

**Agreement of 13 November 2012 on**  
**the energy saving efforts of energy companies**  
**entered into between**  
**the Minister for Climate, Energy and Building and**  
**the grid and distribution companies for electricity, natural gas, district**  
**heating and oil, represented by**  
**the Danish Energy Association**  
**HMN Naturgas, DONG Gas Distribution, Naturgas Fyn Distribution,**  
**the Danish District Heating Association, the Association of Danish Combined**  
**Heat and Power Plants (FDKV) and**  
**the Danish Oil Industry Association (EOF)**

This agreement is a follow-up to the political agreement of 22 March 2012 on Danish energy policy 2012-2020.

From 1 January 2013, this agreement will replace the agreement of 20 November 2009 between the Minister for Climate and Energy and the grid and distribution companies for electricity, natural gas, district heating and oil, on the companies' future energy saving efforts.

The energy policy agreement of 22 March 2012 requires increased energy efficiency that minimises energy waste and energy consumption in all sectors.

With regard to energy saving efforts by energy companies, the energy policy agreement stipulates

- that the energy saving obligations of energy companies be increased by 75% in relation to efforts in the period 2010 to 2012, corresponding to a total of 10.7 PJ annually in the period 2013 to 2014, and by 100%, corresponding to a total of 12.2 PJ annually in the period 2015 to 2020;
- that the efforts of the companies in connection with the increased obligation be targeted at existing buildings and industries; and
- that the goal is to establish a cost-effective agreement with the energy companies, which ensures that efforts are exposed to market mechanisms.

Furthermore, the energy policy agreement of 22 March 2012 includes the following points which have significance for the framework for the energy companies' energy saving efforts:

- A pool of DKK 250 million in 2013 and of DKK 500 million annually from 2014 to 2020 is to be earmarked to promote efficient use of renewables in production processes.
- An overall strategy is to be prepared for energy renovation of the existing building stock. The strategy will be presented to the parties behind the agreement before the end of 2013.

- Current campaign activities by the Danish Energy Saving Trust will be concluded and the remaining activities will be transferred to the Danish Energy Agency.

This agreement, which realises the policy agreement's point about the energy saving obligations of energy companies, sets the framework and principles for how sectors and companies are to achieve energy savings. If required, the principles in this agreement will be amended through a renegotiation of the agreement.

There is no law obliging oil companies to contribute to realising energy savings or stipulating the imposition of energy saving obligations on oil companies. However, within the framework of the sector's special conditions, the oil companies would like to contribute actively to future energy saving efforts. In connection with the agreement, the oil industry is willing to collaborate with the authorities in the energy and transport area to ensure charging possibilities for electric and plug-in hybrid cars along Danish motorways. The contractual details for the individual motorway installations will have to be agreed between the individual concession owner and the Danish Road Directorate.

Bearing this in mind, the parties have agreed the following framework for the energy companies' energy saving efforts:

## **1. General framework of the agreement**

- 1.1 Grid and distribution companies are to promote cost-effective savings for the benefit of consumers, enterprises and society. The extent of these savings is specified in more detail in section 4 of this agreement.
- 1.2 The general idea is that efforts by the grid company or the distribution company are to help realise more energy savings, and that they are to focus particularly on realising savings in end-use consumption; savings that would otherwise not have been realised at this stage without the companies' efforts. As a step towards achieving this, efforts must directly or indirectly lead to benefits for end-use consumers, so that it becomes easier and/or cheaper for end-use consumers to carry out energy savings. The major part of the costs incurred by the grid company or the distribution company in connection with efforts to achieve these savings, are therefore to be paid directly or indirectly by the end-use consumer.

## **2. Time frame for the agreement**

- 2.1 The overall framework and targets of this agreement apply for the period 2013-2020.
- 2.2 However, the specific guidelines etc. apply for the period from 1 January 2013 to 31 December 2015. The allocation of targets under the agreement, the specific guidelines etc. will be agreed for the subsequent period during 2015. This will be on the basis of an independent evaluation of efforts, to be concluded at the beginning of 2015, see section 17.

## **3. Consumption included**

- 3.1 Savings efforts by grid and distribution companies are to aim at energy savings in final energy consumption (end-use energy consumption) in Denmark, as well as reduction in losses in transmission and distribution grids. The consumption included, and the possibilities for including savings in energy consumption for transport, are specified in more detail in annex 1.

## **4. Savings targets and obligations**

- 4.1 This agreement repeals the targets, obligations and guidelines set out in the agreement of 20 November 2009 for the companies' future energy saving efforts.
- 4.2 Under the political agreement of 22 March 2012, the overall target for grid and distribution companies' efforts is 10.7 PJ annually in the period 2013 to 2014 and 12.2 PJ annually in the period 2015 to 2020. This implies an increase of 75% and 100% respectively, compared to the target of 6.1 PJ in the period 2010 to 2012. To compensate in part for the fact that not all of the savings achieved are additional, the target for 2010 to 2012 in the 2009 agreement was increased by about 15% relative to the target of 5.4

PJ/year set in the energy policy agreement of 21 February 2008, see annex 12. This increase has been included as a part of the targets under this agreement.

- 4.3 As part of efforts to meet these savings targets, in 2013 to 2015, the electricity grid companies as well as the natural gas, district heating and oil companies will on average (see section 4.2) achieve the following annual energy savings, calculated using the prioritisation and conversion factors stated in section 8 and annex 5:

**Table 1: Allocation of energy saving target**

PJ	2013-2014	2015
Electricity grid companies	4.5	5.0
Natural gas companies	2.0	2.3
District heating companies	3.7	4.3
Oil companies	0.5	0.6
Total	10.7	12.2

- 4.4 Achievement of the energy saving obligations by grid and distribution companies is measured solely on the basis of the savings target described in section 4.3, table 1.
- 4.5 For electricity, natural gas and district heating companies, the savings targets (see section 4.3) apply as a whole to all companies in sectors covered by the obligation pursuant to the Supply Acts. This includes companies that are not a member of one of the sector associations. It is assumed that all these companies will help to achieve savings targets, and that electricity companies, gas companies and district heating companies themselves will agree the allocation of the sector obligation between companies.
- 4.6 The Minister will set binding energy saving targets, within the sector's overall targets, for the electricity companies, natural gas companies and district heating companies not wishing to enter into the sector agreement, or which withdraw from the agreement. Furthermore, the Minister will set the framework for tasks for these companies, together with rules for documentation, reporting, verification and settlement of common costs. This framework will correspond to the obligations under this agreement, so that these companies contribute proportionally to meeting savings targets.
- 4.7 Oil companies' savings targets are apportioned proportionately between the companies according to their market share of the heating oil market. The sector's savings target will be indexed in the future according to developments in sales of heating oil. The basis for the savings target of 0.5 PJ in 2013 is the sales of heating oil in 2010. Indexation means that the savings target from 2013 onwards will be adjusted proportionately according to changes in the sales of fuel oil compared to 2010. However, changes to targets will only be made if the accumulated sales of heating oil have changed more than plus or minus 5% compared to sales of 2010.

4.8 Savings targets for sectors, see section 4.3, represent an average over the term of the agreement, see section 2.1, and over or under coverage may be transferred between individual years. At the end of a calendar year, there may be under coverage of no more than 35% of the average annual target. However, at year end 2010, under coverage may be up to 45%.

## **5. Freedom of methodology**

- 5.1 In order that they can achieve the agreed savings targets at the lowest possible costs, grid companies and distribution companies have freedom of methodology within the framework allowed by law, the agreement of 22 March 2012, including the provision that the companies' efforts are to be aimed at existing buildings and industries, and this agreement.
- 5.2 Grid companies and distribution companies may carry out savings outside of their own supply area, and outside of their own energy type. As part of ensuring cost-effective efforts, grid companies and distribution companies have freedom to design specific savings initiatives in agreement with end users. In accordance with the Supply Acts for electricity, natural gas and heating, which do not involve the oil industry, all companies, regardless of ownership structure, have equal opportunities and conditions regarding realisation of their energy saving obligations.
- 5.3 Activities by grid companies and distribution companies directly related to the implementation of concrete energy saving activities must be through enterprises that are corporately separate from the grid and distribution company pursuant to the Supply Acts. The provisions are described in more detail in annex 2. Contracts with players, including group companies, must be on market terms pursuant to current tendering regulations, see annex 4.

## **6. Requirements for the companies' involvement**

- 6.1 Companies may only report and be credited for savings that they themselves, or through agreements with other players, have helped to realise via concrete activities. There has to be a direct and clear correlation between the activity and the savings. Companies may not report savings that were realised without the company's involvement. An agreement about this involvement must be established prior to commencing realisation of the savings. Requirements are detailed in annex 3.

## **7. Market orientation and transparency**

- 7.1 The grid and distribution companies are obligated to realising the energy saving targets stipulated in this agreement and they have freedom of methodology when organising efforts, so that the savings are realised at the lowest possible cost. Energy saving efforts should be subject to continued market orientation, so that players with competitive bids can contribute directly or indirectly to achieving energy savings.
- 7.2 As part of this market orientation, there must be a continued strengthening of the possibilities to involve external players in the efforts to realise savings. In this connection, group companies performing consulting and installation tasks are not regarded as external players.

- 7.3 The grid and distribution companies must run and further develop the companies' shared website [www.energisparesiden.dk](http://www.energisparesiden.dk). This shared website must contain general information about this agreement as well as provide an overall picture of specific activities for use by end-use consumers and players that wish to contact the companies. The companies' shared website must contain contact information for all grid and distribution companies with an energy saving obligation under this agreement.
- 7.4 Each year, by no later than 15 November, the parties to this agreement are obligated to publish a list of the grid and distribution companies' individual efforts in the previous year on the shared website [www.energisparesiden.dk](http://www.energisparesiden.dk).
- 7.5 To ensure transparency about energy saving efforts by grid and distribution companies, the Danish Energy Agency will publish the individual costs of these companies to realise the savings, see section 14.7 and annex 4 of this agreement.
- 7.6 A detailed description of regulations regarding the promotion of market orientation and transparency is in annex 4.

## **8. Prioritisation and conversion factors**

- 8.1 With regard to implementation of specific energy savings, the effect of these is calculated on the basis of savings in the first year. However, the savings in the first year are weighted with a simple factor, which reflects the lifespan of the saving, gross energy consumption associated with the implemented saving, as well as the expected CO<sub>2</sub> impact of the saving, including, especially, whether there is a saving inside or outside the ETS area.
- 8.2 For prioritisation and conversion factors and the practical use of these, see annex 5. Companies' performance regarding achieving a target is measured solely by weighting with the prioritisation and conversion factors, see section 4.3.

## **9. Calculation methods**

- 9.1 The savings are calculated by using standard values, through a specific calculation of the savings resulting from the activity, or by calculating the effect of a specific market impact.
- 9.2 Calculations based on standard values are used for smaller, standardised activities. Such savings are typically in homes and other buildings. If a standard value is available for a given saving, then this must be used.
- 9.3 Specific calculations are used in areas where there is no standard value. These will typically be larger and integrated projects in industrial enterprises or public institutions. If a specific calculation is used for parts of an overall project, then the entire project

must be calculated specifically, including the effect of initiatives where standard values exist.

- 9.4 The calculation may include a documentable effect of a specific market impact that entails a reduction in energy consumption relative to a baseline. As far as possible, the effect must be calculated using standard values.
- 9.5 Savings must be calculated according to the rules, standard values, etc current at the time of the establishment of a final agreement with an end-use consumer on contributions to realising a specific project.
- 9.6 Calculation methods and their applications are detailed in annex 6.

## **10. Double counting and other initiatives**

- 10.1 With regard to realising energy savings at a specific customer according to standard values and specific calculations, see section 9.1, grid companies and distribution companies must have procedures covering, for example, agreements, contracts and spot checks, see section 6 and annex 3, which aim to minimise the risk of the same savings being included by several companies. Cases of doubt can be brought before an arbitrator who will decide the correct ownership/proportionate share. When making a decision, the arbitrator can emphasise how realisation of the savings was initiated, who is responsible for implementation, application of resources, date of documentation for realisation, etc. The arbitrator's function is operated by the sectors/companies jointly.
- 10.2 With regard to regulatory requirements and state subsidy schemes, the following principles apply:
  - *New buildings*: Energy companies may include an energy saving if it contributes specifically to a new building having a lower energy consumption than current requirements. The energy saving must be calculated as the difference between the current requirements and the calculated energy consumption of the new building. 'Current requirements' refer to the requirements in the Danish building regulations. If a local government has stipulated in a local development plan that new buildings must exceed the requirements of the building regulations, 'current requirements' refer to these local provisions.
  - *Subsidy pool for renewables in industrial processes*: Grid and distribution companies may not provide subsidies to projects that have received commitment of funding under the subsidy scheme for renewables in industrial processes. However, grid and distribution companies may include the energy savings achieved from projects that fulfil the requirements for receiving subsidies from the subsidy pool for renewables in industrial processes, if these projects in some other way have contributed to realising savings in accordance with the principles in this agreement. When the Bill on a subsidy pool for renewables in industrial processes has been adopted, the Danish Energy Agency and the grid and distribution companies will decide the specific

realisation of the relationship between the subsidy pool for renewables in industrial processes and efforts by the grid and distribution companies. If grid and distribution companies have contributed to realising savings under the conditions above, these companies may include the energy savings achieved in connection with efficiency improvement of end-use consumption, as well as energy savings in connection with conversions from fossil fuels to district heating and renewables.

*For other areas with regulatory requirements, or for areas covered by other central-government-initiated agreements concerning energy savings, the companies may include the effect of the savings to which they have contributed.*

## **11. Documentation requirements**

- 11.1 The requirements for documentation apply to all energy savings reported to the Danish Energy Agency under this scheme.
- 11.2 The requirements must ensure the greatest possible uniformity and comparability in documentation, as well as ensure that the calculation of energy savings realised tallies with actual energy savings realised.
- 11.3 Grid and distribution companies must have clear documentation of all realised energy savings included in the company's target fulfilment.

Documentation must include a link between the initiative implemented and the savings calculated, so that companies can document all the savings which, according to the calculation methods in section 9, the individual initiatives have generated. For projects that are calculated specifically, documentation must also contain information about the simple payback period of the projects, see section 2.2 of annex 7.

The documentation must include evidence from the companies that savings have actually been implemented, and it must provide opportunity to spot check this, see annex 7. In addition to general information about the customer and players, documentation for the individual energy saving case must also include information about how the savings are calculated, and the companies' involvement.

Directly or through reference to player agreements etc., documentation must also include information about grid and distribution companies' costs of acquiring the right to report the energy savings.

- 11.4 Grid companies and distribution companies are responsible for making sure that complete documentation is available for all reported savings. The documentation for realised energy savings must be saved in writing and must be stored for 5 years. The requirements for documentation are specified in more detail in annex 7.

## **12. Reporting of energy savings**

- 12.1 On the basis of the documentation, the parties to this agreement must annually report to the Danish Energy Agency the individual energy sectors' realised total annual energy savings. Reporting to the Danish Energy Agency must be completed by no later than 1 March for energy savings to meet the saving obligation of the previous year.
- 12.2 When reporting energy savings, each sector or party with an individual savings target, see sections 4.6 and 4.7, must use the reporting forms in annex 8.
- 12.3 Energy savings cannot be reported until they have been realised and documentation has been finalised. As a general rule, reporting of an energy saving must take place in the year in which realisation and documentation of the specific energy saving was finalised, see, however, annex 3.
- 12.4 If quality assurance, see annex 9, occasions the need for corrections to reported energy savings, such corrections must be carried out in connection with the subsequent reporting. Corrections to reported energy savings for a given year must appear separately from the reporting for the subsequent year, see the reporting forms in annex 8.
- 12.5 In order to prepare a joint report, a cooperation body will be established, either by sector or jointly, to receive reports from all companies subject to agreed savings targets, see section 4.4. Companies that are imposed individual savings targets by the Minister must report to the Danish Energy Agency via the relevant cooperation body.

### **13. Quality assurance**

- 13.1 The grid and distribution companies are responsible for ensuring that their documentation is true and correct and in compliance with the requirements. In order to ensure this, grid and distribution companies must implement quality assurance that the company's documentation and reporting, including documentation of savings that are implemented by subcontractors or third parties on behalf of the company, are true and correct and comply with the requirements. The rules are described in more detail in annex 9.
- 13.2 As a part of this, an annual audit of documentation and guidelines etc. is required. Every other year this audit must be carried out by an independent third party. This can, for example, be done as part of a certified quality management system.
- 13.3 Once a year, the Danish Energy Agency will carry out impartial spot checks across all the involved grid companies and distribution companies. The spot check will aim at checking whether the efforts by companies, including their documentation of efforts, comply with the requirements and obligations under this agreement, as well as analysing the costs in selected cases at all steps, from energy company to end user.

## **14. Determining and regulating the costs of grid and distribution companies**

- 14.1 In accordance with the overall framework of this agreement, the electricity grid companies, the natural gas distribution companies and the district heating companies may include the costs of activities relating to a cost-effective realisation of energy saving obligations under this agreement.
- 14.2 The costs of the electricity grid companies, the natural gas distribution companies and the district heating companies in connection with realising the energy saving obligation must be paid by the end-use consumers (households, the public sector and business enterprises).
- 14.3 The individual electricity grid and natural gas distribution companies will have their actual costs of meeting their obligations under this agreement covered (less any revenue obtained under the framework of this agreement) through a supplement to the revenue cap.
- 14.4 District heating companies' costs of fulfilling their obligations pursuant to this agreement (less any revenue obtained under the framework of this agreement) may be included in tariffs as a necessary expense in accordance with the provisions of the Heat Supply Act.
- 14.5 The costs and revenues of electricity grid companies, natural gas distribution companies and district heating companies in connection with realising the energy saving obligation must be calculated separately from the companies' other costs and revenues.
- 14.6 There is no law allowing oil companies to demand specific contributions from their customers to cover the companies' costs of realising energy savings. In connection with signing this agreement, the oil companies have established the industry association *Foreningen Oliebranchens Energisparepulje f.m.b.a.* (the oil industry's energy saving patrol). This association has taken over all of the oil companies' obligations under this agreement. The costs of the association of realising the oil companies' obligations will be paid by the oil companies participating through a subscription.
- 14.7 To ensure transparency and cost-effectiveness, the grid and distribution companies must annually report their costs of meeting the preceding year's energy saving obligations under this agreement. For electricity grid companies, natural gas distribution companies and district heating companies reporting will be to the Danish Energy Regulatory Authority as part of their submission of annual financial statements. For the oil industry, reporting will be to the Danish Energy Agency. On the basis of the costs reported, a benchmark will be prepared annually, see section 2, point a), of annex 10.
- 14.8 To ensure greater transparency, and to ensure cost-effective efforts, the Danish Energy Agency may, on the basis of the annual benchmark of companies' costs, request that grid and distribution companies with costs among the 5% highest per kWh reported (however, always up to 25 companies) account for how they have ensured cost-effectiveness, including their focus areas, methods, costs, and market orientation. . The

Danish Energy Agency may also request the companies with the lowest costs to account for their focus areas, methods and calculation of costs.

- 14.9 On the basis of such accounts, the Danish Energy Agency may establish an agreement with the relevant company on how cost-effectiveness, including use of market terms, will be ensured in future. If an agreement cannot be established to ensure this, the Danish Energy Agency may impose the future terms for the company's implementation of energy saving efforts. The specific conditions for this situation are described in annex 10.

## **15. Technical working group**

- 15.1 A technical working group will be established to discuss regularly matters relating to this agreement, including especially sections 6-13 and 17. The group will consist of representatives from all the parties to this agreement and the Danish Energy Agency, which is to hold the chair. The tasks of the group are detailed in annex 11.

## **16. Transitional scheme**

- 16.1 The following transitional provisions apply in connection with the replacement of the agreement of 20 November 2009 with this agreement:
- a. Exceeded obligations for the period 2010 to 2012 may be transferred to the period 2013 and onwards. The transfer will be on the terms applying under the agreement of 20 November 2009, i.e. savings must be calculated according to the rules that applied when realisation of the savings was completed.
  - b. Any under coverage by the end of 2012, which may account for no more than 35% of a single year's saving obligation under the agreement of 20 November 2009, will be transferred to the subsequent agreement period. Realisation of unmet saving obligations for the 2010-2012 period, will be on the terms for including savings in calculations applying under this agreement.
  - c. Exceeded obligations may only be transferred to the extent that the savings have been calculated and reported to the Danish Energy Agency to meet the savings target in 2010-2012, pursuant to the rules that applied at the time of realisation. Savings that have not been reported for the period 2010 to 2012 may not be transferred.
  - d. Any exceeded obligations at the end of 2015 may be transferred to the subsequent period according to similar rules. Under coverage at the end of 2015 must be transferred similarly to the subsequent period.

## **17. Continuous follow-up and evaluation**

- 17.1 On the basis of reporting by the parties of energy savings realised, the Danish Energy Agency annually prepares a memorandum which summarises the realised savings, including how they distribute across sectors and therefore also how efforts are being directed at existing buildings and industries. The memorandum will be submitted to the parties behind this agreement.
- 17.2 The parties may require that this agreement, or parts hereof, including the savings targets, be renegotiated if the framework for efforts is substantially changed. For example, if there are substantial changes in consumption of certain sources and types of energy, or in the political framework conditions.
- 17.3 Implementation of the EU Energy Efficiency Directive and the upcoming strategy on energy renovation of the existing building stock may necessitate discussions concerning possible adjustments to the agreement before 31 December 2015.
- 17.4 As mentioned in section 2.2, an independent evaluation of the companies' saving efforts under this agreement will be concluded at the beginning of 2015. The overall framework for this evaluation is described in more detail in annex 13. The framework for evaluation of the period after 2015 will be determined when establishing an agreement on the specific guidelines for this period.
- 17.5 On the basis of the evaluation, see section 17.4, the parties to the agreement will decide together any required adjustments to the specific guidelines etc.
- 17.6 If no agreement can be reached on adjustments before 1 September in the relevant year, then either party may terminate the agreement at the end of that year.

Copenhagen,

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Martin Lidegaard, Minister for Climate, Energy and Building

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For the Danish Energy Association

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For the Danish District Heating Association

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For the Association of Danish Combined Heat and Power Plants (FDKV)

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For HMN Naturgas I/S

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For Dong Gas Distribution A/S

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For

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The Danish Oil Industry Association (EOF)

## **Annexes:**

**Annex 1:** Consumption included

**Annex 2:** Which tasks may grid and distribution companies perform in-house?

**Annex 3:** Requirements for the companies' involvement

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**Annex 11:** Technical working group

**Annex 12:** Increased additionality and determining standard values

**Annex 13:** Evaluation of this agreement

## **Annex 1: Consumption included**

1. Savings in final energy consumption (end consumption) may be included onshore in Denmark, excluding Greenland and the Faeroe Islands, and in all sectors as defined in the Danish Energy Agency's energy statistics. Oil refineries' energy consumption and own consumption in collective production plants are not part of final energy consumption.
2. The final energy consumption is the energy consumption that is billed to the end users via meters or the purchase of oil, coal, biomass etc. It is therefore measured as the amount of energy delivered to the end user.
3. The final energy consumption, and reductions therein, are calculated net, that is as the difference between the total volume of input energy and the energy quantities supplied from the enterprise, for example in the form of surplus heat. However, surplus heat supplied from collective production plants, see section 11, and refineries, see section 12, may not be included in this calculation.
4. Only one energy saving may be included in connection with installing a new oil-fired installation in areas where connection to either a district heating supply or a natural gas supply is not possible.
5. With regard to the transport sector (defined here as all road transport with registered vehicles, and trains, including electricity for trains, signals, etc., as well as aviation and shipping), only the effects of the following initiatives may be included.
  - a. Replacing a vehicle fleet with energy-efficient cars.
  - b. Replacing a vehicle fleet with energy-efficient vans.
  - c. Fitting fuel-saving tyres.
  - d. Fitting automatic tyre pressure control systems.

The more specific terms for calculating and documenting initiatives will be specified by the technical working group, see annex 11, on 1 December 2012 and will be published on the Danish Energy Agency's website. Reporting the effects of the initiatives above must take place using the calculation and documentation terms specified by the technical working group.

6. With regard to train operations, energy savings from energy consumption at workshops, from platform and track lighting, as well as energy savings from other services, may be included. Internal transportation within a specific enterprise, including the use of tractors, irrigation equipment etc. is part of the industry's process energy consumption - i.e. not transport, and savings in these areas may therefore be included in line with other savings.
7. In accordance with the provisions of annex 6, reductions of losses in transmission and distribution grids, incl. losses in transformers, pumps, gas meters/regulators/pumping stations etc. may also be included. This applies throughout, from the production plant/gas processing plant to consumers.

8. Local renewable energy plants which reduce the need for energy input to a specific consumer (or a closed circle of consumers; i.e. block heat), may be counted as savings. However, in buildings that are connected to district heating systems, effects of local solar heating systems may not be included, unless these are included as a part of the district heating plant's supply strategy.
9. Use of biomass, biogas and waste does not count as savings either, but an effect may be included if a new system has a higher efficiency than the old. Increased consumption of an enterprise's self-generated waste, such as waste wood and sludge, which reduces the supply of energy, and which so far has not been exploited for energy purposes, including incineration at waste incineration plants, may however be included as an energy saving.
10. The establishment of new wind turbines may be included to the extent that the turbine is connected in its own installation, but only for the portion of production that the consumer/enterprise uses itself, calculated according to the current settlement rules. The portion of output that is sold to the grid may not be included.
11. Energy consumption in collective production plants (district heating plants, electricity generating plants, CHP plants, etc.) is not included in the final energy consumption and, as a general rule, such savings may not be included. However, only the savings on the production systems themselves (boilers, turbines, gas motors, flue-gas cleaning, etc.) with associated equipment (motors, control equipment, etc.) may not be included. Thus, savings associated with ventilation, lighting, heat pumps, and heating plants may be included, as well as consumption in administration buildings to the extent that consumption is invoiced via consumption meters and, therefore, is not internal own consumption. A list of the collective production plants that are included in the Danish Energy Agency's annual energy production count, and in which savings may not be included, is available at the Danish Energy Agency's website.
12. Oil refineries' own energy consumption is not included in the final energy consumption and energy savings in processing plants (oil-refinery columns etc.) may therefore not be included. However, savings associated with ventilation, lighting, heat pumps, heating plants and consumption in administration buildings may be included to the extent that consumption is invoiced via consumption meters and, therefore, is not internal own consumption.
13. However, under the framework of this agreement for the period 2013 to 2015, savings may be included from the establishment of collective solar installations in connection with district heating supply. Installations which have been approved and which have been planned before the end of 2015 for commissioning in 2016, may be included as savings in reporting for 2015. If the installation is not commissioned in 2016, the saving must be retracted. The savings are calculated as the calculated annual energy production from the solar panel system weighted by a factor of 1.

## **Annex 2: Which tasks may grid and distribution companies perform in-house?**

Grid companies and distribution companies have obligations under this agreement. As a step towards realising their obligations, grid and distribution companies must guarantee and may carry out themselves the following tasks:

- Administration of this agreement.
- Documentation of savings.
- Reporting savings.
- Assurance of the quality of savings, including audits.

In addition, the following rules apply:

### **1. Within own area of supply and own energy type:**

Grid companies and distribution companies may themselves:

- Advise on energy savings.
- Inform about energy savings.
- Realise savings in own grid system or via meters incl. reading and monitoring equipment.
- Establish agreements with players.
- Establish contracts directly with a consumer on financial involvement, including purchase of the right to report a saving (subsidy), provided financing does not include a loan element.

The grid companies and distribution companies may not:

- Conduct specific realisation of energy savings at consumers, including installation work, technical energy efficiency improvements of equipment and processes, etc. (except in own grid system and via meters).
- Participate in sales of energy efficient equipment.
- Undertake the financing of the realisation of energy savings.

An agreement must be established with a player for these tasks.

### **2. Outside of own area of supply or own energy type**

Grid companies and distribution companies may themselves:

- Establish agreements with players.
- Establish contracts directly with a consumer on financial involvement, including purchase of a saving (subsidy), provided financing does not include a loan element.

For these activities, an agreement must be established with a player. Outside their own supply area or outside their own energy type, grid and distribution companies may not conduct other activities than those stated above.

### **3. Agreement with players on performance of tasks, administration etc.**

The framework for establishing agreements on the performance of tasks that are not carried out in-house is described in annex 4, sections 6 and 7.

### **Annex 3: Requirements for the companies' involvement**

Grid companies and distribution companies may include a saving if the saving meets the general conditions, e.g. that emphasis must be on savings that would not have been realised without the companies' efforts, see section 1.2 of this agreement. Therefore, the following conditions must be met:

1. There must be direct involvement in a specific defined energy saving. Direct involvement means that the grid and distribution company, or a player with a written agreement with the company, must provide a specific initiative that contributes to the realisation of an energy saving at a specific end user. The involvement may not consist only of an unspecified general agreement which does not include a specific description of the activities that help realise the energy savings. Therefore a general agreement with an end user that allows for the inclusion of all non-defined energy savings implemented at a consumer, without the company being involved in these savings, is not valid.
2. There must be an unbroken chain of agreements from the end user to a grid or distribution company prior the realisation of the saving. Entering a binding agreement to purchase equipment etc., or entering a binding agreement on commencement of the project, is seen as a commencement of the realisation.
3. The energy saving belongs to the end-use consumer, until an agreement has been established with a player or a grid and distribution company.
4. There must be a specific, prior agreement between the end user and a player or a grid or distribution company that the right of reporting the actual saving implemented will be transferred to a grid and distribution company, so that the end user does not, in good faith, transfer the savings to others.
5. In connection with savings above 20 MWh, and in connection with all specific statements, there must be a written agreement about the transfer of the saving by the end user. In connection with other savings, the end user must have been made aware about the transfer of the actual saving prior to its realisation, e.g. through a dated price quote, order confirmation, or similar. It will not suffice for the grid or distribution company to announce its takeover of the saving on its website. Documentation of the transfer of the right to report the energy saving must be included as a part of the company's documentation of the actual saving.
6. Information concerning to which grid or distribution company, the right to report the specific energy saving has been transferred must be available to consumers at all times.
7. Agreements between a grid- or distribution company and a player on realising energy savings may be general, i.e. without specification of the individual end user or specific initiative. There can be several parts in the agreement chain between the company with the obligation and the player with contact to the end user.

8. A company's involvement may be purely financial. This means that involvement by grid and distribution companies may be in the form of subsidies, i.e. purchase of the right to report an energy saving. Energy savings achieved solely through financial involvement, including subsidies, must meet the same requirements as apply to other savings. These savings must be documented on an equal footing with other savings, see annex 7
9. In connection with projects in which the energy saving is calculated specifically, see annex 7, the energy companies may not provide subsidies to the end-use consumer, if the simple payback time will consequently be less than one year. However, the companies may contribute with advice etc. and thereby achieve the right to report the savings. The simple payback time can be documented on the basis of the end user's decision base for implementing the specific project.
10. The rules for how involvement can take place in-house and when it must take place through an external player are in annexes 2 and 4.
11. Savings that are realised and documented according to the rules, may be transferred from one grid and distribution company to another, possibly, through an intermediary. Such a transfer may occur once the savings have been realised. This documentation must at all times be available to the company which reports the saving to the Danish Energy Agency. Transfers between companies must be made before the savings are reported to the Danish Energy Agency.
12. The main principle is that the savings must be reported for the year in which realisation and documentation of the specific energy savings are completed, however a grid and distribution company may agree with one or more players with which it has an agreement that the transfer of realised and documented savings to the grid and distribution company be postponed to the subsequent year on the following conditions:
  - a. As is the case for other savings, a transfer to the subsequent year may only be made to the grid and distribution company with which the player had an agreement prior to realising the saving.
  - b. At the end of the year, the grid and distribution companies must state the amount of savings the players with which they have agreements have completed but not transferred. The individual sector reports to the Danish Energy Agency the amount of savings that have been completed but not transferred.

## **Annex 4: Market orientation and transparency**

The following initiatives have been taken in order to ensure use of external players and transparency in connection with companies' savings efforts:

### **1. Visibility of costs**

The individual grid and distribution companies' costs of meeting their energy saving obligations will be published by the Danish Energy Agency and the parties to this agreement, see section 2. The costs will be calculated partly as the total cost and partly as an indicator showing the cost per kWh reported. The indicator will be split into costs for administration and acquisition, respectively, see section 14.7 and annex 10 of this agreement.

### **2. Visibility of the individual company's performance**

Each year, by no later than 15 November, the parties to this agreement must publish a list of the individual company's efforts in the previous year. This list must contain a comparison of the relevant parts of the information which the individual companies are obliged to submit pursuant to this agreement, either to their industry association or to the Danish Energy Agency and the Danish Energy Regulatory Authority. As a minimum, the list must include the following information about the individual company's efforts in the previous year:

- The company's energy saving targets.
- The energy savings achieved and their percentage distribution across sectors (form 1 in annex 8).
- The company's costs, broken down, see section 1.

The technical working group will prepare a more detailed description of the minimum requirements for the content of the list.

### **3. Website:**

In order to make it easier to establish contact between independent players and grid and distribution companies, as well as increase consumer awareness about the energy saving obligations of the companies, the companies must continue operation of [www.energisparesiden.dk](http://www.energisparesiden.dk).

The website must:

- communicate general information about this agreement;
- enable a match between players and energy companies;
- provide consumers with a general picture of the services available from the individual energy company and player;
- provide a general picture of the individual grid and distribution company's saving efforts in the previous year(s), see section 2.

A monitoring group for the website will be set up with representatives from energy companies, external players and consumers.

**4. Standard contract**

It should be analysed whether the standard contracts prepared in connection with the most recent agreement are being used, and whether there remains a need for standard contracts or a need to revise the contracts. The technical working group will perform this analysis, involving relevant external players, and, on the basis of the analysis, will decide whether the contracts need to be revised. The objective is that the standard contracts will enable external players to establish contracts on non-discriminatory terms, and that grid and distribution companies will be ensured a given deliverable. The contracts are also to ensure that external players meet the contract requirements, including requirements for calculation, documentation and quality assurance.

**5. Standardisation of documentation when using standard values**

The standard form for documenting savings calculated on the basis of standard values, see section 3.1 of annex 7, covers the minimum requirements for documentation when using standard values. A grid and distribution company may not reject documentation which complies with the standard form and may not demand an alternative form of documentation. However, a player and a grid and distribution company may, at any time, enter into an agreement about similar forms of documentation, provided both parties so agree.

**6. Contracts on market terms**

In the energy saving area, grid and distribution companies must establish contracts on market terms, see annex 10.

**7. Tendering regulations**

In work to meet their energy saving obligations, grid and distribution companies must comply with all relevant tendering regulations, see Directive 2004/17/EC of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.

## Annex 5: Prioritisation and conversion factors

In order to move efforts towards savings with a long lifespan, and which contribute to reducing gross energy consumption and help reduce CO<sub>2</sub> emissions, particularly in the non-ETS areas, simple prioritisation and conversion factors must be applied when calculating the savings.

### 1. Prioritisation factors in connection with savings

The prioritisation factors used to weight the first year's savings must be included in the companies' documentation of the savings, see annex 7, and they must be used when reporting the savings to the Danish Energy Agency, see annex 8.

The companies can decide for themselves whether they will use the prioritisation factors in their contact with end users.

The prioritisation factors shown in table 1 are for use in connection with the calculation of savings.

**Table 2: Prioritisation factors in connection with savings**

Energy type	Life span/Prioritisation factor		
	Less than 4 years	4 to 15 years	More than 15 years
District heating	0.5	1.0	1.0
Electricity and individual biomass	0.5	1.0	1.0
ETS fuels (oil, natural gas, coal)	0.5	1.0	1.0
Non-ETS fuels (oil, natural gas, coal)	0.5	1.0	1.5

Savings initiatives with a lifespan of less than 4 years and which have to use a factor of 0.5, as well as savings initiatives with a lifespan of more than 15 years in non-ETS fuels which have to use a factor of 1.5, are shown in table 3.

Table 3 is exhaustive. For all initiatives not stated in table 3, a factor of 1.0 must be used.

The technical working group may add to the list in table 3 on the basis of the principles of lifespan etc.. Any changes will come into force for a new calendar year. The changes will be published no later than three months before entry into force, however, no later than on 1 December 2012 for changes that will come into force from 1 January 2013.

**Table 3: List of initiatives for which prioritisation factors of 0.5 and 1.5 must be used**

Prioritisation factor 0.5	Prioritisation factor 1.5
<ul style="list-style-type: none"> <li>• Energy efficiency of boilers and heating plants on the basis of service schemes. (If the lifespan of the saving is less than 1 year, the saving may not be included).</li> <li>• Energy efficiency of ventilation plants on the basis of service schemes. (If the lifespan of the saving is less than 1 year, the saving may not be included).</li> <li>• Adjustment of heating plants. (If the lifespan of the saving is less than 1 year, the saving may not be included).</li> <li>• Systematic service schemes in addition to ordinary maintenance for motors, pumps and process plants.</li> <li>• Energy management.</li> </ul>	<ul style="list-style-type: none"> <li>• Increased insulation of floors, walls and ceilings/roofs which reduce space heating consumption in oil and gas-heated buildings.</li> <li>• New windows and doors marked with energy class A which reduce space heating consumption in oil and gas-heated buildings.</li> <li>• Heat recovery for space heating in connection with mechanical ventilation in oil and gas-heated buildings.</li> <li>• Increased insulation of hot water tanks and pipes in connection with space heating plants in buildings, when using non-ETS fuels.</li> <li>• New oil and gas boilers, however, only in the case of non-ETS oil or gas consumption.</li> <li>• Connection of oil and gas-heated buildings to district heating.</li> <li>• Installation of heat pumps replacing non-ETS oil or gas consumption.</li> <li>• Solar panels on oil and gas-heated buildings.</li> </ul>

For integrated projects that incorporate different energy types, and/or sub-projects with different lifespans, the savings must be calculated for each energy type (e.g. electricity and natural gas). Within each energy type, it is necessary to estimate the proportion of the energy saving on which to apply a prioritisation factor of 0.5, 1 and 1.5, respectively, see table 3. The savings must be documented according to this distribution.

The prioritisation factor to be applied when using standard values is given in the catalogue of standard values.

## 2. Conversion factors

The prioritisation factors shown in table 4 apply for conversion from one energy type to another.

**Table 4: Conversion factors for converting between energy types**

Conversion		Factor used:	
From	To	Energy quantity converted from:	Energy quantity converted to:
- Electricity	- District heating - ETS fuels (oil, natural gas, coal)	2.5	1.0
- Electricity	- Non-ETS fuels (oil, natural gas, coal) - Biomass	1.0	1.0
- District heating - ETS fuels (oil, natural gas, coal) - Biomass	- Electricity	1.0	2.5
- District heating	- ETS fuels	1.0	1.0
- District heating	- Non-ETS fuels - Biomass	0.8	1.0
- Non-ETS fuels (oil, natural gas, coal)	- Electricity	1.0	1.0
- Non-ETS fuels - Biomass	- District heating	1.0	0.8
- ETS fuels	- District heating	1.0	1.0
- ETS fuels - Non-ETS fuels - Biomass	- ETS fuels - Non-ETS fuels - Biomass	1.0	1.0

Note: Biomass includes the use of biomass at the individual consumer but not consumption of biomass in district heating production and electricity generation.

When converting from non-ETS fuels (oil, natural gas and coal) to other types of supply, including another non-ETS fuel, which have a lifespan of more than 15 years, the factors in tables 4 and 2 (including table 3) must be used in connection with conversion projects. Thus, in connection with this type of conversion, pursuant to table 2 the direct effect must be multiplied by a factor of 1.5. In connection with all other types of conversion, pursuant to table 2 the factor to be used is 1.0. The factors have been recognised in the calculation of the standard values.

## **Annex 6: Methods of calculation**

In general, the objective is that efforts should promote the use of best available technology, while taking into account financial opportunities. This is the case for calculations based on standard values as well as for specific calculations.

### **1. Calculations based on standard values**

Calculations based on standard values are particularly used for smaller, standardised activities. Such savings are typically found in homes and other (smaller) buildings.

Calculations based on standard values use the values from the catalogue of standard values for energy savings. The energy saving is calculated by multiplying the standard value by the number of units relevant for the specific project, e.g. the number of square metres insulated.

If the catalogue of standard values states a prioritisation factor for the saving, this prioritisation factor must be used on the calculated saving. Conversion factors, as described in table 3 of annex 5, have been recognised in the standard values.

For a standard value to be applied, the general preconditions must be met as described in the catalogue of standard values, including those pertaining to the 'before' situation. Furthermore, when applying standard values, the specific limitations on use of individual values, which are also described in the catalogue of standard values, must be taken into account.

If several different standard values are used for the same project, the final energy saving is calculated by adding together the energy savings stated for the individual standard values. In contrast to specific calculations, using standard values does not require compensating for possible overlaps.

If a standard value is available for a given saving, then this must be used. Therefore, the statement in the energy labelling of buildings of the effect of different initiatives cannot be applied, unless figures correspond to the standard values. If the standard value is zero, energy savings may not be included within the relevant area, and a specific calculation may not be used either.

### **2. Calculations based on specific calculation**

A specific calculation is used for specific initiatives or total solutions for which no standard value has been determined, typically in connection with large and/or integrated projects in industrial enterprises or public institutions.

If a specific calculation is to be used for part of the project, then the entire project must be calculated specifically, including the effect of initiatives where standard values exist. For

a specific calculation of the effect of an integrated project consisting of various sub-projects, account must be taken of any possible overlap between the effects of the various sub-projects. Savings within technologies for which the standard value is zero, may not be included.

A specific calculation must be completed for a representative and comparable production period. This calculation must include as a minimum,

- a calculation of the energy consumption before implementation of the initiative - *the reference*;
- a calculation of the energy consumption after implementation of the initiative; and
- calculation of the effect of the initiative, expressed as the total energy saving in the first service year after implementation of the initiative. Adjustments must be made for any changes to service times, production volumes, production mix, etc.

Calculations of the energy consumption before and after implementation of the energy saving, and, thus, the effect of the initiative, must be based on specific measurements, savings on the main meter, invoices from energy companies, and/or technical calculations. Adjustments must be made for any changes in the production volume and mix as well as service times. If the energy saving initiative includes savings within several energy sources, the reference as well as the saving must be calculated for each energy source. All information in the calculation of energy consumption must be documented with reference to the sources applied, so that data can be tracked and retrieved.

In connection with a specific calculation, energy labelling of buildings can only be applied as the basis if its calculation of the effect meets the requirements under this agreement.

The level of detail on the specific calculation must be adapted to the specific project. The larger the project, the greater the requirements for the calculation. As described above, there is no general requirement for measurement of consumption before and after.

#### 2.1 Specific calculation in connection with new installations and new buildings

When establishing new installations, including entirely new production sites, new product lines, etc., energy savings may only be included if the company's involvement leads to a solution that is more energy-efficient than the solutions normally used in Denmark, i.e. installations that are better than the current standard. The documentation must describe how 'current standard' has been defined.

Calculation of the energy consumption after implementation of the initiative must be based on a specific measurement of the energy consumption in the first year of operation after implementation, or on the expected energy consumption in the first year of operation based on technical data from suppliers, impartial experts or similar. All information in the calculation of the energy consumption must be documented with reference to the sources applied, so that data can be tracked and retrieved.

When establishing new buildings, energy savings may only be included if the company's involvement leads to a new building with a calculated energy consumption that is lower

than the current minimum requirements in the building regulations or the minimum requirements set by the local government in the local development plan. The saving must be calculated as the difference between the current minimum requirements and actual consumption of the new building.

#### 2.2 Specific calculation in connection with increased production volume

If, in connection with the implementation of energy saving initiatives, there is an increase in production capacity and production volume in the specific installation or unit subject to the energy-efficiency improvements, the calculation of the effect of this initiative must take this into account.

For the current production volume, which is normally calculated as the average across a representative period of time, e.g. the previous year, the saving must be calculated as the difference between the energy consumption from use of the original installation and the energy consumption after implementation of the initiative.

For the production volume exceeding the current production volume, the saving must be calculated according to the rules applying for new installations, i.e. only the saving exceeding the *current standard* for new installations can be included.

#### 2.3 Specific calculation in connection with closure and merger of production sites and installations

An energy saving following from the closure of an energy-consuming installation, or from cessation of an energy-consuming activity, may not in itself be included in the calculation under this scheme. In connection with mergers of sites or units of production, energy savings may be included only to the extent that the enterprise/unit to which production is being transferred at the same time carries out energy saving initiatives, in addition to the change in production. The saving must be calculated according to the rules for specific calculation in connection with an increased production volume. Energy savings in the enterprise/unit from which production is moved, or in which production is closed down, may not be included.

### **3. Energy savings in connection with maintenance**

An energy saving following from the replacement of a broken-down installation may be included in the calculation under this scheme if the energy saving has been calculated according to the principles for broken-down installations prepared by the technical working group.

In connection with ongoing maintenance of existing installations and equipment, only savings which follow from maintenance that leads to an improvement in the installation's energy-efficiency in excess of what can be expected from normal maintenance may be included. This means that savings from normal maintenance may not be included. The

technical working group has prepared a list of types of normal maintenance which may not be included in the calculation of energy savings under this scheme.

#### **4. Calculation of the effect of market influence**

Grid and distribution companies may include documented energy savings from specific activities such as campaigns or voluntary agreements, in so far as these activities influence market development in a given area towards more energy efficient products and solutions (such as energy management, smart meters, etc.).

Calculation of an independent effect of market influence may only be used if calculation using standard values is not possible. For example, if in connection with a subsidy scheme, information on the actual end user is available, then the main rule is that the saving should be calculated using standard values.

In the calculation of the savings from the activities mentioned, account should be taken of overlap and double counting in relation to other activities and players. Savings from these types of activity must also be calculated taking into account the overall market for the relevant technical changes/appliances.

The savings in connection with market influence must be calculated relative to a baseline which reflects the expected development in energy consumption, for example, within the relevant target group or in sales of the relevant product without the company's specific efforts. In areas in which it has been decided to introduce efficiency requirements (Eco-design etc.), only the effect over and above these may be included.

Effects of independent information campaigns, or independent campaigns to change consumer behaviour, may not be included if the effects do not arise from specific solutions aimed at the individual end user.

The technical working group will approve the detailed rules for calculating the effects of market influence, including any rules pertaining to specific areas of initiative.

#### **5. Calculation of energy optimisation of the district heating distribution grid**

An energy company may include an energy saving according to the rules specified below in so far as the energy saving obligation contributes to increasing optimisation of the district heating distribution grid. The energy optimisation may include optimisation/improvement of grid and pipes, optimisation of pumps, valves and other equipment, as well as optimisation of pressure and temperature.

When calculating energy savings in distribution grids, the following distinction must be made with regard to the pipes:

1. *Technically obsolete*: In connection with renovation or replacement of the grid system etc. performed because the grid is technically obsolete or for other reasons, a saving may be

included if a solution is chosen which is better than the current standard applying to new grids. The current standard for district heating pipes has been defined in a document available at the websites of the Danish Energy Agency and the Danish District Heating Association.

When assessing whether a grid is technically obsolete, the network must be assessed for heat loss and for all other relevant wear parameters, from medium pipes, to insulation, to jacket pipes, including installed socket systems and conditions related to installation. Grid systems with piping more than 40 years old will always be considered technically obsolete and the saving must therefore be calculated according to this method (alternative 1).

Documentation for projects calculated according to alternative 1 must include information on physical location and length and dimension of pipes, and it must describe how the solution chosen deviates from and exceeds the current standard.

2. *Not technically obsolete:* When carrying out energy optimisation of grid systems which are expected to last for several years to come without extraordinary maintenance costs, heat losses, etc., i.e. the grid is not technically obsolete, the saving from optimisation projects may be included in full. The saving must be included on the basis of the insulation properties of the existing grid when it was commissioned, and data for the new grid.

Grid systems with piping more than 40 years old will always be considered technically obsolete and the saving must therefore be calculated according to alternative 1.

Documentation for projects calculated according to alternative 2 must include a description of the 'before' situation, including physical location, length and dimension of pipes, insulation properties upon commissioning, as well as an assessment of whether the grid is technically obsolete and of the 'after' situation. The documentation must also describe how the energy saving effort has contributed to realising the project.

Savings from a project, irrespective of whether using alternative 1 or 2, must be calculated. Measured data may not be used. Savings must be calculated for each project. In other words, an annual total statement which shows the total savings achieved from work on the grid system will not be approved as energy savings under this agreement.

## **Annex 7: Documentation requirements**

### **1. General rules for documentation of realised energy savings**

The general rules for documentation in sections 1.1 to 1.5 must be met in connection with all types of activities that lead to the reporting of energy savings with the exception of market influence.

#### 1.1 Identification of savings and parties involved

The documentation must include a descriptive project title or a description of the specific initiative(s) that led to the reported energy savings, so that the individual energy saving initiative can be identified.

The documentation must include identification of all players involved, including the end user at which the saving was implemented. The end user must be clearly identifiable via name/company name, address of the place of implementation, and, if required for unique identification, also business registration number or building and dwelling registration number.

The documentation must include information about the grid and distribution company's type of involvement in the specific initiative (subsidy, advice or other).

#### 1.2 Documentation of unbroken chain of agreements

The grid and distribution company must ensure that there is documentation of an unbroken chain of agreements from a grid and distribution company to the end user(s) at which the saving was implemented, see annex 3. The agreement must ensure that the customer is aware that the right to report the savings, directly or via the player acting on their behalf, is passed on to a grid and distribution company, and thus cannot be transferred to others. There must be an unbroken chain of agreements from the end user to a grid or distribution company prior to commencement of the realisation of the saving. The requirement for such an agreement is detailed in annex 3.

#### 1.3 Documentation of time of realisation

The grid and distribution company must be able to document that the realisation of savings was not commenced prior to the company's involvement. This documentation may consist of a dated agreement between a grid and distribution company and the end user on transfer of the energy savings, or another agreement, invoice, or similar, which states the date of commencement of the realisation, and which can be compared with the date of the company's involvement. Entering a binding agreement to purchase equipment etc. or a binding agreement to launch a project is considered commencement of the realisation.

#### 1.4 Documentation of realisation of savings

Energy savings may not be reported before they have been realised and documented. The grid and distribution company must document the realisation of the energy savings, including the date of the realisation. This documentation could consist e.g. of a confirmation from the end user that the energy savings have been realised, or a copy of the invoice for work completed.

#### 1.5 Costs of acquiring the right to report the energy savings

Directly or indirectly e.g. through reference to player agreements etc., documentation of the individual saving must include information about the companies' costs of acquiring the right to report the energy savings.

## **2. Documentation of realised energy savings when using specific calculation**

In addition to the documentation requirements in section 1, the documentation of savings calculated specifically must contain the following:

#### 2.1 Description of relevant technical elements

The documentation must include a description of the relevant technical elements in the initiatives. In a way that is comprehensible and transparent for outsiders, the description must account for the activities that lead to energy savings, including the changes, replacements and/or installations implemented.

#### 2.2 Documentation of calculation of savings

The grid and distribution company must be able to document all calculations, measurements and other matters pertaining to the calculation of the specific energy saving, see annex 6 below:

- Calculation of energy consumption before implementation of the initiative - *the reference*.
- Calculation of energy consumption after implementation of the initiative.
- Calculation of the effect of the initiative, expressed as the total energy saving in the first service year after implementation of the initiative. Adjustments will have to be made for any changes to service times, production volume and production mix, etc.
- Assumptions (service times, changes to production, effects of labelling etc.).
- The project's simple payback time, expressed as the relationship between the investment (less subsidy) and the value of the first year's energy savings. Investment and energy prices must be documented upon request in the form of quotes/invoices. Costs for which there is no documentation may account for no more than 10% of the total investment. The end user's decision-making basis for implementing the specific project may serve as documentation.
- Energy type.
- Prioritisation/conversion factor.

### 2.3 Standard form for documentation when using specific calculation

In collaboration with the technical working group, the Danish Energy Agency will prepare a guiding standard form for the required documentation of energy savings reported using specific calculation. The standard form will contain all of the elements that as a minimum must be included in the documentation. The form can be used as documentation of all savings that are calculated specifically.

## **3. Documentation of realised energy savings when using standard values**

In addition to the requirements in sections 1.1 to 1.5, the documentation for use of standard values must include the following:

- Identification of the standard value(s) used, including a description of how the 'before' situation has been determined.
- Calculation of the savings - the number of units multiplied by the standard value (standard-value number, year).
- Energy type.
- Prioritisation factor.

### 3.1 Standard form for documentation when using standard values

In collaboration with the technical working group, the Danish Energy Agency will prepare a guiding standard form covering the required documentation of energy savings reported using standard values. The standard form will contain all of the elements that must be included in the documentation. The form can be used as documentation of all savings that are calculated using standard values.

## **4. Documentation of energy savings through market influence**

Documentation of activities relating to influencing the market should be completed according to guidelines developed by the technical working group and must include:

- Identification of the energy saving and where it was implemented.
- Description of the activities leading to the savings, including the parties involved, the time span of the activity, etc.
- Description of baseline.
- Calculation of the energy savings, including the study forming the basis for documentation of the energy savings, including sales figures and operator, together with
  - prioritisation/conversion factor
  - energy type.
- Grid companies' costs of acquiring the right to report the energy savings.

There must also be documentation for the customer survey which documents that the activity has been completed and that it has resulted in energy savings.

No signature of the customer is required for market influence.

#### **5. Filing and storage of documentation**

The documentation for realised energy savings must be saved in writing (possibly electronically) and must be stored for 5 years. The documentation must be available at all times for the grid and distribution company which reported the specific savings, as well as for impartial inspection and spot checks.

## Annex 8: Reporting pursuant to this agreement

### 1. Reporting of realised energy savings

The sectors must report to the Danish Energy Agency the following data annually about their realised energy savings, see section 12 of the agreement.

Form 1: Realised savings by sector and energy type									
	TJ	District heating	Natural gas	Oil	Electricity	Coal etc.	Biomass	Other	Total
<b>1</b>	<b>Households</b>								
	Specific calculation								
	Standard values								
	Market influence								
<b>2</b>	<b>Public sector</b>								
	Specific calculation								
	Standard values								
	Market influence								
<b>3</b>	<b>Agriculture and industry</b>								
	Specific calculation								
	Standard values								
	Market influence								
<b>4</b>	<b>Trade and service</b>								
	Specific calculation								
	Standard values								
	Market influence								
<b>5</b>	<b>Collective solar energy</b>								
<b>6</b>	<b>Grid optimisation</b>								
<b>7</b>	<b>Transport</b>								
<b>8</b>	<b>Conversions</b>								
	Households								
	Public sector								
	Agriculture and industry								
	Trade and service								
<b>9</b>	<b>Corrections ( + or - relative to last year)</b>								
	<b>Total</b>								

Form 1 must contain all the reported realised energy savings, and the figure in the bottom right field is the sum total used to check against target performance etc.

- Lines 1-4 must contain the savings that are stated in forms 2 and 3.
- Savings in connection with collective solar energy and optimisation of the grid system must be stated in lines 5 and 6, respectively.

- All savings in transport, see section 5 of annex 1, must be stated in line 7, and only here. For conversions in the transport area, savings must be stated under the energy type used before conversion.
- All savings in connection with conversions outside the transport area, see form 4, must be stated in line 8, and only here. Furthermore, the saving must be stated under the energy type replaced. For example, a conversion from oil to gas must be stated in line 8 and under the energy type 'oil'.
- Any corrections to previously reported figures must be reported in line 9. If excessive savings have been reported previously, this must be stated as a negative correction.

<b>Form 2: Realised energy savings by technology/area and calculation method</b>																	
End use/TJ	Households				Public sector				Agriculture and industry				Trade and service				Total
	Standard value	Specific calculation	Market influence	Total	Standard value	Specific calculation	Market influence	Total	Standard value	Specific calculation	Market influence	Total	Standard value	Specific calculation	Market influence	Total	
Thermal envelope																	
Windows																	
Boilers																	
Electric heating - Space heating																	
Heating plants																	
Ventilation																	
Lighting																	
Process equipment																	
Cooling																	
Compressed air																	
Pumps																	
Electric motors and transmission for internal transport																	
Less energy-consuming appliances																	
Other																	
<b>Total</b>																	

Form 2 must show the breakdown of all the savings stated in lines 1-4 of form 1.

**Form 3: Realised savings within each energy type, by lifespan and area (prioritisation factors)**

TJ	Prioritisation factor		
	0,5	1	1,5
District heating			
Electricity and individual biomass			
ETS fuels (oil, natural gas, coal)			
Non-ETS fuels (oil, natural gas, coal)			

Form 3 must show all the savings that are stated in lines 1-4 of form 1.

**Form 4: Realised savings from conversions**

From	To	TJ
Electricity	District heating, ETS fuels (oil, natural gas, coal)	
Electricity	Non-ETS fuels (oil, natural gas, coal) Biomass	
District heating ETS fuels (oil, natural gas, coal) Biomass	Electricity	
District heating	ETS fuels	
District heating	Non-ETS fuels Biomass	
Non-ETS fuels (oil, natural gas, coal)	Electricity	
Non-ETS fuels (oil, natural gas, coal) Biomass	District heating,	
ETS fuels	District heating	
ETS fuels	Non-ETS fuels	
Non-ETS fuels	Non-ETS fuels	
Biomass	Biomass	
<b>Total</b>		

Form 4 must contain all the savings realised by converting from one type of energy to another. The total figure must correspond to the total figure in line 8 of form 1.

The forms can be downloaded as Excel files via the Danish Energy Agency's website.

## 2. Reporting costs

Pursuant to section 14 and annex 10 of this agreement, all companies must report the costs stated in form 5 to the Danish Energy Regulatory Authority/the Danish Energy Agency.

### Form 5: The costs of the individual company

		Costs (DKK '000)
1.	Total costs of realising the reported energy savings, see form 1.	
2.	Of these, costs for administration	
3.	Other costs (1 less 2)	

Pursuant to section 14 of the agreement and section 2b of annex 10, the sectors must annually report the individual sector's breakdown of costs in accordance with form 6 to the Danish Energy Agency.

### Form 6: Breakdown of sector costs

		%
1.	The total costs of the grid or distribution companies	100%
2.	Percentage costs of administration	
3.	Percentage costs of external players through direct agreements between a grid and distribution company and/or its group company.	
4.	Percentage costs of subsidies to the end customer from a grid and distribution company and/or its group company.	
5.	Percentage costs of purchases of realised energy savings from another grid and distribution company.	
6.	Percentage costs of realisations in a grid and distribution company and of agreements with group companies (item 1 less items 2-5)	

## 3. Reporting of audits

Pursuant to section 2 of annex 9, the sectors should report annually to the Danish Energy Agency whether the individual companies have performed an internal or external audit in a given calendar year. The reporting must take place together with the sector's reporting of realised energy savings, i.e. no later than 1 March.

### Form 7: The audits performed in the individual company

(Tick off if performed)	Internal audit	External audit
Name of company		

## 4. Reporting of energy savings completed but not transferred

Pursuant to section 12.b of annex 3, the individual sector must report to the Danish Energy Agency the number of savings that has been completed but not transferred. The

reporting must take place together with the sector's reporting of realised energy savings, that is by no later than 1 March.

**Form 8: Energy savings completed but not transferred**

Sector	Savings not transferred TJ

## **Annex 9: Quality assurance**

### **1. The content of quality assurance**

Companies must establish quality assurance which ensures that documentation is true and correct and meets the requirements stipulated.

Companies are free to choose the design of the quality assurance, but it should at least focus on

- whether the size of the energy saving has been calculated pursuant to the current rules, and whether specific calculations are technically valid;
- whether energy savings have been implemented in the consumption covered and can be defined as energy savings in the context of the agreement;
- whether the company has been directly involved, either financially or through a third party, before the savings were realised;
- whether the company has obtained the right to report the savings;
- whether the energy savings have been realised and have been correctly documented;
- whether the energy savings have been reported correctly;
- whether there is documentation of the entire agreement chain, from the end user at which the saving was implemented to the grid company via the player(s)/subcontractors which on behalf of the grid company has(ve) realised the energy saving;
- whether players acting on behalf of the grid company are complying with the requirements of the agreement;
- whether possible errors in individual cases or in the company's procedures, as steps to meet the obligations under the agreement and the underlying executive order, are corrected.

When using external players, consumer-reported data via websites, subsidies, etc., special attention should be given to whether the 'before' situation and the 'after' situation have been calculated correctly. To ensure this, the company should carry out spot checks as required to check that reported conditions reflect actual conditions.

### **2. Internal and external audits**

As part of quality assurance, companies must conduct an audit annually to ensure and verify that the reported savings have been realised and documented in accordance with the agreement and the executive order.

Every other year, the audit should be carried out internally by the company itself, and every other year externally by an independent auditor. The external audit must be performed by a person/enterprise that is independent of the grid and distribution company and that has completed a basic course in auditing, combined with the completion of a minimum 2-3 audits with an experienced auditor.

The company must document that both the internal and external audits have been completed, including how many and which cases have been spot checked. This documentation must be archived for 5 years. In connection with annual reporting, the companies must report whether internal or external audits have been performed for the relevant year.

### **3. Spot check**

With a view to checking whether the companies meet the requirements in this agreement, once a year the Danish Energy Agency will conduct impartial spot checks across all the involved grid and distribution companies. The spot checks will cover all intermediary links, from the reporting company to the end user at which the saving was implemented.

### **4. Verification unit**

A verification unit will be established in order to provide the companies in charge of realising the energy saving obligation with an opportunity to have their calculation methods pre-approved, as well as to have their projects verified.

The technical working group will appoint the members of the verification unit. This appointment will ensure that the verification unit has the required insight into technical matters and the energy saving agreement. For example, members could be appointed from the technical experts used for the agreement scheme for energy-intensive enterprises.

Using the verification unit is voluntary for the companies. The costs of verification of the specific case will be paid by the company/player.

The idea is that verification unit is used when determining the method of documentation of a project prior to commencement of the project, and when verifying the final documentation of a completed project. Amongst other things, the verification unit can help consider the specific assumptions about 'current standard', product expansion and new installations, maintenance, etc.

The verification unit's decision about the chosen documentation method and the size of savings realised from a specific project cannot be subsequently overruled e.g. in connection with audits, check spots, etc.

Any decision by a verification unit will be reported to the Danish Energy Agency. Decisions will be used in anonymised form for the FAQ on the Agency's website.

The technical working group will prepare guidelines for the verification unit.

## **Annex 10: Determining and regulating the costs of grid and distribution companies**

### **1. Regulating the revenue cap of electricity grid and natural gas distribution companies**

- a) The Danish Energy Regulatory Authority determines a supplement to the revenue cap of electricity grid and natural gas distribution companies. This supplement is to cover the net costs of energy savings efforts, see sections 14.3 and 14.5 of the agreement. The supplement will be determined in advance as a temporary raise of revenue caps on the basis of the average actual costs incurred by the relevant sector in the preceding year.
- b) On the basis of the financial information about the individual company's costs of meeting the energy saving obligation, there will be a retrospective adjustment at individual company level, so that the companies' actual costs are covered. If a company in a given financial year has incurred greater costs than anticipated when determining the raised revenue cap for the relevant year, there will be a retrospective adjustment in the following financial year through a supplementary raise of revenue cap for that year. If a company in a given financial year has incurred fewer costs than anticipated when determining the raised revenue cap, the amount will be brought back to the consumers through a temporary reduction in consumer prices in the following financial year.
- c) Costs in connection with realising the energy saving obligation will be kept separate from the revenue cap adjustment's general rules on benchmarking and realisation of efficiency requirements.

### **2. Analysis and regulation of grid and distribution companies' cost-effectiveness and use of market terms**

- a) To ensure transparency and cost-effectiveness, the grid and distribution companies must annually report their costs of meeting the preceding year's energy saving obligations under this agreement. When reporting, the individual companies' costs must be broken down by costs of administering the agreement and other costs of acquiring the right to report energy savings, see form 5 in annex 8.

Costs of administering this agreement only cover costs incurred for documentation, quality assurance and reporting of energy savings, as well as the costs of administering this agreement incurred by the individual sector's collaboration body.

As a part of their financial statements and in connection with their annual report/pricing documentation, the individual electricity grid, natural gas distribution and district heating company must annually report to the Danish Energy Regulatory Authority the costs of meeting the preceding year's energy saving obligation. (For electricity grid and natural gas distribution companies, the deadline for submission is 31 May. For district heating companies, the deadline for submission is 15 September.) On the basis of the reported costs, the Danish Energy Regulatory Authority will

prepare an annual benchmark showing the individual companies' total costs of meeting the energy saving obligation, as well as costs per kWh reported in the relevant year. The Danish Energy Regulatory Authority is to publish this benchmark by not later than 1 November.

By no later than 1 September, the oil companies must report the oil industry's total costs of meeting the preceding year's energy saving obligation to the Danish Energy Agency. The Danish Energy Agency must prepare a benchmark for the oil industry's costs. The Danish Energy Agency must publish an overall benchmark for all grid and distribution companies by no later than 1 November.

- b) By no later than 15 September, the individual sectors subject to this agreement must report the preceding year's costs by type of agreement to the Danish Energy Agency, see form 6 in annex 8.
- c) On the basis of the benchmark of energy companies' costs of meeting the energy saving obligation (see section 14.7 of the agreement, and section 2 above), the Danish Energy Agency may request that grid and distribution companies with costs among the 5% highest per kWh reported (however, always up to 25 companies) account for how they have ensured cost-effectiveness, including their focus areas, methods, costs, and use of market terms. The Danish Energy Agency may also request the companies with the lowest costs to account for their focus areas, methods and calculation of costs.
- d) The selected companies with high costs will be requested to submit a report to the Danish Energy Agency covering:
  - Documentation of the company's costs, including the breakdown by type of cost, see form 6 in annex 8.
  - An account of their areas for initiative, methods, and the general background for costs of the results achieved.
  - An account of how the agreements established have been based on market terms with regard to choice of supplier and settlement of prices.

On the basis of such accounts, the Danish Energy Agency will prepare an overall assessment of the relevant company's cost-effectiveness, including use of market terms. As the supervisory authority, the Danish Energy Agency may subsequently establish specific agreements with individual enterprises to ensure they adjust future efforts. Agreements will be realised through a decision before the end of May in the year following the benchmarking. This decision must be complied with by no later than 1 January in the subsequent year.

If an agreement cannot be established to ensure adjustments to future efforts, the Danish Energy Agency can impose the future terms for the company's implementation of energy saving efforts. Such an order will have effect from 1 January in the subsequent year.

- e) With regard to the selected companies with low costs, the Danish Energy Agency will carry out an assessment of the individual company's efforts, including its areas for initiative, methods applied, use of external players, as well as companies' calculation of costs. On the basis of this assessment, the Danish Energy Agency may establish specific agreements with the relevant companies about adjusting their efforts and about their calculation of costs.
  
- f) If a grid company or a distribution company fails to comply with an agreement entered into or with an order pursuant to points d) and e), the Danish Energy Agency will impose the future terms for the company's implementation of energy saving efforts. Such an order will have effect from 1 January in the subsequent year.

## **Annex 11: Technical working group**

A technical working group will be established with representatives from the parties to this agreement.

The main tasks of the working group are to contribute to compliance with this agreement, as well as to continuously specify and interpret the rules of this agreement. This includes the following tasks:

- Any specification of the guidelines for companies' involvement, see section 6 and annex 3 of this agreement.
- Follow up on the provisions on market orientation and transparency, see section 7 and annex 4 of this agreement.
- Clarification of any discrepancies in the use of prioritisation factors, see section 8 and annex 5 of this agreement.
- Ongoing adjustments to calculation methods, see section 9 and annex 6 of this agreement, including updates to the standard values, see annex 12 of this agreement, and drafting of guidelines for how to calculate the effect of market influence, information, etc.
- Follow up on requirements for documentation, reporting and quality assurance, including, in particular, follow up on annual spot checks, see sections 11-13 and annexes 7 to 9 of this agreement.
- Discussion of the framework for and the content of the evaluation in 2015, see section 17 and annex 13 of this agreement.

The group will consist of up to two representatives from:

- The Danish Energy Association
- The natural gas companies
- The Danish District Heating Association and the Association of Danish Combined Heat and Power Plants (FDKV)
- The Danish Oil Industry Association (EOF).

as well as representatives from the Danish Energy Agency, which will hold the chairmanship and perform secretarial functions for the working group.

The working group will prepare rules of procedure determining the framework for its work.

The working group will meet as required and at least three times a year.

## **Annex 12: Increased additionality and determining standard values**

### **1. Increased additionality:**

The following initiatives were incorporated in the agreement of 20 November 2009 in order to compensate for an additionality that is not 100% and in order to increase the additionality:

- The annual target was increased by about 15% from 5.4 PJ/year, which was the target included in the energy policy agreement of 21 February 2008, to 6.1 PJ/year.
- It was no longer possible to include an effect of a number of initiatives, including initiatives to change consumer behaviour and information campaigns, for which additionality is assessed to be particularly low.
- Some standard values were reduced by 10-20% in order to compensate for the fact that some of the initiatives implemented would have been implemented regardless.

These initiatives are being continued and further developed by this agreement.

### **2. Determining standard values**

The following considerations are considered when determining the standard values:

- a) In general, to ensure maximum savings and to promote technology development, the standard values should focus on the best future-proof solutions - the best available technology. However, this should be with profitability etc. in mind, so as to avoid blocking the implementation of sensible savings.
- b) Savings from initiatives may not be included if the lifespan of the saving is assessed to be less than 1 year.
- c) In connection with a number of solutions, of which by far the majority are implemented as part of a natural replacement, no savings may be included, that is, the standard value should be set to zero.
- d) In other areas where a large part of the improvements are implemented in connection with natural replacement, i.e. typically after the technical lifespan, then the standard value is set as the difference between the average efficiency of the products sold (standard technology) and the efficiency of the specific product. It is therefore only possible to include an effect if the products chosen are better than the average sold at the time of the realisation. If, in accordance with Danish and EU legislation, efficiency standards have been adopted, then these may be used as a basis for determining the efficiency of the average product sold. If some of the replacements are forced, see point e), then account should be taken of this when determining the standard value.

- e) In situations with primarily a forced replacement or with a saving that is not expected to be implemented within a year without the companies' efforts, then the standard value is calculated as the difference between the existing product and the new product.
- f) In specially selected areas in which it is obvious that savings will be included that would have come naturally, the standard values will have to be adjusted to take account of this. The standard values should be set on the basis of a qualified assessment of which savings will come naturally within the relevant area.
- g) The standard values for new oil-fired installations are reduced by 15%.
- h) In some areas, the standard values must be determined on the assumption that the 'before' situation meets a certain minimum level of energy efficiency. For example, in future, a certain minimum 'before' level of insulation will be assumed for roofs/ceilings, floors and pipes, and savings will only reflect the difference between this 'before' level and the future insulation level.

The technical working group is responsible for the preparation of the standard values, see annex 11. The companies undertake the practical work in connection with the preparation of the standard values, and are responsible for the expenses incurred. The Danish Energy Agency will approve the standard values.

In order to ensure true and credible standard values, there must be openness about the standard values and their preparation. Documentation of the standards values must be available. The technical working group will assess annually whether there is reason to adjust the various standard values due to, amongst other things, technological developments. Any adjustments will enter into force as of 1 January and will be published by no later than 1 October. The adjustments will only pertain to future efforts.

## **Annex 13: Evaluation of this agreement**

### **1. Timetable for evaluation**

An independent evaluation of the companies' saving efforts under this agreement will be concluded at the beginning of 2015. This evaluation will primarily focus on the efforts of companies from 1 January 2013. However, specific analyses in connection with the evaluation may include data from previous periods.

The evaluation will be put up for tender in early 2014, so that work on the evaluation may commence in mid-2014.

### **2. Content of the evaluation**

The evaluation must cover an assessment of:

- a. The rules and guidelines of this agreement, including
  - freedom of methodology
  - requirements for involvement
  - market orientation and transparency
  - prioritisation factors
  - calculation methods
  - relationship to other initiatives
  - documentation requirements, reporting and quality assurance.
- b. Organisation of efforts, including
  - how the energy companies have organised efforts within the framework of the provisions of this agreement, including freedom of methodology
  - use of external players
  - consumer satisfaction with the scheme
  - player satisfaction with the scheme.
- c. Effects and costs of efforts, including
  - the additionality of efforts
  - energy companies' costs
  - consumers' costs
  - socioeconomic costs.
- d. Assessment of the relationship between freedom of methodology, targeting efforts at buildings and industries, cost-effectiveness, market orientation and additionality.

In connection with all of these subjects, the evaluation must focus on whether the provisions of this agreement are appropriate. Furthermore, the evaluation must suggest

specific proposals for improving the rules and guidelines of the agreement for the subsequent period.

### **3. Framework for implementing the evaluation**

The Danish Energy Agency is responsible for and will finance the evaluation. The framework for, and implementation of, the evaluation, including the prioritisation of the subjects listed in sections 1-4, will be debated with the companies, which are included in a steering group.