”DRR- Norway” project

IEA/DSM workshop Trondheim, 14 April 04

Ove S. Grande
SINTEF Energy Research

Vision

To improve Demand Side price sensitivity and to create "Regulation objects" from consumption as alternatives to investments in new production/ transmission capacity.

Market based Demand Response

Market Phases

Control Phases

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Spot Phase

Pre operational Phase

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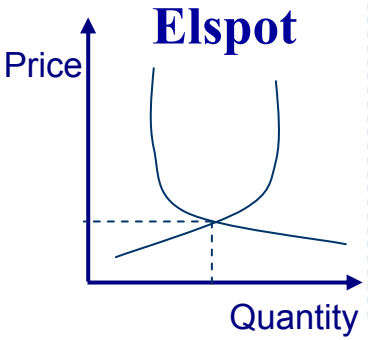
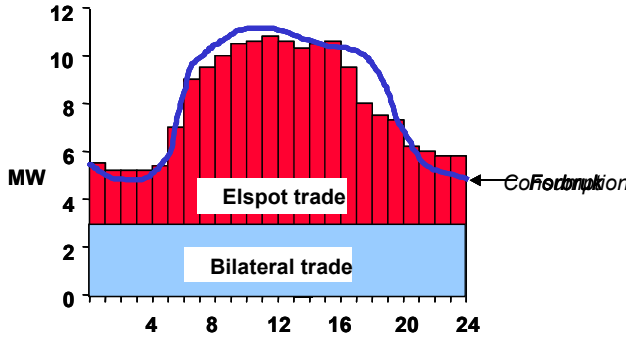
Operational Phase

2400



Production scheduling.
RPM bidding



Demand Response

Price-dependant load reduction

Remote controlled load reduction

Improved utilization of reducible loads. Main aspects (Norwegian case)

- Hourly metering
- Remote and/or local load control

Direct Communication

- Improvement in data management procedures

MVS/CIS

- Improvement in End User markets

Market Design

Values for Norway

- Potential improvement of demand response in the Nordic Elspot and Balancing Market
- Improved business models
- Development of new technology and tools for DRR
- Information exchange and access to professional network

Norwegian projects of relevance

- End-user Market (“Effekt sluttbrukermarked”) (1996-2000)
- Implementation of Demand Side Management in Oslo (1998-2001)
- IEA/DSM annex “DSB” (1998-2001)
- End user flexibility by efficient use of ICT (2001-2004)
- EU/SAVE - EFFLOCOM (2002-2004)
- Improving end user knowledge for managing energy loads and consumption (2003-2005)
- Load control in the balancing market – RKOM (2001-2006)
- Controlling power load in Oslo (2001-2004)

DRR-Norway
Participants - contributors

- ENOVA
- Statnett (Norwegian TSO)
- Statoil
- Norwegian Hydro
- Skagerak Nett
- Norwegian Electricity Industry Association (EBL)
- Troms Kraft

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- Technology Vendors
  - **Elink**
  - **Powel**

DRR-Norway
Project group

- SINTEF Energy Research (project management)
- E-CO Tech
- Elink
- Powel