



Extract from the report to the  
Public Accounts Committee on  
Denmark's reduction of CO<sub>2</sub> -emission

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## I. Introduction and conclusion

1. This report is about the effort made by the Danish Ministry of the Environment and the Danish Ministry of Climate, Energy and Building to ensure that Denmark meets its commitment to reduce the emission of greenhouse gases in accordance with the Kyoto Protocol.

Rigsrevisionen took the initiative to the study in August 2011 as part of a parallel audit performed in collaboration with Poland and several Nordic and Baltic countries. The parallel audit is about the CO<sub>2</sub> emission trading system, the CO<sub>2</sub> emissions trading registry system and the administration of DCM and JI programmes, and is expected to be finished in December 2012.

2. In 1997 the UN adopted the Kyoto Protocol which commits the member countries to reducing their greenhouse gas emission. Denmark has committed to reducing its greenhouse gas emission by 21 per cent in the years 2008 to 2012 compared to the 1990 level.

The UN has not set any targets for the reduction of greenhouse gas emissions after 2012, but the European Union (EU) and Denmark have set and committed to targets for the period 2013-2020. In addition to this commitment, the Danish government has established a number of policy statements including its intention to phase-out fossil fuels by 2050.

3. The Kyoto Protocol has developed three mechanisms through which Denmark and the other UN member countries can reduce their greenhouse gas emissions: the first mechanism is the government's purchase of CO<sub>2</sub> credits. Within a credit limit determined by the EU, the government is allowed to purchase CO<sub>2</sub> credits that contribute to reducing global greenhouse gas emission by financing projects intended to reduce greenhouse gas emissions in other countries. The second mechanism includes activities that reduce emissions in sectors that are not subject to the emission trading system such as afforestation and other government activities like, for instance, taxes and grant programmes. The third and last mechanism includes reductions of emissions implemented by companies subject to the emission trading system in sectors subject to emission restrictions. The government sets an emission cap for specific companies and the emission trading system is meant to ensure that reductions are implemented in the companies where emission can be reduced most cost effectively.

4. The starting point in the Danish climate strategy from 2003 is that domestic efforts aimed at reducing emission of greenhouse gases through the three Kyoto mechanisms must be organized cost effectively. This means that Denmark must first use its emission allowances and subsequently invest only in CO<sub>2</sub>-reduction measures if the reductions that Denmark can achieve through the emissions trading system are less cost effective. The climate strategy covers the period 2008-2012, and a similar strategy has not been developed for the period following the expiry of the Kyoto Protocol.

The objective of the **parallel audit** is to examine whether EU's emission trading system functions as intended in the seven countries involved in the audit: Denmark, Finland, Latvia, Lithuania, Norway, Poland and Sweden. The audit addresses also the national emission registries under the emission trading system and how the EU member states manage climate projects and purchase of CO<sub>2</sub> credits.

The results of this study and Rigsrevisionen's report on the administration of the Danish emission trading registry will be included in the parallel audit.

**Companies that are subject to the emission trading scheme** include electricity supply companies, coke ovens, refineries and companies of a certain size that manufacture cement, glass, iron and steel, and ceramics (tile).

### Responsible ministries

The Ministry of the Environment was responsible for implementation of the tasks relating to fulfillment of the Kyoto commitment until 2007. Then the tasks were transferred to the Ministry of Climate, Energy and Building which has since been responsible for coordinating the overall effort to ensure that Denmark fulfills its CO<sub>2</sub>-reduction commitment.

5. The objective of the study is to examine the effort made by the Ministry of the Environment and the Ministry of Climate, Energy and Building to ensure that Denmark fulfills its commitment under the Kyoto Protocol in compliance with its climate strategy. The report answers the following questions:

- Has the Ministry of the Environment ensured that the burden of the CO<sub>2</sub>-reduction commitment is distributed in compliance with the climate strategy?
- Has the Ministry of Climate, Energy and Building ensured that Denmark reduces its greenhouse gas emissions by 21 per cent?

### MAIN CONCLUSION

**In 2007 the Ministry of the Environment determined how the burden of the CO<sub>2</sub>-reduction commitment should be distributed between the three mechanisms. The ministry has thus met the objective of the Danish climate strategy according to which greenhouse gas emissions in the period 2008-2012 should be reduced as cost-effectively as possible. Based on the estimated price of emission allowances and credits, the ministry decided that the government should buy as many CO<sub>2</sub> credits as possible under the EU's cap and implement domestic reduction projects only if doing so was more cost effective than buying allowances. The remainder of the reduction commitment was placed on companies operating in sectors subject to the emission trading system.**

**According to provisional estimates of CO<sub>2</sub> emissions in the period 2008-2012 made by the Ministry of Climate, Energy and Building, Denmark is expected to outperform the Kyoto target and reduce greenhouse gas emissions by 21.5 per cent. The provisional estimates also show that the above-mentioned CO<sub>2</sub>-emission reductions have been achieved largely in accordance with the ministry's plan for cost-effective distribution of the burden between the three mechanisms.**

**Due to the Danish focus on cost-effective achievement of the Kyoto target set for the period 2008-2012, Denmark has only launched very few domestic emission reduction projects that can provide the basis for sustainable CO<sub>2</sub> reductions in Denmark. The financial crisis has reinforced this trend and has also led to a lower price of allowances than anticipated. The financial incentive for the companies to invest in CO<sub>2</sub>-reduction projects has therefore been very limited. Rigsrevisionen therefore finds that Denmark's future climate strategies should focus on launching long-term CO<sub>2</sub>-reduction projects to support Denmark in its efforts to meet the very ambitious objective of phasing out fossil fuels by 2050.**

**Rigsrevisionen finds that the Ministry of Climate, Energy and Building should estimate the total cost for the Danish government of meeting the Kyoto target. The ministry should also, to the extent possible, estimate the effect of the national CO<sub>2</sub>-reduction projects. Access to this information would provide the Danish Folketing (parliament) with the best possible basis for the elaboration of future strategies for reducing CO<sub>2</sub> emissions.**

The main conclusion is based on the following sub-conclusions:

*Has the Ministry of the Environment ensured that the burden of the CO<sub>2</sub>-reduction commitment is distributed in compliance with the climate strategy?*

The Ministry of the Environment distributed the burden of the reduction commitment between the three mechanisms in compliance with the Danish climate strategy, which states that the government must buy as many CO<sub>2</sub> credits under the EU cap as possible and subsequently invest in domestic CO<sub>2</sub>-reduction projects only if doing so is more cost effective than buying emission allowances. 27 per cent of the reduction should thus be achieved through the purchase of CO<sub>2</sub> credits, 30 per cent through national reduction projects, including changes in the emissions or removals from forests and land regions, and the remaining 43 per cent through reductions in sectors subject to the emission trading system.

*Has the Ministry of Climate, Energy and Building ensured that Denmark reduces its greenhouse gas emissions by 21 per cent?*

In 2008 and 2010, Denmark's total CO<sub>2</sub> emissions exceeded the average annual emission cap. According to projections made by the Danish Energy Agency, emissions will, however, drop in 2011 and 2012 and by the end of the period 2008-2012, Denmark will outperform the Kyoto target by annually 0.4 million ton of CO<sub>2</sub>. In that event, Denmark will reduce emission of CO<sub>2</sub> by 21.5 per cent compared to the 1990 level.

The financial crisis has led to considerably lower CO<sub>2</sub> emissions than expected. The companies' demand for emission allowances – and thereby also the price of emission allowances – has therefore been lower than assumed. In consequence hereof the companies have not to the extent expected had any incentive to implement long-term investments in CO<sub>2</sub>-reduction projects.