

Translation of letter:

From: Danish Energy Agency

Date: 26 April 2016

To: Ms Nina Gareis, DG ENER, Directorate C – Renewables, Research and Innovation, Energy Efficiency, European Commission

File No: 2014-23871

Subject: Denmark's annual reporting under Article 24(1) of the Energy Efficiency Directive

Denmark's indicative target under Article 3 concerns absolute *primary* energy consumption (gross energy consumption excluding consumption for non-energy purposes) in 2020 of **727.63 PJ (17.38 Mtoe)**, based on an updated energy and climate projection (Baseline Projection 2015) published by the Energy Agency in autumn 2015. This equates to a 14.5% reduction in primary energy consumption compared with 2006.

The corresponding target for anticipated *final* energy consumption (excluding consumption for non-energy purposes) in 2020 is **602.36 PJ (14.39 Mtoe)**, a reduction of 9.7% compared to 2006.

Denmark's indicative target for absolute primary energy consumption has decreased by 13.45 PJ in comparison to the indicative target under Article 3(1) reported in April 2015. The changes to the projected energy consumption are due to a number of changed factors, including lower anticipated energy consumption in manufacturing industries.

The indicative target is derived from the Danish Energy Agency's 2015 baseline projection. The baseline projection is based on energy consumption in 2014 and takes into account the impact of measures taken. These include the energy agreement of 2012, budget acts up until 2015, various growth plans, including the Agreement on the abolition of the security of supply charge, etc. and the reduction of PSO (Public Service Obligations) charges.

Furthermore, the Danish Energy Agency's baseline projections are consistently based on a number of general economic assumptions. The assumptions concerning economic growth are based on Denmark's 2015 Convergence Programme, while those concerning new energy plants are derived from the Danish Energy Agency and Energinet.dk's technology catalogues, 'Technology Data for Energy Plants'. As regards fuel prices, the projection is based on the International Energy Agency's latest trajectory for fossil fuel prices, which appears in the World Energy Outlook 2014 (New Policy Scenario).

The baseline projection, including the models used, assumptions and results, is described in more detail in in Denmark's Energy and Climate Baseline Projection 2015:

http://www.ens.dk/sites/ens.dk/files/dokumenter/side/danmarks_energi-_og_klimafremskrivning_2015_-_web.pdf

The data to be reported pursuant to Annex XIV is shown in the table below. It is in line with the figures reported to Eurostat.

a) An estimate of the following indicators in *the year before last (year X-2)*:

a) An estimate of the following indicators in <i>the year before last (year X-2)</i> :		2012	2013	2014
i. primary energy consumption (gross energy consumption)	Adjusted, PJ	782	763	755
ii. total final energy consumption (including non-energy purposes)	Adjusted, PJ	613	608	608
iii. final energy consumption by sector:				
industry (manufacturing)	Adjusted, PJ	90	85	84
transport (broken down into passenger and freight transport, if available)	Adjusted, PJ	205	203	208
households	Adjusted, PJ	185	186	186
services (trade and service industries)	Adjusted, PJ	82	82	80
iv. gross value added by sector:	Fixed 2010 prices			
industry (manufacturing, excluding refineries)	DKK billion	218	225	229
services (trade and service industries)	DKK billion	1 185	1 188	1 204
v. disposable income of households (gross income)	DKK billion, 2005 prices	818	810	823
vi. gross domestic product	DKK billion, 2010 prices	1 807	1 799	1 818
vii. electricity generation from thermal power	PJ	73	85	69
viii. electricity generation from combined heat and power	PJ	55	52	42
ix. heat generation from thermal power	PJ	136	135	122
x. heat generation from combined heat and power plants, including industrial waste heat	PJ	99	98	84
xi. fuel input for thermal power generation	PJ	225	248	205
xii. passenger kilometres (pkm), if available	million passenger-	77 707	77 344	78 602
xiii. tonne kilometres (tkm), if available	millions of kilometres ¹	49 087	49 430	50 789
xiv. combined transport kilometres (pkm + tkm), if (xii) and (xiii) are not available				
xv. population (Jan 2011) (in thousands)		5 581	5 603	5 627

Source: Energistatistik 2014 [Energy Statistics 2013], Statistics Denmark, Danish Road Directorate

Analysis of energy consumption trends

Adjusted gross energy consumption was 755 PJ in 2014 (including consumption for non-energy purposes and 745 PJ excluding consumption for non-energy purposes), which is 1.1% lower than in 2013.

Consumption fell by 7.8% compared with 1990 and by 12.5% compared with 2006. Energy consumption in Denmark in 2014 was at the same level as at the beginning of the 1980s. At the same time, there has been an increase in economic activity as measured by gross domestic product (GDP), which means an improvement in energy efficiency in 2014 of 2.1% compared to the previous year. Improved energy efficiency over recent decades meant that each unit of GDP required 34.6% less energy in 2014 than in 1990.

Total final energy consumption (excluding consumption for non-energy purposes) in 2014 was 10.5% lower than in 2006. Final energy consumption remained essentially unchanged between 2013 and 2014. This takes into account a renewed increase in consumption for transport following several years of stagnation (+ ca 5PJ) and the reduction in final energy consumption by ca 2% between 2013 and 2014 in manufacturing industries and the trade and services sector in spite of economic growth. Final energy consumption in households has decreased by 6.5% since 2006 and remained essentially unchanged from 2013 to 2014, despite an increase in the number of households and square metres.

Current developments in energy consumption are taken into account in the baseline projection of energy consumption until 2020.

The table above shows the greatest change in electricity production at thermal plants and the fuel input involved. The changes from 2013 to 2014 are due primarily to changes in electricity imports: given that the level of electricity imports was higher in 2014 than in 2013, the level of electricity production in Denmark decreased accordingly.

In general, there is increased use in particular of wind power in the Danish energy system, the consequences of which include reduced energy consumption for electricity generation and district heating purposes.

Update on measures carried out the previous year:

New aid scheme for electricity-intensive undertakings

Electricity-intensive undertakings may be granted State aid towards their PSO payment provided that they enter into an energy efficiency agreement with the Energy Agency. This subsidy scheme is intended to ensure that the competitiveness of energy-intensive undertakings is not significantly diminished by PSO payments and to promote energy efficiency measures in energy-intensive undertakings. By participating in the scheme, the undertaking commits to a three-year process which includes implementing the international energy management standard DS/EN ISO50001, conducting separate studies of the undertaking's energy situation and carrying out all energy saving projects (typically electricity) with a payback period of less than five years. A fund of DKK 185 million has been allocated annually for the period 2015-2020.

2015 Building Regulations

The 2015 Building Regulations (BR15) were published in December 2015. BR15 entered into force on 1 January 2016, with a transitional period until 30 June 2016. BR15 includes the enactment of the Buildings Directive and the energy agreements of 2008 and 2012. For example, the 2008 energy agreement stipulates that the maximum level energy requirements of a new building under the building regulations are to be reduced by 25% by 2010, 2015 and 2020; all in relation to 2006, meaning an overall reduction of 75%.

The main changes in BR15 are as follows:

- Low energy class 2015 becomes the minimum requirement for all new buildings (implementation of the

second 25% reduction).

- Introduction of voluntary energy classes for existing buildings.
- More stringent energy requirements for windows and abolition of requirements concerning the surface temperature of windows.
- Adaptation of the BR requirements concerning systems in buildings to EU energy requirements concerning products (eco-design regulations).

Creation of the Energy Savings Secretariat

The Energy Savings Secretariat was founded in autumn 2014 and aims to support the identification and dissemination of energy efficiency measures in the private sector. In close cooperation with stakeholders in the field, the Secretariat has made some overall analyses of energy consumption by businesses, energy saving potential in business, barriers to increasing energy efficiency, behaviour in relation to increasing energy efficiency, previous experiences of energy efficiency measures and experiences of municipal measures. More detailed analyses have also been made of particular areas within individual sectors. The Secretariat is currently preparing and carrying out a number of awareness-raising activities, tools and networking campaigns, which will focus on and promote energy savings specifically in SME segments that have great cost-effective potential overall, but struggle to increase their energy efficiency due among other things to their size.

Central government buildings

Total floor area

On 17 December 2015, Denmark sent an updated report on the total floor area of central government buildings. It stated the following:

'Work to determine the surface area of State buildings with reference to the criteria in Article 5 of the EED has been ongoing since mid-2015. Preliminary calculations show that according to the BBR [Register of Buildings and Dwellings] and information from the building owners, the State has 8.9 million m² at its disposal. It is calculated that buildings over 250 m² account for 8 million m² of this. It is further calculated that 7.3 million m² of this subset consists of buildings that are not protected. Finally, a calculation has been made of the proportion of buildings that are labelled in a class below the current standard. The total area in non-protected buildings over 250 m², that are owned and occupied by central government institutions, is thus calculated to be 6.2 million m².'

These floor areas are still valid.

Trends in the central government's energy consumption

Denmark has notified the Commission that Article 5 of the EED would be implemented using the

alternative approach. The central government's energy consumption is reported to a central database, which forms the basis for a yearly calculation of the total energy consumption in central government buildings. The database includes the central government's entire buildings portfolio, including buildings covered by Article 5(2) (e.g. listed buildings and buildings serving national defence purposes) which, pursuant to the Directive, may be exempted from the requirements set under (1). The central government's energy consumption increased by 5 671 MWh (0.26%) from 2013 to 2014. A small part of this consumption has been calculated by backcasting validated data, which is why there is slight uncertainty as regards the calculation. The central government's 2015 energy consumption will be calculated in October 2016.

National energy efficiency obligation schemes

Denmark meets its Article 7 obligations exclusively through the use of energy efficiency obligations. The obligations are part of the Energy Policy Agreement of March 2012 and have been laid down up to 2020 by Order No 1394 of 2 December 2015 on energy-saving performance in grid and distribution companies. In 2013 and 2014, the annual target for the Danish energy efficiency obligations was 10.7 PJ, which corresponds to approximately 2.6% of energy end use (excluding transport). The annual target for the 2015-2020 period has been set at 12.2 PJ, which corresponds to 3.0% of energy end use (excluding transport). Individual sectors made and reported energy savings in 2013 and 2014, as shown in Table 1. The table also shows the proportion of energy savings made by distribution and transmission grids and energy production.

Table 1. Energy companies' total reported savings in 2013 and 2014

(TJ)	Annual savings target 2013-2014	Reported savings for 2013	Reported savings for 2014
Electricity companies	4 500	3 446	3 212
Natural gas companies	2 000	1 933	1 961
District heating companies	3 700	2 702	3 759
Oil companies	500	295.0	261
Total	10 700	8 377	9 193
Of which % of net and production savings		5.5%	7.0%

The grid and distribution companies have been subject to energy efficiency obligations since 2006. They exceeded their efficiency targets in all years in the period 2007-2012. In fact, they exceeded them to such an extent that despite underachieving in 2013 and 2014, all sectors met their energy efficiency obligations by the end of 2014. Natural gas and district heating also invariably exceeded their targets to some extent. The preliminary figures for energy savings in 2015 show that overall the companies have achieved energy savings of 12.2 PJ, i.e. the whole target, and that all sectors have met their obligations by the end of 2015.