



# Energy Saving Obligations in Denmark

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# Main principles

- Electricity, natural gas, district heating and oil
  - Grid and distribution companies
- Annual saving target – 6,1 PJ/year – 1,5 pct.
- Large freedom to deliver in the best way
- Shall be direct or indirect involved in the implementation
  - Advice, energy audit, subsidies, etc.
  - Subsidies/"buying savings" being more important
- Agreements whole way from utility to consumer before savings are implemented
  - Only trading between utilities
- Implemented by agreement with utilities

# Savings – Where?

- Final energy consumption in all sectors except transport
  - Reduction of end-use consumption
  - Include local PVs and solar collectors – not biomass
  - Also consumers covered by ETS
  - CFL's and most households appliances are not accepted
- Loses in grids – especial district heating pipes
- Not efficiency improvement in district heating and power plants
  - But thermal solar plants for production of district heating are allowed

# Measurement of saving

- Final energy
  - In principle first year savings – not cumulative.
  - But savings are multiplied with a simple weighting factor
    - Reflect lifetime, primary energy, non-ETS
    - 1/2, 1 and 1,5

Two main methods:

## 1. Standard values

- Average saving are calculated for standard activities
- Primarily used in households

## 2. Specific calculation – engineering methods

- Used for all big project
- Especially industries, public sector etc.

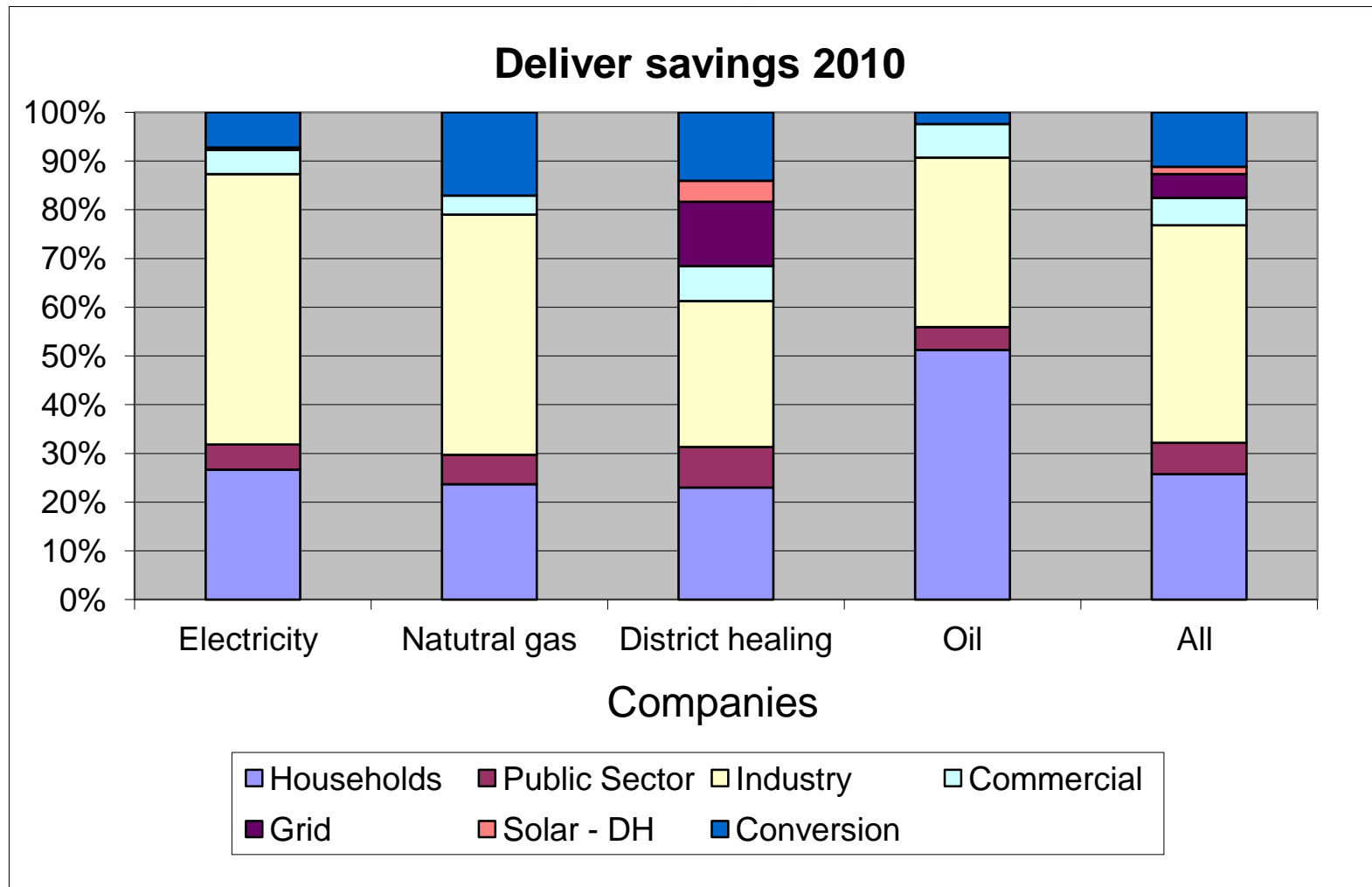
# Who do the job?

- The distribution companies are not allowed to do very much by themselves
  - Regulated monopoly companies
- Have to involve an actor
  - Very often a private engineering company, a plumber, a ESCO, etc.
  - Can be another company in the same group
- There can be several links from the utility to the consumer

# Delivered savings 2010

<b>TJ</b>	<b>Annual target 2010-2012</b>	<b>Reportet savings 2010</b>	<b>% of target</b>
Electricity companies	2.900	3.068	106 %
Natural gas companies	1.100	1.240	123 %
District heating companies	1.900	2.482	131 %
Oil companies	200	260	130 %
<b>I alt</b>	<b>6.100</b>	<b>7.050</b>	<b>116 %</b>

# Distribution of savings



# Costs

- Average utility cost 2010
  - Approx. 5,3 Euro cents per kWh first year savings
  - 0,53 Euro cent with an average lifetime on 10 years
  - Collected over the tariffs – cost-recovery!
- Very cost-effective program
  - Shown by independent evaluation
  - This includes cost of the consumers
- Administrative cost in DEA is very low
  - Verification etc. by the utilities
- A public benchmark for cost per kWh saved for all companies



# Conclusions

- Energy saving obligations for energy utilities
  - Is a very important element in the Danish energy saving strategy
  - Provides necessary help to implementation of savings in existing buildings and private enterprises
  - A stable way to finance energy savings activities
  - Higher target from 2013
- Make the rules simple
  - Reduce cost for administration and transactions
- Thanks for your attention