



Norwegian Centres of Expertise

NCE Energy and Emissions Trading Halden

**Kort presentasjon av NCE Halden og SmartGrids-
relaterte aktiviteter**

Teknologisk møteplass 22. september 2010

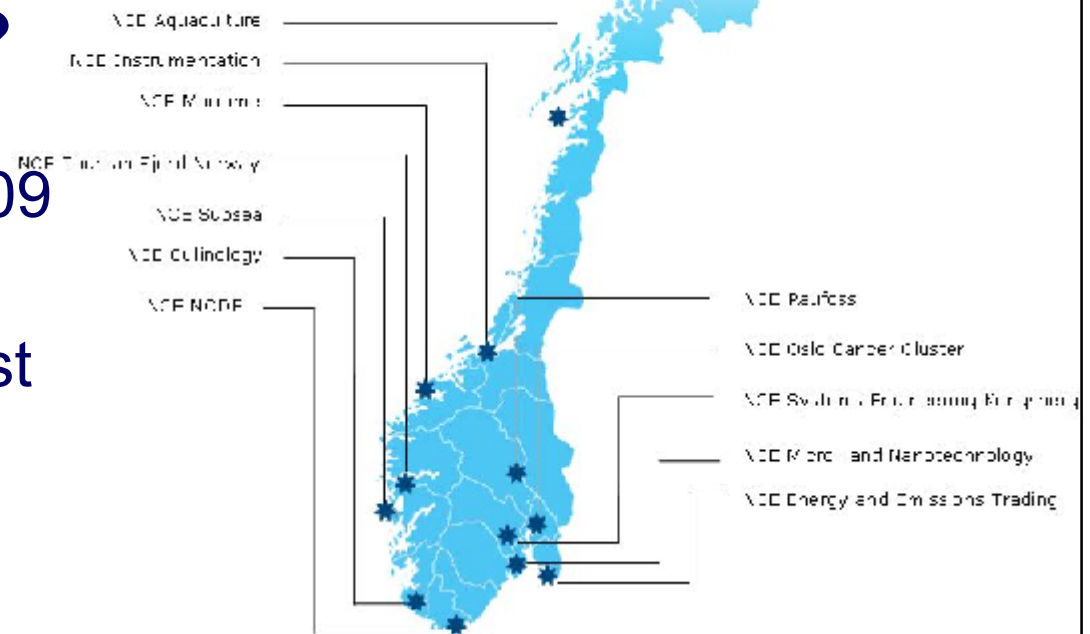


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Hva er NCE Halden?

- NCE fra 1. oktober 2009
- Et prosjekt med mål om innovasjon og vekst gjennom:
 - Utdanning og opplæring
 - Nettverksbygging
 - FoU-aktiviteter med relevans for bedriftene
- Utgangspunkt i IT- og energiklyngen i Halden-regionen
 - 20 bedrifter innen IT og/eller energi
 - Energihandel er spissområdet
 - Bredder innenfor energi generelt og IT generelt



IFE

NASDAQ OMX

navita

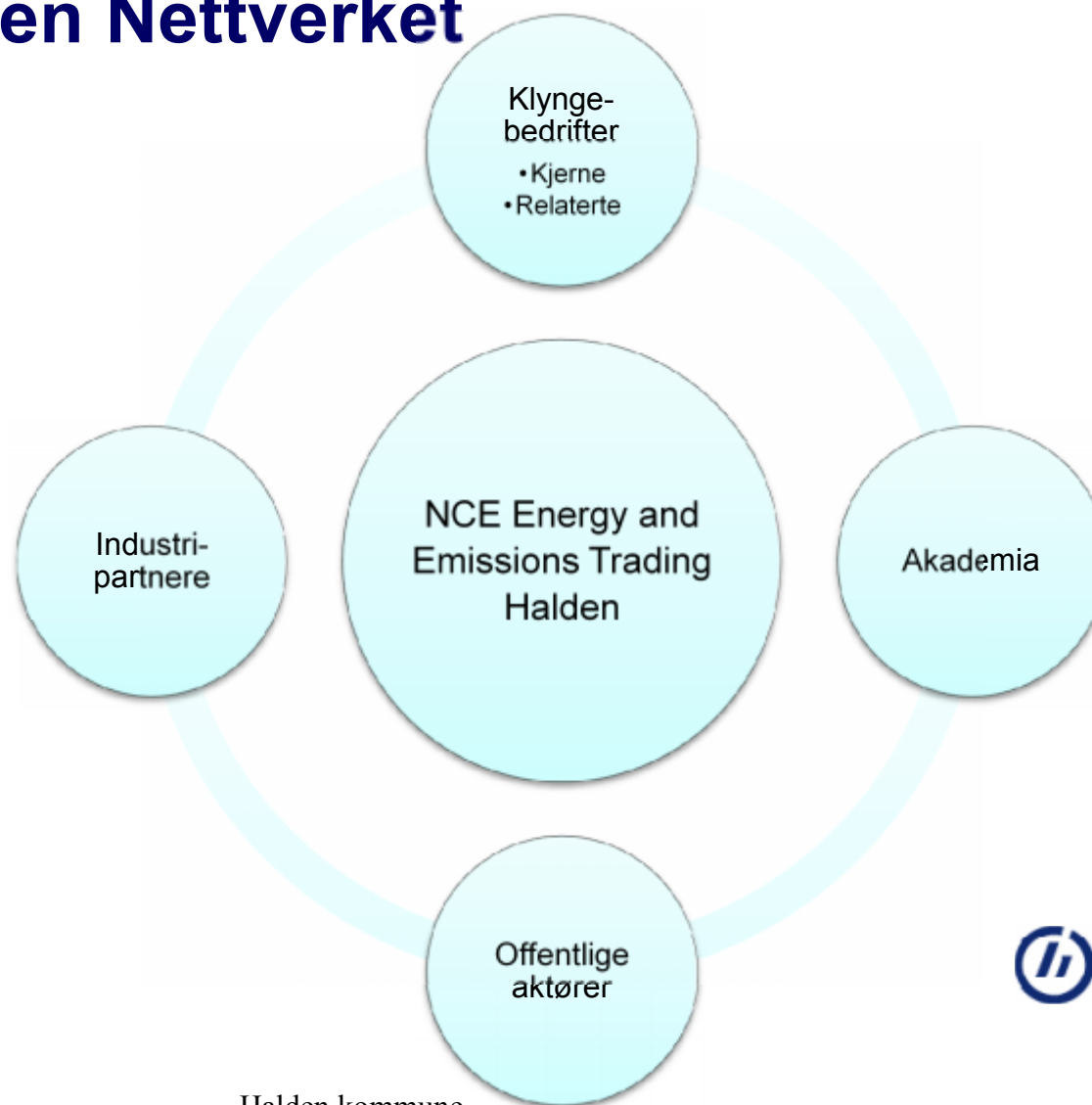
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NCE Halden Nettverket



Klyngebedrifter
 •Kjerne
 •Relaterte

Industripartnere

NCE Energy and Emissions Trading Halden

Akademia

Offentlige aktører



DnB NOR
Markets



Fortum



ØSTFOLD **ENERGI**

PointCarbon

montel **powernews**

Microsoft

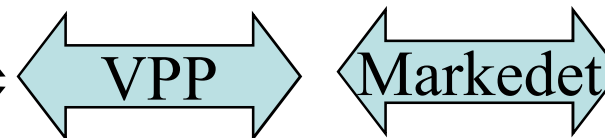
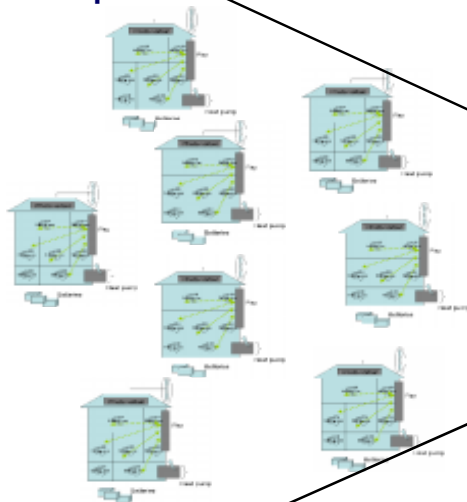
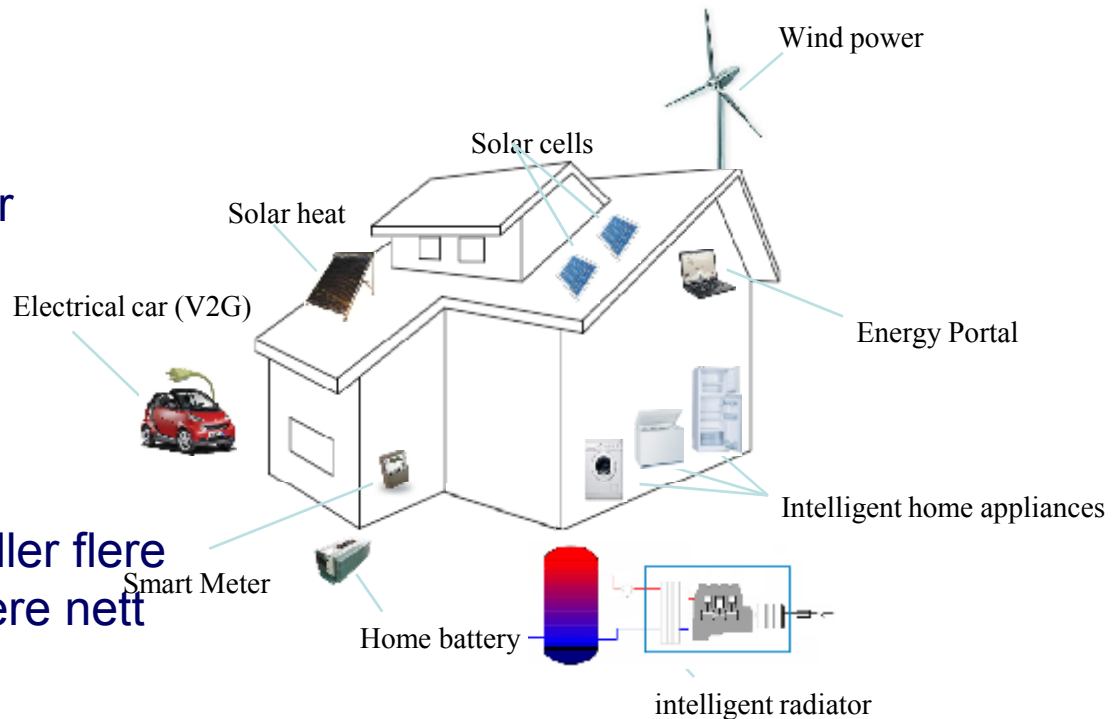
Halden kommune
 Østfold fylkeskommune
 Halden IT-forum
 Halden industriforening
 NHO Østfold
 LO Østfold

SIVA
 Innovasjon Norge
 Forskningsrådet



SmartGrids fokus: Nye roller og aktører

- Prosumers:
 - Enheter som er netto konsumenter i perioder og netto produsenter i andre perioder
- Virtual power plants
 - En aggregering av 1 eller flere prosumers i ett eller flere nett

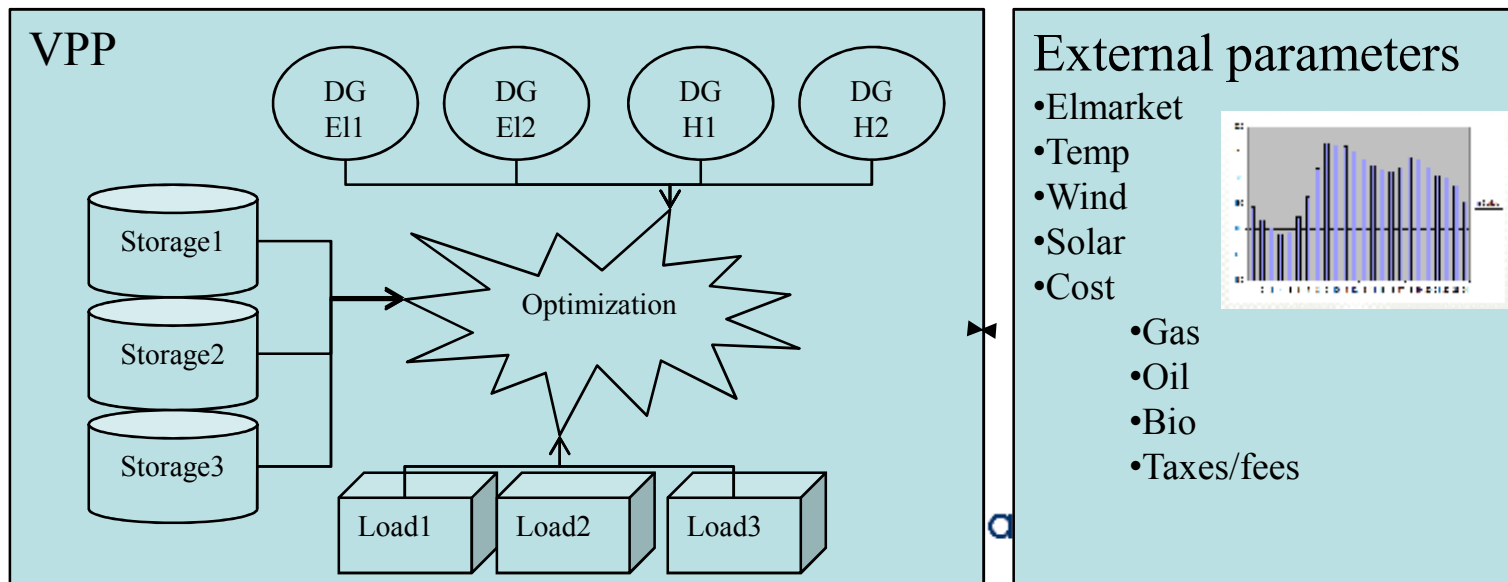
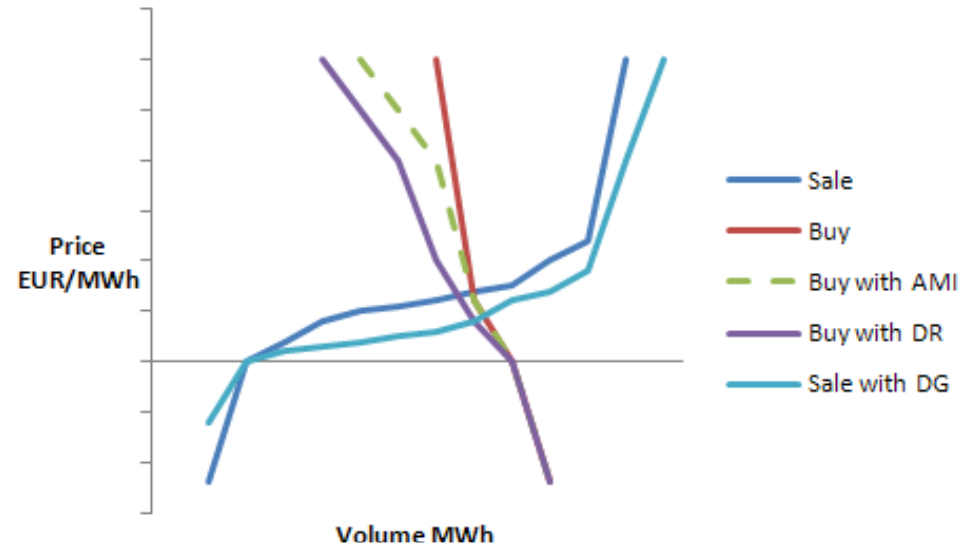


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Research challenges

- Bid curve elasticity
- Market design impact
- Technical and economical profit
- Profit distribution
- Business models
- Resource optimization
- Operational strategies



den

Hva gjør NCE Halden? Prosjekt 1

- Styr Smart i SmartGrids
 - 7,5 mill gjennom RENERGI-programmet
 - 3 års tidshorisont
 - Totalbudsjett 17,5 mill
 - Hovedmålet er innovative løsninger i et SmartGrid-konsept

Manage **Smart**
in **Smart** Grid



Fredrikstad
EnergiNett AS



Statkraft



Norske Skog



DigitalXalience

moreCom
one step ahead

Østfoldforskning

vaasa ett

IFE
Institutt for energiteknikk

Høgskolen i Østfold



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Project 2: Improsume



- Project title:

“IMPROSUME – the Impact of Prosumers in a SmartGrid based Energy Market”

- Time frame: 2 years starting from October 2010

- Budget: App. 1 mill EUR, 700.000 from ERA-Net

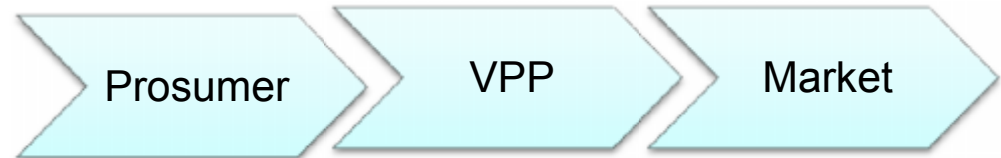
- Participants:

- Denmark: Aarhus School of Business, SEAS-NVE, NOE, GridManager
- Switzerland: University of St. Gallen, Bacher Energie AG
- Norway: NCE Halden (Inkubator Halden, UMB, HiØ, Navita Systems)



Project focus

- We will analyze the value chain



- Questions to be answered:
 - Denmark: "What is needed in order for the consumers to accept to be prosumers and give away control of appliances?"
 - Switzerland: "How should the business models look like and what are the implications?"
 - Norway: "What are the technical and economical effects and how should such a system be operated in an optimal way?"

