

IMPLEMENTATION OF THE ENERGY EFFICIENCY DIRECTIVE

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Construction and energy efficiency

Communication to the Commission on methods for operating energy efficiency obligation schemes

Under the Energy Efficiency Directive (2012/27/EU), Member States are required to inform the Commission by not later than 5 December 2013 how they intend to implement Article 7 of the Directive.

If a Member State wishes to operate energy efficiency obligations as set out in Annex V, paragraph 4, the Member State in question is required to notify the Commission of their detailed methodology for such operation by 5 December 2013.

If a Member States wishes to operate the alternatives set out in Article 7(9), they are required under that provision to notify the policy measures they plan to adopt.

Denmark consequently wishes to notify the following:

Denmark wishes to fulfil the obligations of Article 7 by means of energy efficiency obligations. Such obligations have existed in Denmark since 2006. They are contained in the energy-policy agreement of 22 March 2012 and will remain in force up to 2020.

At the present time, Denmark does not expect to apply any other instruments in order to meet these obligations. There is therefore no problem of an overlap between different instruments.

The following information may be provided with regard the various points of the first part of Annex V, paragraph 4:

a) Obligated, participating or entrusted parties, or public implementing measures

Energy efficiency obligations are applicable under the Electricity Supply, Natural Gas Supply and Heating Supply Acts to all electricity grid operators, natural gas distributors and district heating companies. There is therefore a legal basis for imposing an annual energy efficiency obligation on all of these companies, although in practice their action is determined on the basis of an agreement with the branches/companies concerned. All of the companies within these branches have signed up to this agreement. In addition to the branches referred to, the oil sector is also party to the agreement, and thus also has an

annual energy efficiency target. The possibility of exempting small companies has not been used.

The companies involved are as follows:

- Some 70 electricity grid operators
- 3 natural gas distributors
- Some 400 district heating companies.
- The oil sector, which operates on behalf of six oil companies.

The agreement of 13 November 2012 on energy saving by energy companies is attached for your information (both in Danish and in an unofficial translation).

The agreement with branches/companies only lays down the annual energy efficiency target for individual branches and it is therefore up to the branches to allocate the target between individual companies.

b) Target sectors

As indicated in point (a) above, energy efficiency obligations are applicable to electricity grid operators, natural gas distributors and district heating companies. It has also been agreed that oil companies will also contribute.

Energy savings may in principle be achieved at the level of end use in all sectors and for all end uses in Denmark. In the area of transport, however, energy savings from only a few limited activities can at present be taken into account.

Apart from energy savings at the level of end use, energy savings in transmission and distribution networks and in connection with the establishment of new collective solar farms for district heating production may be taken into account.

c) The level of the energy saving target or expected savings to be achieved over the whole and intermediate periods

The basis for calculating the Danish target under Article 7(1) is shown in Annex 1. Official Danish energy statistics ('Energistatistik 2012'), published in November 2013, are used. It is these data on which the Danish reports to Eurostat are based.

When calculating the Danish target, energy used for transport is not taken into account. Consumption for non-energy purposes is also disregarded. Otherwise, all end energy use is included in the calculation of the target.

In accordance with Annex I, the Danish target under Article 7(1) is calculated as follows:

- Annual target – 1.5% 6.18 PJ
- Savings in 2020 (7 x 1.5%) 43.23 PJ
- Accumulated savings 2014-2020 (28 x 1.5%) 172.93 PJ

Under the energy-policy agreement of 22 March 2012, the target for the Danish energy savings is 10.7 PJ annually, corresponding to 2.6%, for 2013 and 2014, and 12.2 PJ, corresponding to 2.96%, for 2015-2020. The Danish obligations are thus considerably higher than required by the Directive.

Savings towards meeting the obligations under Article 7 are therefore expected to be more or less evenly distributed over the period.

Individual branches are required each year to submit information on the energy savings they have achieved and their breakdown by sector, energy type, etc. The reporting requirements are laid down in Annex 8 to the agreement of 13 November 2012 on energy saving by energy companies (attached).

Denmark does not therefore wish to make use of the exceptions provided for in Article 7(2)(a)(b) and (d).

Under the Danish system, obligated parties may to a certain extent take account of energy savings in transmission and distribution networks and in connection with the establishment of new collective solar farms for district heating production. These savings, which are covered by the exception in Article 7(2)(c), are expected, on the basis of experience, to be much lower than 25% of the total energy savings.

As can be seen from Annex 1, the Danish target will imply new energy savings in 2020 of 83.9 PJ and total savings accumulated over the period 2014-2020 of 331.1 PJ, provided that all of the savings implemented will have a lifetime of at least 7 years.

These savings are almost twice the level of the Danish obligations under Article 7(1). Even if a small portion of the savings have a lifetime of less than 7 years or are not achieved at the level of end use but are covered by the exceptions in Article 7(2)(c), Denmark is clearly meeting its obligations with the targets set.

d) *The duration of the obligation period and intermediate periods*

The current agreement with energy companies concerning their energy saving efforts lays down the overall target up to 2020, but the specific rules, etc., including on how the target is to be distributed between branches (electricity, natural gas, district heating and oil) are applicable only for the period 2013-15. During 2015, the detail rules from 2016 onwards will be determined following an independent evaluation of the scheme, which will come to an end at the beginning of 2015.

e) *Eligible measure categories*

The obligated companies can only be credited with and notify savings which the companies are involved in achieving through specific activities either themselves or on the basis of agreements with operators. There must therefore be a direct and clear link between the activity and savings. Companies may not notify savings arising without their involvement. There must be an agreement concerning involvement before realisation of the saving begins.

There are therefore clear rules stipulating that the obligated parties' activities must have significantly contributed to achieving the energy savings in question.

The obligated parties' involvement can take various forms. It might take the form of advice or a grant to the final customer, or indeed a combination thereof.

The requirements applicable to companies' involvement are set out in more detail in Annex 3 to the attached agreement on energy saving by energy companies.

This defines the activities which obligated network and distribution companies must themselves implement. A very large proportion of these activities are therefore implemented by operators which have agreements with one of the obligated companies and are therefore liable to implement the activities for end consumers. These operators might, for example, be installers, craftsmen, consultant engineers, energy service companies or energy trading companies.

As indicated at point b), energy savings within all end-use sectors and for all types of energy can be taken into account. This therefore also includes energy savings in companies covered by the ETS. However, there are a number of areas which are excluded because it is thought that the activities in question will largely be implemented without the involvement of obligated parties. Specifically, in some cases they are excluded by setting the standard value at zero.

An energy saving achieved through activities which increase efficiency and thus reduce energy consumption can be taken into account. Examples include improved insulation or the installation of more energy-efficient windows. Energy-efficiency improvements in terms of the energy consumption of industry also fall within this category. Replacing old energy-efficient boilers with new high-efficiency boilers can therefore be regarded as an energy-saving measure.

Energy savings in connection with converting from one type of energy to another also count if this leads to lower energy consumption. This might, for example, include converting from an oil-fired boiler to district heating or a heat pump.

Some savings achieved as a result of installing new boilers or converting from one type of energy to another cannot be taken into account for the purposes of complying with the requirements of Article 7 because the technologies are - or soon will be - covered by ecodesign requirements. In assessing whether targets have been met, the savings achieved under the Danish system will therefore be adjusted.

- f) *Calculation methodology, including how additionality and materiality are to be determined and which methodologies and benchmarks are used for engineering estimates*

Savings are determined either using standard values (deemed savings), by means of a specific calculation of the saving (scaled savings) resulting from the activity or according to the effect of a specific market impact (surveyed savings).

Determination on the basis of standard values is applied in the case of smaller, standardised activities. These savings will typically be found in homes or other buildings. If a standard value exists for a given saving, this will be applied.

A specific calculation is used in areas in which no standard value exists. These will typically be larger, integrated projects in commercial firms or public institutions. If a specific calculation is carried out in respect of parts of an overall project, the entire project will be assessed on a specific basis, including as regards the effect of initiatives for which standard values exist.

A verifiable effect of specific market impact, i.e. a reduction in energy consumption compared to a baseline, may be taken into account. This effect should, as far as possible, be determined using standard values.

The various methods are described in more detail in Annex 6 to the agreement on energy saving by energy companies.

The rules are designed to prevent the same energy saving from being taken into account by several parties. The end consumer must approve the notification of the specific energy saving to a specific obligated company and be informed that, in so doing, the energy saving cannot be sold to another party. The sampling and the evaluations carried out have not identified any problems with duplication.

The evaluations show that the energy savings determined are new and that they have generally been determined correctly. The obligated parties are involved and have contributed to achieving the energy saving.

However, some of the energy savings will be implemented within a reasonable time frame without company involvement (free riders). It is very difficult to calculate the proportion of free riders, but the latest evaluations show that some 50% of energy savings in industry and some 80% of energy savings in buildings will be implemented within three years.

A series of steps have been taken to reduce free riders and to correct those specific projects that will nevertheless be implemented.

On the one hand, the annual target for 2009 has been increased by 15% as compared to the political target set. This was because some of the determined energy savings would nevertheless be implemented. This increase has been incorporated into the current agreement.

On the other hand, the effect of a series of initiatives which are deemed to be without involvement by energy companies may not be taken into account. For example, the standard values are set to zero for most household appliances and for the changeover to CFLs, etc. The effect of awareness-raising and information campaigns cannot be taken into account either.

Finally, a series of standard values have been reduced by 10-15% in order to compensate for the fact that some of the activities carried out will nevertheless be implemented.

g) *Lifetimes of measures*

Under the Danish system, the effect is determined in connection with the implementation of specific energy savings starting with the saving in the first year.

However, the saving in the first year is weighted by a simple factor which primarily reflects the saving's lifetime but also the gross energy consumption and expected CO₂ impact of the saving, particularly with regard to whether the saving is or is not covered by emissions trading.

When converting from one type of energy to another, conversion factors reflecting the gross energy consumption are applied. The prioritisation and conversion factors and how they are applied in practice are set out in Annex 5 to the attached agreement on energy saving by energy companies.

On the basis of the notified data, it is thought that the average lifetime of energy savings is at least 10 years. As regards the energy savings notified in 2012, only 6% had a lifetime of less than 4 years, as a result of which they were multiplied by a factor of 0.5%. 48% had a lifetime of over 15 years.

h) *Approach taken to address climatic variations within the Member State*

Under the Danish energy saving scheme, energy savings are in principle determined on the basis of a 'normal year'. For energy savings relating to heating consumption in buildings, standard values are generally applied which are calculated on the basis of the climate in a normal year. The scheme does not have any special rules to take account of climatic variations.

i) *Quality standards*

Obligated network and distribution companies are responsible for ensuring that their documentation of energy savings is correct and meets the requirements laid down. To this end, companies are required to implement quality assurance. This ensures that the company's documentation and reporting, including documentation concerning savings implemented by subcontractors or third parties acting on the company's behalf, are correct and meet the requirements laid down.

As a minimum, quality assurance should focus on:

- The size of the energy saving being determined in accordance with the applicable rules and specific calculations being professionally substantiated;
- Energy savings being implemented in respect of the relevant consumption and being able to be defined as an energy saving within the meaning of the agreement;
- The company having been involved directly, financially or via a third party before the saving is realised;

- The company having obtained the right to report;
- Energy savings being realised and correctly documented;
- Energy savings having been correctly notified;
- Documentation of the entire contractual chain from end users where the saving is implemented, to network companies, via the operator(s)/subcontractor(s) which have achieved the energy saving on the network company's behalf;
- Compliance with the requirements of the agreement by operators acting on the network company's behalf;
- Any errors linked to individual cases or the company's procedures relating to compliance with the agreement or Order being corrected.

j) *Monitoring and verification protocols and how the independence of these from the obligated, participating or entrusted parties is ensured*

As part of their quality assurance, obligated companies must each year carry out an audit to ensure and demonstrate that the notified savings have been realised and documented in accordance with the agreement and the Order.

In alternate years, the audit may be carried out internally by the company itself, with intervening audits being carried out externally by an independent auditor. The external audit must be carried out by a person/company which is independent of the network/distribution company and which has undergone basic auditing training and has experience of carrying out a minimum of two audits together with an experienced auditor.

The company must document that both the internal and external audits have been carried out, indicating how many and which cases have been selected. This documentation must be kept for five years. In connection with their annual notifications, companies are required to indicate whether an internal or an external audit has been carried out in the year in question.

All obligated companies must submit annual reports to the Energy Agency [*Energistyrelsen*] indicating whether an internal or an external audit has been carried out.

In addition to the obligated parties' quality assurance and audits, once a year the Energy Agency carries out impartial sampling across all network and distribution companies involved in order to check whether they are meeting the requirements contained in the agreement and the Order. Sampling covers all intermediaries from the reporting company up to the final consumer in respect of whom the saving has been implemented.

k) *Audit protocols*

Apart from the requirements described above at point j), there are no special audit protocol requirements for the energy savings established.

All obligated companies are required each year to inform the Energy Agency of their costs in connection with complying with their energy saving obligations. These costs must be covered by the general requirements applicable to the auditing of the companies' accounts.

- 1) *How the need to fulfil the requirement in the second subparagraph of Article 7(1) is taken into account.*

See point (c) above.

Annex 1: Data used to calculate targets

Final energy consumption

Source: Energy Statistic 2012

<http://www.ens.dk/info/tal-kort/statistik-nogleletal/arlig-energistatistik>

| PJ | 2010 | 2011 | 2012 | Avg. |
|--------------------------------|-------------|--------------|--------------|--------------|
| Households | 194.1 | 197.4 | 189.1 | 193.5 |
| Commercial and Public Services | 83.9 | 84.9 | 81.0 | 83.3 |
| Agriculture and Industry | 136.5 | 138.3 | 130.1 | 135.0 |
| | 414. | | | |
| Total | 5 | 420.6 | 400.1 | 411.7 |
| Transport | 209.7 | 210.2 | 204.8 | 208.2 |
| Non-Energy use | 11.0 | 12.4 | 11.5 | 11.6 |
| | 635. | | | |
| Total | 3 | 643.1 | 616.5 | 631.6 |

PJ

1.% of final energy, excluding transport and non-energy

6.18

Saving in 2020

43.23

Cumulative saving 2014-2020

172.93

Cumulative savings with the Danish energy saving obligations

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|--------------|------|------|------|------|------|------|-------------|--------------|
| 2014 | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 | |
| 2015 | | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | |
| 2016 | | | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | |
| 2017 | | | | 12.2 | 12.2 | 12.2 | 12.2 | |
| 2018 | | | | | 12.2 | 12.2 | 12.2 | |
| 2019 | | | | | | 12.2 | 12.2 | |
| 2020 | | | | | | | 12.2 | |
| Total | | | | | | | 83.9 | 331.1 |