

NON-PAPER OF THE SERVICES OF THE EUROPEAN COMMISSION ON

ENERGY EFFICIENCY DIRECTIVE

INFORMAL ENERGY COUNCIL

19-20 APRIL 2012

INTRODUCTION

This non-paper aims at supporting the discussions on the proposal for a new Energy Efficiency Directive by providing information on its estimated costs and benefits. It also compares the estimated impact of the original Commission proposal with the Council text, version of 4 April 2012. The evaluation is made by the Commission Services on the basis of available expert research.

BENEFITS AND COSTS OF ENERGY EFFICIENCY

The Commission's assessment for the Energy Efficiency Plan¹ showed that with the policies and measures then in place, the EU was on track to achieve only about half of its 20% energy efficiency target for 2020. To put this right, policies to deliver an additional 202 million tons of oil equivalent (Mtoe) of energy savings were needed. To close the gap, the Commission proposed a new Energy Efficiency Directive, which would contribute about 150 Mtoe, and a Transport White Paper² with measures that would contribute about 50 Mtoe.

To evaluate the impact of the Energy Efficiency Directive proposal two models were used. A macroeconomic assessment of the proposal, using the Energy–Environment–Economy Model for Europe (E3ME), estimated that the Directive will lead in 2020 to:

- increased EU GDP of €34 billion;
- increased net employment of 400 000.

A more fine-grained energy sector assessment using the PRIMES model³ estimates that the Directive will have the following cost impacts over the 2011-2020 period⁴:

- increased costs for investment in energy efficiency (house insulation, energy management, control systems, etc.) of an average of €24 billion annually;
- reduced costs for investment in energy generation and distribution of an average of €6 billion annually;
- reduced fuel expenditure of an average of about €38 billion annually as a result of a lower need for energy.

¹ SEC(2011)277

² SEC(2011) 358

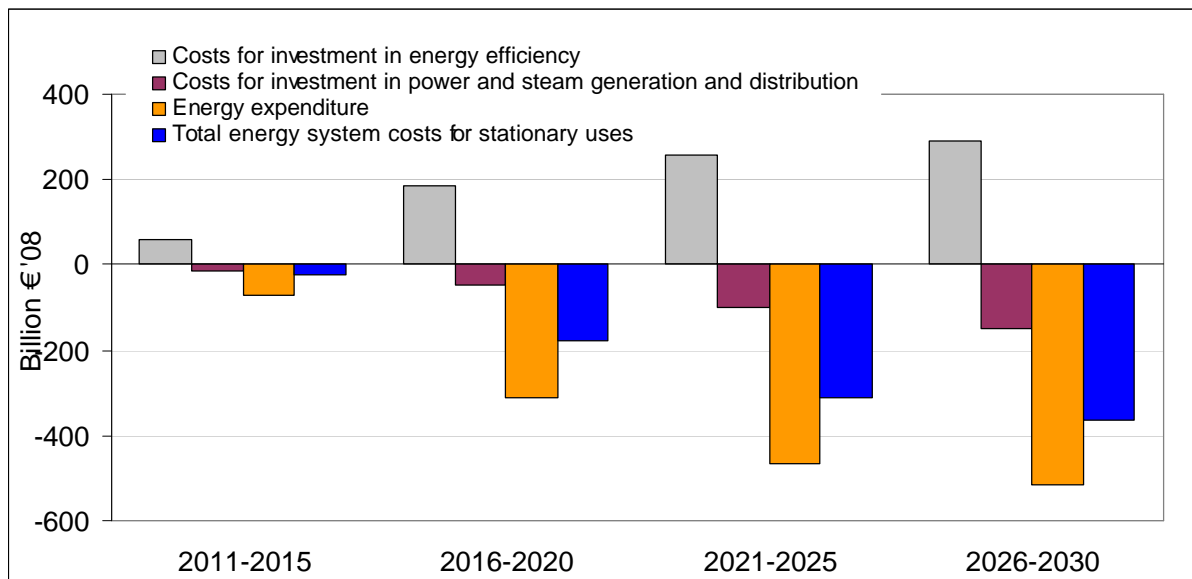
³ This additional assessment is based on a comparison of the PRIMES reference scenario used in the Energy Roadmap 2050 (which leads to a primary energy reduction of 9.2% and contains energy efficiency policies up to March 2010) and the 20% energy efficiency scenario used for the impact assessment for the Energy Efficiency Directive, both updated to 2010 energy price forecast.

⁴ The costs mentioned (e.g. investments in energy efficiency measures and in power and steam generation and distribution, total energy system costs) are averaged, annualised energy system costs for stationary uses excluding disutility and direct auction payments. It should be noted that in PRIMES most energy generation costs up to 2020 are derived from exogenous assumptions and the impact of reduced energy demand is therefore not fully modelled.

As a result total cost impacts of the Directive over the 2011-2020 period are negative – an annual average reduction in overall spending on energy of about €20 billion.

These costs are based on the assumption of oil prices of 88\$/barrel in 2020, rising to 106\$/barrel in 2030. If prices stay higher than this (current price: 103\$/barrel), the cost saving from energy efficiency will be greater. In addition, it should be noted that the analysis does not take into account the fact that lower energy demand (as a result of energy efficiency policies) will lead to lower energy prices.

The following figure presents the development of the direct and avoided costs in five year periods.



COMMISSION PROPOSAL FOR A NEW ENERGY EFFICIENCY DIRECTIVE (EED)

The impact assessment for the Energy Efficiency Directive⁵ showed that the measures contained in the proposal would deliver an additional 151.5 Mtoe of savings in 2020. This calculation takes into account the overlaps between measures (so that the predicted impact is less than that of each measure when calculated individually). The main articles and their impact are the following:

- Article 4 on renovation of the buildings owned by public bodies and Article 5 on public purchasing aim at using the visibility of public buildings and the power of public spending to drive market transformation and promote innovative financing. The expected savings in 2020, after the removal of overlaps, are **4.2** and **4.8 Mtoe**, respectively.
- Article 6 on energy efficiency obligation schemes aims to ensure that new or strengthened policy tools trigger energy savings among final consumers are established. The estimated savings in 2020 are **74.9 Mtoe** after the removal of overlaps.
- Article 7 on energy audits aims at providing information and triggering action mainly in large companies. The expected savings after the removal of overlaps are **8.6 Mtoe**.
- Article 8 on metering and billing aims at providing consumers with basic rights to information about their energy consumption that, as practical experience has shown, will

⁵ SEC(2011) 779

give them the tools they need to choose more efficient energy use. The expected savings after overlaps are removed are **26.5 Mtoe**.

- Article 10 on cogeneration aims at promoting this sustainable energy transformation solution whose share in electricity generation has remained unchanged since 2004. The expected impact is **25.0 Mtoe**.
- Article 12 on efficiency of energy transmission aims at increased efficiency from the management of energy infrastructure. The expected impact is **7.5 Mtoe**.

(These aggregated figures differ from those given for individual measures in the Commission's impact assessment because overlaps between measures affecting final consumers have been taken into account and because the measures in the Commission's proposal have some technical differences from those analysed in the impact assessment.)

COUNCIL VERSION OF 4 APRIL 2012

The Commission Services have carried out a preliminary, desk-based analysis of the impact of the text of the Directive as it appears in the Council version of 4 April 2012. The main changes of ambition in the Council text appear to be the following:

- Article 4: the scope is reduced to buildings owned and occupied by central government; behavioural savings as well as building renovation can be counted. As a result the estimated impact of this Article is **reduced from 4.2 to 0.4 Mtoe**.
- Article 5 is made essentially non-binding (“shall encourage” rather than “shall”) and only applies to the largest contracts (above €130 000). As a result the estimated impact of this Article is **reduced from 4.8 to 0.6 Mtoe**.
- Article 6 (energy efficiency obligations) is curtailed in four main ways. First, there is a lower level of ambition (1.0% or 1.25% rather than 1.5%) in four out of the seven years in which the requirement will be in operation. Second, some savings from the supply side can be counted (the Commission’s proposal covers only savings among consumers), leading to ‘double counting’ with Articles 10 and 12. Third, up to 40% of ETS industries' energy consumption can be excluded. Fourth, five years of early action (energy efficiency improvements that have already happened) can be counted. The estimated impact of this Article is **reduced from 74.9 to 29.1 Mtoe**.
- Conditionality has been added to the metering and billing requirements of Article 8 which effectively remove the benefits it brings compared to existing legislation (the Energy Services Directive). The estimated impact of this Article is **reduced from 26.5 to 0 Mtoe**.
- Article 10 on cogeneration has become an obligation to carry out cost benefit analysis rather than an obligation, in appropriate circumstances, to develop cogeneration. The estimated impact of this Article is **reduced from 25.0 to 8.3 Mtoe**.

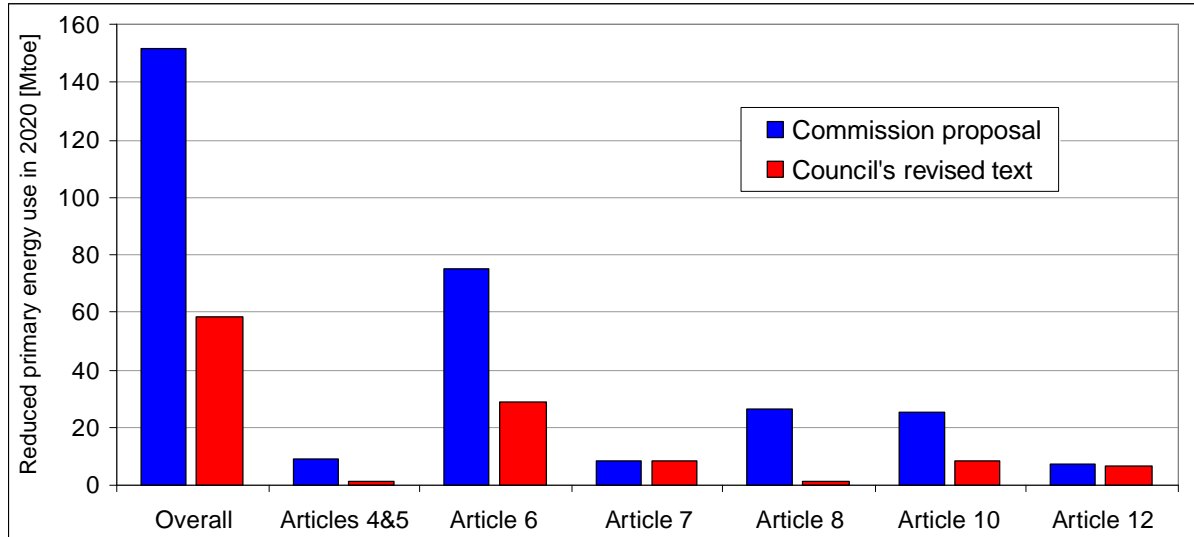
The impact of Article 7 has not been reduced and there is only a small reduction of the likely impact of Article 12.

The following new elements have been introduced:

- Article 6 now contains a link with Article 11 on improving the efficiency of existing power plants which was not included in the Commission proposal. This is estimated to deliver **additional savings** (to the above mentioned 29.1 Mtoe) of **3.3 Mtoe**.

- Article 8 now contains some requirements for metering in multi-apartment buildings with their own central heating systems. This is estimated to deliver **additional savings of 1.0 Mtoe**.

The figure below presents a comparison of the level of ambition of the Commission proposal and the Council's revised text.



The Council's version of the Directive is thus estimated to reduce primary energy consumption by about **58.1 Mtoe** while the Commission's proposal would deliver a saving of **151.5 Mtoe**, which is needed to close the gap (along with measures in the transport sector) to achieve the 20% target..

The impact of the Council version would therefore represent 38% of the expected impact of the Commission's proposal.

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