

## MEMO

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## Intensified Energy Saving Measures

### Introductory description of the measure

The annual energy saving target will be increased to 1.40 % compared to the present target of 1.15 % of final energy consumption annually to 2013. At the same time will transmission and distribution losses be included in the basis for calculation of the annual energy saving target. Taken together, this increases the annual energy saving target from 7.5 PJ to 9.6 PJ, i.e. an average increase of 2.1 PJ over the period 2008-13.

The background for the increased saving target is that there still is a big cost-effective saving potential. There is also a potential for reducing the transmission and distributions losses, especially in the district heating system. It is therefore natural to include these losses in the distributions companies' energy saving obligations.

As part of the Political Agreement, the following measures are applied to deliver the increased energy savings:

- In the period 2008-11, an annual DKK 20m will be spent on a new Center for Energy Savings in Buildings including energy saving campaigns, education of construction companies, etc. This will be targeted towards energy savings in existing buildings where a large potential exists.
- From 2010 the energy saving obligations of electricity distribution, gas distribution, district heating and oil supplies is increased from the present 3 PJ/year to 5.4 PJ/year. This increases the total effect to 1.25 % per year. It is expected that this will reduce the effect of some of the other initiatives, cf. table 1.
- From 2010, the energy savings shall be further increased by 1.0 PJ per year, corresponding to the target increase from 1.25 % to 1.40 % annually. The precise implementation of this increase vil be decided finally after the agreed 2008 evaluation of the entire energy saving programme.

**(2) “[...] the status of [planning or] adoption of relevant legislation, agreements, incentive programmes, etc. and has to address the period for which full additional reduction effects are expected;”**

The intensified energy saving measures is decided by the government and supported by a broad majority in the Danish Parliament.

The funds for campaigns and the Center for Energy Savings in Building will be reserved on

the annual State Budgets for 2008. The funds can be used under existing legislation (Act no. 129 of 25 February 1998 an State Subsidy to Product-based Energy Savings).

The increased company obligations will be implemented through orders to the individual companies. The increased effort can take place under existing legislation. After the 2008 evaluation further steps towards higher administrative effectiveness and market orientation will be considered.

Implementation of the extra 1.0 PJ of annual savings will take place following the 2008 evaluation, possibly as a further increase in the company energy saving obligations. The decision to increase the savings by 1.0 PJ annually is part of the Political Agreement. Only the technical implementation remains to be decided in 2008. If not other options are possible will the extra targets be given to the distribution companies.

It is estimated that the increase of the company energy saving obligations will result in extra costs of DKK 400-450m. This includes costs to achieve the extra 0.7 PJ. The costs are paid by the companies. This is expected to lead to increased grid and distribution tariffs to some extent.

**(3) “[...] indicate the approximate level of current greenhouse gas emissions represented by the activity targeted by each policy or measure and include quantified annual emissions reductions for the period 2008 to 2012 [...];”**

More than half of the total Danish CO<sub>2</sub>-emissions are related to the final energy consumption in households, industry, commercial and transport. Several studies show that there is a big cost-effective saving potential.

The effects of increased energy savings measures are estimated in table 1.

**Table 1: Effects of increased energy savings**

	2008	2009	2010	2011	2012	Average 2008-12
<i>Annual savings, PJ</i>						
Included in BAU projection	7.5	7.5	7.5	7.5	7.5	7.5
<i>New measures, PJ</i>						
Campaigns and Center for Energy Savings in Buildings	0.3	0.3	0.3	0.3	0	0.24
Increased obligations on companies	0	0	2.45	2.45	2.45	1.47
To be implemented after the 2008 evaluation	0	0	1,0	1,0	1,0	0,60
Correction for double counting*	0	0	-0.75	-0.75	-0.75	-0.45
<b>Total after Political Agreement</b>	<b>7,8</b>	<b>7,8</b>	<b>10,5</b>	<b>10,5</b>	<b>10,2</b>	<b>9,36</b>
<i>Increase</i>						
Annual savings, PJ	0,3	0,3	3	3	2,7	1,86
Accumulated savings, PJ	0,3	0,6	3,6	6,6	9,2	4,1
Share outside ETS	50%	50%	50%	50%	50%	50%
CO <sub>2</sub> reduction, 1000 tonnes**	9,75	19,5	117	215	300	132

\* The increase of company obligations will to some extent lead to implementation of savings already included in the BAU projection.

\*\* An emissions factor equal to the average of oil and natural gas is used.

Table 1 shows that the new energy saving measures under the Political Agreement lead to a CO<sub>2</sub> reduction outside the ETS sectors of 120,000 tonnes as annual average in the period 2008-12, compared to the BAU projection used in the Danish NAP.

Calculations show that the increased energy savings in general do not lead to extra socio-economic costs – and that they in general will be economically viable for consumers.

**(4) “provide assumptions and methodologies used for the quantification of the effects of indicated policies and measures and provide references to sources for this information;”**

The major parts of the effects of the new measures are linked to increased obligation given to the energy distribution companies. There is established a system for verification and documentation of savings implemented by these companies.

The assumed effect of the energy saving center is based on experiences with saving activities.

The calculation of the cumulative savings is based on general assumption of lifetime of different types of savings.

A little less than 50 % of the final energy demand is outside the ETR sectors. On the other hand the largest and most profitable energy savings are in buildings heated by oil or natural gas - and in small to middle-sized companies. On this background it is estimated that 50 % of the energy savings will be made outside the ETS sectors.

The final energy consumption is primarily oil and natural gas. There is therefore used an emissions factor equal to the average of oil and natural gas.

**(6) “indicate how policies and measures [planned] are reflected in the greenhouse gas emissions projections presented in the plan;”**

The new savings are not included in the projects in the plan.

**(7) ” indicate any developments and trends [...] that could potentially counteract the reduction effects [...];” It is important to include a discussion of the possible risks**

There are no trends that counteract the efforts to increase the actual savings. To deliver energy savings will always be uncertain, but the risks to in relation to the calculated effects are considered to small.

**(8) “indicate any overlapping effects among important measures [...] and how such double-counting effects have been eliminated in the estimation of quantitative reduction effects”, so that the overall effect of the measures included are smaller than the sum of the expected individual effects of the individual measures.**

The increased saving obligation for the distribution companies will to some extent lead to implementation of savings already included in the BAU projection. There is therefore made a correction for double counting.