Energy Saving obligations and Saving Center in Denmark

Chief adviser Peter Bach

Workshop in Berlin
10 December 2009
Objectives and targets

- Reasons for energy efficiency
  - Climate change
  - Energy Security
  - Competiveness

- EU targets on
  - CO2 – non-ETS sectors
  - Renewable – also transport

- National
  - Long term: Independent of fossil fuels
  - 4 pct. reduction of primary energy in 2020
  - Annual savings: 1,5 pct. of final consumption
A cost-effective strategy

A combination of

- **Measures**
  - Normative, economic (incentives), information, R&D, help to implementation, etc.

- **Actors**
  - EU, national governments, regional and local authorities, energy utilities, producers, green organisations, etc.

- **Target groups**
  - Consumers, producers, installers, developers, etc.
Important types of measures

- Taxes on energy and CO2
  - Incentives to reduce consumption
- Efficiency obligations, standards, norms, etc.
  - Both at EU and national level
  - Especial buildings and products
- Campaigns, market transformation, voluntary agreements, etc.
- Help to realization of savings
  - Especial existing buildings and private entreprises
New Danish organisation

- Tasks for the public authorities
  - Regulation, including EU initiatives
  - Incentives, taxes, etc.
  - Follow-up, monitoring, evaluation etc.
  - Primary Danish Energy Agency

- Campaigns etc. – General tasks
  - All sectors and end-uses, except transport
  - New Center for Energy Saving

- Help to implementation
  - Primarily energy distribution companies

- Coordination
  - New Energy Saving Council
  - Danish Energy Agency
New organisering

Coordination and public tasks
Danish Energy Agency

Energy Saving Council

Campaigns, markets transformation, etc
Center for Energy Savings

Help to implementation of actual savings
Energy Utilities
Electricity Saving Trust

- Independent unit in the Ministry of Climate and Energy
- Electricity Savings in households and the public sector
- Campaigns, market transformation, pull-push
- Financed by a special tax on electricity
  - 0,08 Euro cent per kWh
- Will be transformed to a Energy Saving Center
  - Cover all sectors and end-uses (except transport)
- More focus on coordination with other measures
Involvement of energy utilities

- First DSM obligation for electricity utilities were introduced in 1995
- Natural gas and district heating included from 2000
- Focus on free advice, campaigns, etc.
- Industries and other private enterprises one of the main target groups
- Obligation with annual targets were introduced in 2006
- Higher target and new rules from 2010
Utilities saving obligations

- Cover electricity, natural gas, district heating and oil
- Set by law (not oil)
- But implemented by a voluntary agreement
- Grid and distribution companies
- Danish Energy Agency take care of the basic administration
Main principles

• Annual saving target
  • In the agreement for the sectors as a whole
• Large freedom to deliver in the best way
• Only count savings where the direct or indirect are involved in the implementation
  • Additionalitet is a difficult issue
• Involvement can be advice, energy audit, subsidies, etc.
• Agreement whole way from utility to customer before savings are implemented
Target

- The main principle:
  - First year savings – not cumulative.
  - Final energy
- 2006-2009:
  - 0,7 pct. of consumption in the sectors included
- 2010-2012 (2020):
  - 1,2 pct. of final consumption in the sectors included
- From 2011:
  - Simple weighting factor will be introduced
  - Will reflect lifetime, primary energy, CO2/non-ETS
## Delivered savings

<table>
<thead>
<tr>
<th>Category</th>
<th>Savings compared with target 2006 - medio 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity companies</td>
<td>112 %</td>
</tr>
<tr>
<td>Natural gas companies</td>
<td>115 %</td>
</tr>
<tr>
<td>District heating companies</td>
<td>109 %</td>
</tr>
<tr>
<td>Oil companies</td>
<td>103 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>111 %</strong></td>
</tr>
</tbody>
</table>
Savings – Where?

- Final energy consumption in all sectors except transport
  - All end-uses
  - Include local renewable
  - Also consumers covered by ETS

- Loses in grids – especial district heating pipes

- Not efficiency improvement in district heating and power plants
  - But thermal solar plants are allowed
Distribution of savings

Source: Danish Energy Agency

Figure 1: Accumulated savings divided by sector (2006-medio 2009)

Figure 2: Accumulated savings divided by energy sources (2006-medio 2009)
Measurement of saving

Two main methods

• **Standard values**
  • Average saving are calculated for standard activities
  • Primarily used in households

• **Specific calculation – engineering methods**
  • Used for all big project
  • Especial industries, public sector etc.

• Change of behavior, information and market transformation will almost disappear from 2010
Verification

- **Main principle:**
  - The utilities are responsible for verification, documentation and reporting
  - Independent audit and quality control are required
  - DEA can do special control of the documentation

- Standard values are approved by DEA
- Utilities are responsible for specific calculations
Who do the job?

• The distribution companies are not allowed to do very much by themself
  • Regulated monopoly companies
• Have to involve an actor
  • Can be an other company in the same group
  • But is very often a private engineering company ore an plumber
• There can be several links from the utility to the customer
Costs

- **Average utility cost 2006-2009:**
  - Approx. 4,5 Euro cents per kWh first year savings
  - 0,45 Euro cent with an average lifetime on 10 years
- **Evaluation shows that is very cost effective**
- **Administrative cost in DEA is very low**
  - Verification etc. by the utilities
  - Only 2-3 persons in DEA
Development

- Will be more market oriented
- A market price on savings will come
- External actors will be more involved
  - Utilities role will more be to make the right contracts
- Subsidies or financial incentives will be more important
- The mail focus areas will be existing buildings and private enterprises
Conclusions

- A clear organisation with distribution of tasks and coordination is important
- Campaigns etc. to support implementation is important
- Energy utilities can play an important role
  - Way to raise money
  - Make the rules simple

- Thank you for your attention