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**COMMISSION STAFF WORKING PAPER**

**SUMMARY OF THE IMPACT ASSESSMENT**

*Accompanying document to the*

**Proposal for a**

**COUNCIL DIRECTIVE**

**amending Directive 2003/96/EC restructuring the Community framework for the  
taxation of energy products and electricity**

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## 1. PROBLEM DEFINITION

The Commission services carried out an impact assessment to examine the impacts of possible options for the revision of the Energy Taxation Directive<sup>1</sup> (hereafter "the ETD" or "the Directive").

The EU has set itself a series of demanding, legally binding climate and energy targets. The current Directive is not consistent with this policy framework and contains several shortcomings from the perspective of the functioning of the internal market. In particular, the following problems should be addressed:

(1) The current minimum rates are based on the volume of energy products consumed. They do not reflect the energy content or the CO<sub>2</sub> emissions of the energy products, leading to inefficient energy use and distortions in the internal market. They also create incentives that are contradictory to the EU energy and climate change goals as, for instance, they promote the use of coal (lower tax rate) which is the product with the highest CO<sub>2</sub> content. As regards motor fuels, lower minima for diesel further reinforce the natural advantage that diesel has over petrol due to its higher energy content. The current minimum rates also discriminate against renewables which are in principle taxed at the rate of the conventional fuel which they replace even though their energy content is lower (e.g. ethanol versus petrol and biodiesel versus gas oil). Moreover, the current minima do not create a level playing field for business consumers, because, in practice, economic operators can be better off compared to others depending on the energy source they use.

(2) There is lack of coordination between the ETD and the EU ETS (Emission Trading System) Directive<sup>2</sup>. The purpose of both the EU ETS and of a CO<sub>2</sub> tax which Member States can levy on the basis of the ETD is to allow for cost-efficient reductions in greenhouse gases for a specific set of activities. However, CO<sub>2</sub> taxation on the basis of the ETD is applied by Member States in an uncoordinated manner. Hence, more guidance and clearer rules in the ETD are required. The scope of the ETD covers in principle all energy products and electricity used to produce heat or to move engines. The EU ETS Directive applies to greenhouse gas emissions from major energy and industrial installations. Some operators consuming energy are covered by both instruments (e.g. paper mills), whilst others are left outside the scope of both regulatory frameworks (e.g. small installations using energy in certain industrial processes). Both situations can lead to cost-efficiency losses and can distort the internal market. Whilst combined application of taxation and the EU ETS Directive produces a strong incentive to reduce emissions, this might not be where reducing emissions would be the cheapest. This undermines the very logic of the EU ETS and distorts its functioning.

(3) The ETD contains two provisions allowing for special treatment of certain energy consumers which have to be reviewed by the Council on the basis of a Commission proposal. Article 9(2) of the ETD allows three Member States (BE, LU and DK) to apply levels of taxation for heating gas oil below the minimum level of taxation. Article 15(3) of the ETD

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<sup>1</sup> Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for taxation of energy products and electricity (OJ L 283 of 31.10.2003 p. 51).

<sup>2</sup> Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003, p. 32–46).

allows Member States to apply a level of taxation down to zero to energy products and electricity used in agricultural, horticultural or piscicultural works, and in forestry. It is the only provision in the ETD that allows that certain business consumers benefit from unconditional reductions/exemptions below the EU minima.

## **2. IS EU ACTION JUSTIFIED ON GROUNDS OF SUBSIDIARITY?**

The problems identified can only be remedied by means of a revision of the ETD. Under the existing ETD, Member States can increase the rates of their energy taxes or introduce CO<sub>2</sub>-related taxes. However, such national approaches risk distorting the internal market, due to the non-harmonised structure and level of the national taxes:

- (1) The current minimum rates limit the level of ambition that Member States can pursue with taxes on energy, in particular for business use where energy taxation directly affects the competitiveness of companies.
- (2) CO<sub>2</sub> taxes introduced in the framework of the existing ETD do not adequately address emissions in the non-ETS sector as a large part of energy use remains untouched by those CO<sub>2</sub> taxes. Furthermore, for energy uses covered by the ETD, it is difficult to apply a CO<sub>2</sub> tax only to non-ETS installations.
- (3) A theoretical "CO<sub>2</sub> tax" can be put into practice in a number of ways and the lack of an EU-framework opens the door to the creation of national solutions which can lead to internal market distortions and/or double taxation.

## **3. THE MAIN POLICY OBJECTIVES**

The main objective of the revision of the ETD is to bring it more closely into line with the EU's energy and climate change objectives, in particular to address CO<sub>2</sub> emissions in the non-ETS sector, avoid negative interference with the EU ETS, facilitate energy savings and deployment of renewables and allow revenue generation in an un-distortive way. In general, the revision should improve the structure of the current Directive, so as to enable the Member States to use energy taxation more effectively for environmental and other policy purposes and to improve the functioning of the internal market.

The objectives of the revision of the ETD can be further specified as follows:

- (1) Ensure consistent treatment of energy sources in the ETD and therefore create a real level playing field between different energy consumers.
- (2) Provide an adapted taxation framework for renewable energies.
- (3) Provide a framework for the use of CO<sub>2</sub> taxation in areas where the EU ETS does not apply and avoid overlaps between both instruments leading to losses in cost-efficiency.

## **4. POLICY OPTIONS**

In order to examine how the different policy objectives could best be addressed, a number of options were examined, comparing them to the baseline (= no further changes to the existing

ETD beyond the gradual expiry of the remaining transitional periods). Option 1 and 2 consist in revising the minimum rates of the various energy sources in a coherent way, respectively based on an energy-content and on a CO<sub>2</sub> basis. Options 3A and 3B propose to revise the structure of the Directive by splitting existing minima into two parts (energy content and CO<sub>2</sub> emissions) reflecting the different environmental objectives behind energy taxes - energy savings on the one hand and reduction of CO<sub>2</sub> emissions on the other (option 3B having lower minimum rates for CO<sub>2</sub> taxation). Option 4 consists in introducing an additional uniform CO<sub>2</sub> tax on top of the taxes already levied under the ETD to complement the EU emission trading scheme (policy option 4). Two transport specific options (options 5 and 6) model the impact on the fuel mix of aligning the petrol and diesel rates on an energy content and CO<sub>2</sub> basis. As opposed to option 5, option 6 requires Member States to respect the relationship between the minimum rates in their national tax rates.

In order to examine the impacts of the policy options, assumptions on the levels of taxation had to be made. For the part of taxation based on CO<sub>2</sub> emissions, a range of CO<sub>2</sub> prices covering the range of price expectations inside and outside the ETS were used in the modelling (10, 20 and 30€/t). The energy content part of taxation was based on the current rates of certain heating products and, for motor fuels, on the rates proposed in the commercial diesel proposal<sup>3</sup>. The resulting rates used for modelling options 1 to 6 expressed in the units used in the ETD are shown in the following table:

**Table 1: Minimum rates of taxation used for modelling options 1 to 6 (rates on 1/1/2013) in current ETD units**

Energy product	Unit	Minima as set in the ETD	Commercial diesel proposal	Option						
				1	2	3A	3B	4	5	6
<i>Motor fuel use</i>										
Petrol	€1000 l	359	380	380	380	380	380	380	380	380
Gas oil	€1000 l	330	380	380	380	380	380	380	438	438
Kerosene	€1000 l	330	330	330	330	330	330	330	409	409
LPG	€1000 kg	125	125	125	125	125	125	125	528	528
Natural gas	€GJ	2.6	2.6	2.6	2.6	2.6	2.6	2.6	na	na
<i>Heating use (non-business use)</i>										
Gas oil	€1000 l	21	21	22.2	54.9	66	38.6	60.3	na	na
Heavy fuel oil	€1000 kg	15	15	24.0	61.8	73.8	42.9	68.0	na	na
Kerosene	€1000 l	0	0	20.9	50	59.0	34.7	55.0	na	na
LPG	€1000 kg	0	0	27.6	58.0	71.2	42.5	63.8	na	na
Natural gas	€GJ	0.3	0.3	0.6	1.1	1.4	0.9	1.2	na	na
Coal	€GJ	0.3	0.3	0.6	1.9	2.2	1.3	2.1	na	na
Electricity	€MWh	1.0	1.0	2.16	0	1.0	1.0	0	na	na
<i>Heating use (business use)</i>										
Gas oil	€1000 l	21	21	22.2	54.9	60.4	33	60.3	na	na
Heavy fuel oil	€1000 kg	15	15	24	61.8	67.8	36.9	68.0	na	na
Kerosene	€1000 l	0	0	20.9	50	55.2	30.2	55.0	na	na
LPG	€1000 kg	0	0	27.6	58	64.9	35.9	63.8	na	na
Natural gas	€GJ	0.15	0.15	0.6	1.1	1.3	0.7	1.2	na	na
Coal	€GJ	0.15	0.15	0.6	1.9	2	1.1	2.1	na	na
Electricity	€MWh	0.5	0.5	2.16	0	0.5	0.5	0	na	na

<sup>3</sup> COM(2007) 52.

Moreover, two additional policy options were identified to respond to revision clauses contained in Articles 9(2) and 15(3) of the Directive. Finally, a number of options were assessed for awarding special treatment to sectors deemed to be at risk of carbon leakage.

## 5. ASSESSMENT OF IMPACTS

The assessment is based on the wide range of contributions from various stakeholders (Member States, businesses, other Commission services). In addition, the Commission has made a qualitative and quantitative analysis, using the results of three models in order to assess the impacts (E3ME, TREMOVE, and QUESTIII).

In general, a more efficient tax structure in itself would provide better and more consistent price signals and would ensure more effective use of energy taxation both for environmental and fiscal purposes. This impact assessment shows that the costs of restructuring the existing tax system now would be very low or even negative. As far as administrative costs are concerned, using the existing excise system for the purpose of CO<sub>2</sub> taxation allows introducing a new element in energy taxation without any additional costs and without any new administrative burden for companies and tax administrations.

Macroeconomic impacts of all policy options are essentially driven by how Member States use additional revenue. If the revenue is recycled through reductions in labour costs, effects on GDP and employment are always positive, although limited in size. As the scale of effects depends on the amount of additional revenue generated, option 4 yields the highest effects. GDP change nevertheless stays below 1/3 of a percentage point, whereas the number of additional jobs created would grow to just under 1 million in 2030. The effects of the other policy options would remain considerably smaller. These trends were confirmed by additional modelling carried out on the basis of updated baseline projections taking into account the effects of the financial and economic crisis. Revenue recycling in the form of lump-sum transfers to households or the use of additional revenue for fiscal consolidation does not generate positive GDP and employment effects.

The level of additional revenue for Member States under the different policy options (independently of the question of recycling) was found to depend heavily on how they would implement the new structure and in how far they would make use of the possibility for exemptions or reductions. An additional CO<sub>2</sub> tax of 20€/t on all non-ETS emissions has a budgetary potential of about 40 billion € in 2020 for the EU-27.

The most relevant environmental externality addressed by taxation is CO<sub>2</sub> emissions. Under all options total CO<sub>2</sub> emissions would reduce, up to around 2% under option 4. This represents about 37% (or 92 million t CO<sub>2</sub>) of the reduction effort needed outside the ETS if one takes into account the baseline emissions as corrected downwards recently. Likewise, all options would, to varying degrees, provide a more favourable tax environment for the deployment of renewable energies and in particular biofuels.

Overall the ETD revision was not found to produce negative income effects, but the distributional impact varies according to the method of revenue recycling chosen. Although labour-tax recycling produces the best overall results for household income, it tends to favour higher income over low-income households. Lump-sum recycling avoids regressive distributional effects though at the cost of producing a slight overall income decrease. A parallel increase in transport costs mitigates regressive distributional impacts of heating cost increases.

As a whole, the sectoral impacts do not raise a concern for adverse competitiveness effects in any of the policy options, although effects are not equally distributed among productive sectors. Under the assumption of labour tax recycling, employment levels are higher or constant in all sectors and only very few sectors experience small output losses.

As regards the car manufacturing sector, it should be observed that the mandatory alignment between national rates for motor fuels under option 6, assuming that MS would keep their petrol rates unchanged and would only increase rates on diesel, would only slow down the increase in sales of diesel cars (they would decrease by 11.7% by 2020 compared to the baseline, which still represents an increase in 9% of sales of diesel cars in absolute figures).

Option 6, removing the price advantage for diesel both in the EU minima and in national rates would also have a rebalancing effect on the supply and demand on the fuel market. Such neutral treatment of all transport fuels would provide a technology neutral advantage to all CO<sub>2</sub>-free fuels and would also encourage energy efficiency.

**6. COMPARISON OF OPTIONS**

The policy options were assessed against the following key criteria, reflecting the policy objectives described in Chapter 3: internal market and fair competition, environmental effectiveness (CO<sub>2</sub> reductions), budgetary impacts and equity (among Member States and energy consumers). The results are summarised in Table 2:

**Table 2: Comparison of the policy options in terms of selected assessment criteria**

Policy option	Internal market and fair competition	Environmental effectiveness	Budgetary impacts	Equity
Option 1	+	(+)	+	+
Option 2	-	+	-	-
Option 3A	++	+	+	-
Option 3B	+	(+)	(+)	++
Option 4	(+)	++	++	--
Option 5	++	+	+	+
Option 6	(-)	++	++	+

Note: The brackets denote that only half a mark is given.

All policy options improve the functioning of the internal market as they remove distortions between the tax treatment of energy sources. Distortions between Member States are also reduced although somewhat less in option 3B because of the transitional period for nine Member States and in option 4 imposing an additional tax on top of existing national rates. A fairer treatment of ETS versus non-ETS companies is best achieved by the variants of option 3 which partially alleviate the tax burden on ETS companies by introducing a complementary CO<sub>2</sub> tax element for all installations not covered. As far as the transport options are concerned, option 6 is better able to achieve equal treatment of energy sources (petrol and diesel) but on the other hand might lead to somewhat higher divergence in rates between Member States.

Regarding environmental effectiveness, the highest CO<sub>2</sub> reductions are achieved under option 4 which introduces a uniform CO<sub>2</sub> tax across the EU. As for transport emissions, the REMOVE modelling showed that policy option 6 would not only impact on fuel mix but also on actual consumption thus leading to an overall reduction in CO<sub>2</sub> emissions in spite of a

certain readjustment in the demand between petrol and diesel in line with the objectives of the EU policies and with the CO<sub>2</sub> and cars strategy.

Although the budgetary impacts would very much depend on national taxation policies and are therefore rather difficult to predict, some policy options are more likely than others to create additional revenue or budgetary losses. Option 2 is the weakest from the budgetary point of view because it restricts the tax base exclusively to fossil fuels consumed in the non-ETS sector. Option 4, introducing an additional CO<sub>2</sub> tax on all non-ETS emissions, has the highest budgetary impact. It is estimated that an additional tax of 20€/t CO<sub>2</sub> on all non-ETS emissions could potentially generate about 40 billion € in 2020 for the EU-27.

Equity amongst Member States would best be enhanced under policy option 3B introducing transitional periods reflecting the solidarity approach of the energy and climate change package. Equity among energy consumers can be significantly increased if both heating and motor fuel uses are covered by the ETD revision, because such a combination limits potential negative distributional impacts.

### ***Additional policy options***

*Repeal of country specific minima for heating gas oil (Article 9.2):* The existence of the lower minima for heating gas oil in BE, LU and DK creates an undue advantage for business consumers in these countries, risking distorting the internal market.

*Making the application of reduced tax rates to the primary sector subject to environmental counterparts (Article 15.3):* Article 15(3), with its unconditional exemption possibility, is not in line with the objectives of the Directive related to tax rate harmonisation and incentives towards energy efficiency and emission reductions. Exemptions from or reductions in general energy consumption taxation should therefore be made conditional on providing a counterpart in terms of increased energy efficiency, while still maintaining a certain margin of flexibility for Member States to account for specificities of the sector.

*Awarding special treatment to sectors deemed to be at risk of carbon leakage:* To mirror the approach taken under the ETS, the potential risk of carbon leakage needed to be addressed for small installations within ETS sectors but excluded from the application of the ETS. It appeared that this can best be achieved with a tax credit for these small installations based on past energy consumption of the company multiplied by a fuel benchmark reflecting the CO<sub>2</sub> content of a reference fuel.

### ***Preferred policy set***

From the analysis of the various options a set of preferred elements was then identified that would, taken together, score best against the full set of criteria. Overall, policy option 3 was found to provide the best structure by proposing two separate minimum rates – one based on energy content and the other based on CO<sub>2</sub> emissions. Combining the somewhat more ambitious rates of option 3A with the transitional periods of option 3B is considered the best way of combining environmental effectiveness of the measure with respect of the equity criterion. This should be combined with policy option 6 for transport, which best ensures consistent treatment of energy sources.

The full set of preferred policy measures is the following:



- Structure and general level of taxation for heating fuels as presented in policy option 3A (20€/tCO<sub>2</sub> (2013-2020) and 30€/tCO<sub>2</sub> (2021-2030), (0.15 €/GJ for business use and 0.3 €/GJ for non business use).
- Transitional period for nine Member States for heating fuels to introduce CO<sub>2</sub> based taxation until 2020 as contained in policy option 3B.
- Taxation of transport fuels on the basis of transport policy option 6.
- Repeal of country specific minima for heating gas oil in accordance with Article 9(2) of the ETD.
- Reduction in the CO<sub>2</sub> tax liability for small installations from sectors deemed to be exposed to a risk of carbon leakage on the basis of a fuel benchmark.
- Make the application of tax reductions for the primary sector (Article 15(3) of the ETD), subject to the delivery of environmental counterparts in a simplified manner.
- Inclusion of biofuels into the list of energy products in the ETD.
- Indexation of the minimum rates based on energy content (Annex 14 explains how this could be done in practice). For the CO<sub>2</sub> part of the tax, this should take the form of a periodic alignment of the minimum rate to the evolution of the market price in the EU of the emission allowances based on an evaluation in the Commission report to be submitted in accordance with Article 29 of the ETD.

## 7. MONITORING AND EVALUATION

Monitoring of taxation of energy consumption is carried out at least once a year through the collection of information from Member States on the occasion of the meetings of the Excise Committee. Moreover, twice yearly DG TAXUD updates the information database on the energy tax rates applied by Member States (Excise Duty Tables).

Moreover, Article 29 of the ETD provides for a regular examination, on the basis of a report and, where appropriate, a proposal from the Commission, of the various provisions of the Directive and the minimum levels of taxation. This examination shall take into account the proper functioning of the internal market and the wider objectives of the Treaty. Once the ETD will be reviewed, this examination will have to focus, in particular, on how Member States have implemented the new framework for the taxation of energy products and electricity in their national systems, how it has allowed them to better integrate in them environmental and energy efficiency considerations and what is the economic impact, taking into account the way in which Member States have used any additional revenue.