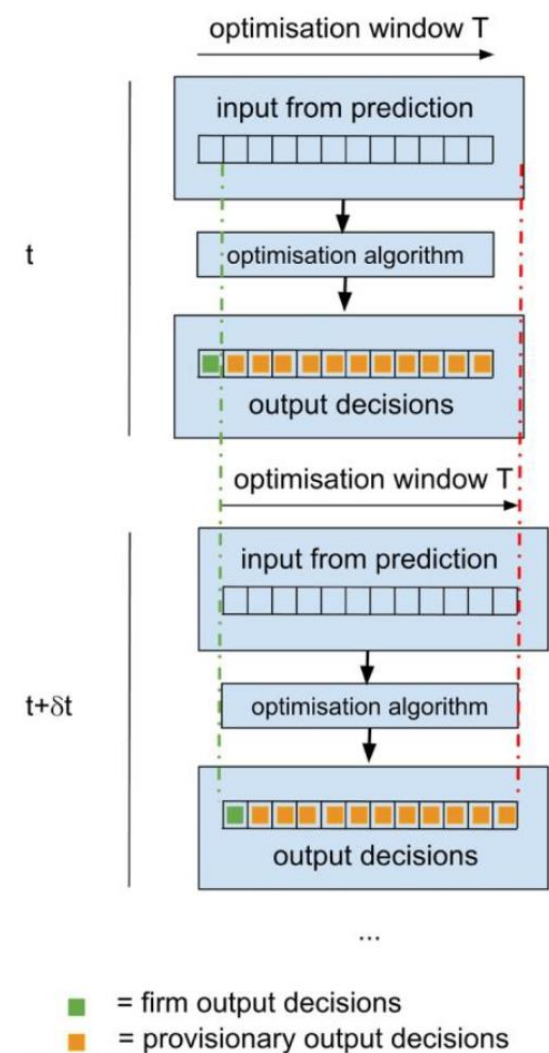
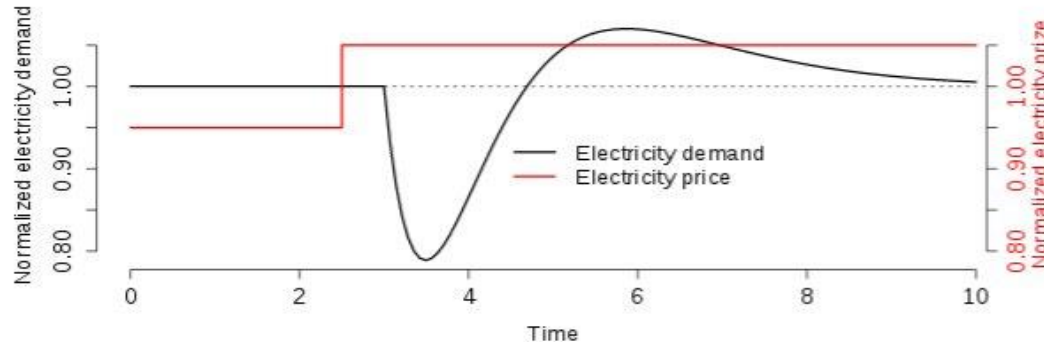
Coordination Scheme D

- Common TSO/DSO market



SmartNet Reserve Market

- Higher time resolution (5 min)
- Higher spatial resolution = Price areas on distribution level
- Rolling Horizon Optimization
- Advanced bid types



Setup

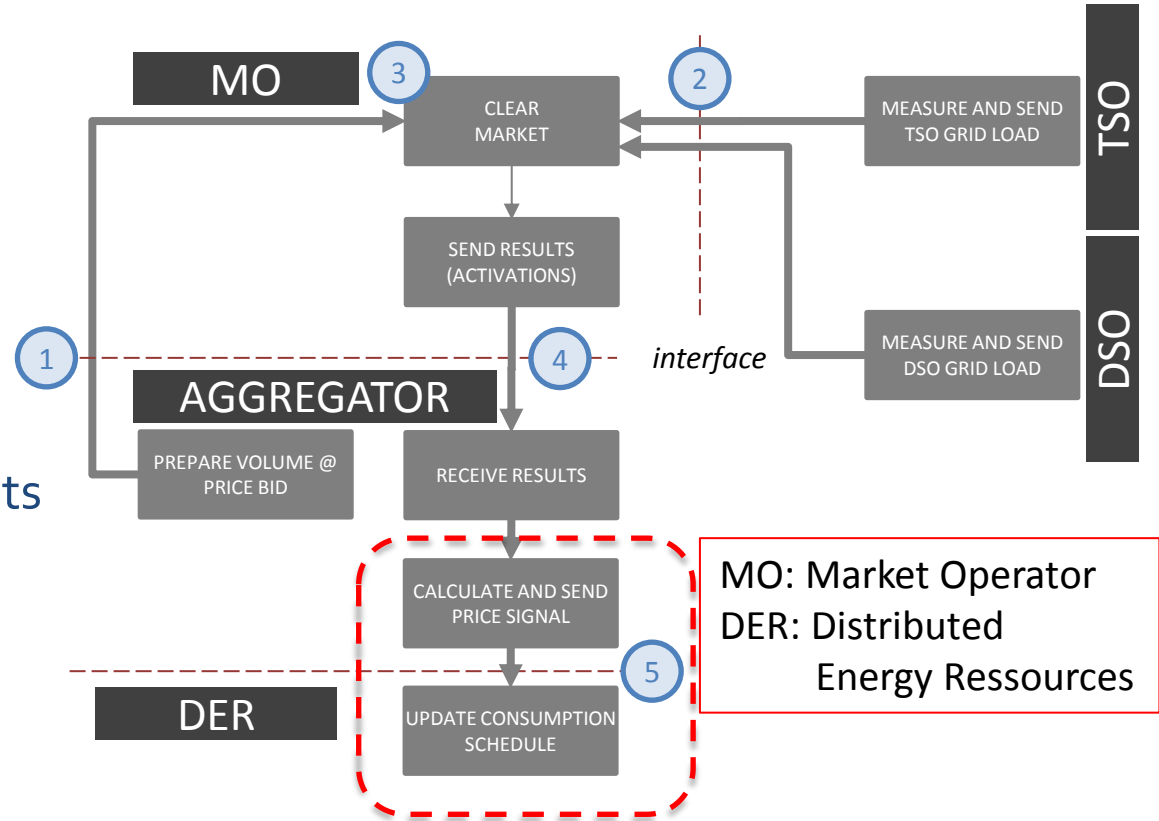
Price based control

Advantages

- Highly scalable
- No data safety issues
- Very low transaction costs

Disadvantage

- Estimation of reaction



The Challenge is now!

*"Not the whole new load is from EVs. Lots of other electricity consuming goods are purchased in Norway these days such as **jacuzzis**."*
www.ing.dk

Electric vehicles overloads the Norwegian grid



Volkswagens e-Golf var den mest solgte elbil i Norge i juni. Hele 874 eksemplarer afsatte forhandlerne. (Foto: PR-foto)

Det norske elnet er mange steder for svagt til de mange nye elbiler. Det bliver nødvendigt med nye kabler, transformere og sandsynligvis også batterilagre for at klare efterspørgslen

Consultation Document

Challenges of Defining Direct (Scalar-based) or Indirect (Price-based) Control Signals for DERs to Access the Market Directly or Through Aggregators

The purpose of this document is to present an analysis framework for various control signals and market concepts in order to set an appropriate discussion about their advantages and challenges in Pilot B of the SmartNet Project.

Please give us your feedback!

Link: <http://smartnet-project.eu/consultations/consultation-5/>



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Thank You

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SmartNet



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