Challenges of Zero Energy Buildings (ZEB) in the energy system through smart grid and DSM

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Electricity consumption 2012

Ref: Nordpool Spot (www.nordpoolspot.com)
Motivation and scope

• Changes in the national load profile for Norway?
  – By large depletion of Zero Energy Buildings (ZEBs)?)

• How will this affect the energy system?
  – How is peak load affected?
  – Will the price formation in the power market be altered?
  – How is Norway’s ability to trade capacity towards Europe affected?
Electricity consumption in ZEBs

- Solar thermal
- PV
- Heat accumulator
- VP
- Electricity demand
- Space heating and hot tap water demand
- Power System
- Net load profile
- Wood, pellets
- District Heat
Predicted heat load

- Winter week

- Autumn week

- Summer holiday
Total load profile

Net load profile

• NB! No load management
Acknowledgments