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**COMMISSION STAFF WORKING DOCUMENT**

*Accompanying document to the*

**Proposal for a**

**COUNCIL DIRECTIVE**

**amending Directive 2003/96/EC as regards the adjustment of special tax arrangements for gas oil used as motor fuel for commercial purposes and the coordination of taxation of unleaded petrol and gas oil used as motor fuel**

**IMPACT ASSESSMENT**

**{COM(2007) 52 final  
SEC(2007) 171}**

This report commits only the Commission's services involved in its preparation.

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## IMPACT ASSESSMENT

### SECTION 1: PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

**Lead Directorate-General:** DG TAXUD

**Other Involved Services:** SG, TREN, ENV, COMP, ECFIN, ENTR

**Agenda Planning/Work Programme reference:** 2006/TAXUD/

- **Organisation and timing**

The impact assessment was launched in May 2006. It was presented during the July CGI meeting. The inter-service group composed of representatives of the Secretariat general, of Directorates-General TREN, ENV, COMP, ECFIN, ENTR and TAXUD gathered four times between June and October.

- **Consultation and expertise**

The assessment is based on the wide range of contributions produced by various stake holders through various means such as the Public Consultation, position papers, articles, and meetings. In addition, the Commission has used the results of three models in order to assess the impacts (Tremove, IPTS transport technologies model (Poles) and TRANSTOOLS).

The first model is Tremove, a transport and emissions simulation model designed to study the effects of different transport and environment policies on emissions of the transport sector. The model estimates transport demand, modal split, vehicle fleets, emissions of air pollutants and welfare levels under different policy scenarios. It covers the 1995-2020 period, with yearly intervals, for both passenger and freight transport in the EU-15 plus 4 of the 10 Member States that joined the EU on 1 May 2004<sup>1</sup>. All relevant transport modes are modelled, including air and maritime transport. Since it consists of a juxtaposition of 21 parallel country models, it can only measure changes on a national market and not the variations implied by relative changes between two countries. It cannot therefore measure trans-national impacts of transport and environment policies.

The second model is IPTS transport technologies model (Poles), which covers all 25 EU countries and aims to describe the fleet dynamics in road transport and the introduction of new technologies in the sector. The model simulates the impact of changes in fuel and vehicle prices, technological development, income, and user preferences on the supply and demand of different vehicle technologies. The main objective of the model is the analysis of 'what if?' scenarios describing alternative paths as regards future policy measures, technological development, socio-economic trends and other external factors that may -directly or indirectly- influence the dynamics of adoption of new transport technologies and, eventually, the impacts of transport on fuel consumption and emissions.

Since Poles too is not adapted to measure trans-national impacts, the Commission also ran TRANSTOOLS, a transport network model covering 55 countries. The model has been developed

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<sup>1</sup> The Czech Republic, Hungary, Poland and Slovenia. Switzerland and Norway are also covered by Tremove.

specifically for the analysis of EU policies related to transport. It provides a full coverage of transport demand for all modes and analyses impacts on traffic volumes, transport costs, modal shift, congestion, etc. For this impact assessment, the model allows the identification of national and international traffic in each member state's territory and estimates the corresponding fuel consumption. The comparison of the alternative scenarios allows the evaluation of the impact on fuel tourism – for a detailed presentation, please see annex 1.

### ***Consultation methods, main sectors targeted and general profile of respondents***

On 20 July 2006, the European Commission launched an online consultation in order to gather the views of the public and stakeholders on reforming excise duty for commercial diesel. The consultation was based on a paper (see annex 2) which gave information on the current fiscal situation and on the modifications which could be considered in order to narrow excessive differences in commercial diesel tax levels.

In parallel, written questionnaires were sent to the main representatives of the stakeholders including road transport associations, petroleum and car industry associations, NGOs. Comments were invited by 30 September 2006. The purpose of the exercise was to provide input to the discussion, gather relevant feedback and assist the Commission services in developing their policy on the subject.

A total of 52 external contributions were received in response to the consultation. Of these, 37 were from national federations or associations, 7 were from European or international organisations, 7 were from business and one was from a European citizen. The main industry sector reacting to the consultation was the haulage sector, which accounted for more than half of the responses. Tank (or service) stations and petroleum industry participation amounted to more than 10% of the responses. Other sectors, such as automobile industry, maritime ports, handcraft operators and railway firms also participated.

### **How responses have been taken into account**

All responses received were analysed and the main results were published on the Commission website. They can be summarized as follows.

The haulage industry warmly welcomed the Commission initiative. The great majority of the hauliers support a change in the current situation. The preferred option is total harmonisation in the near future (2018 seems too far away) and, if possible, at a lower rate. In case this option is not realistic, they could accept the implementation of a fluctuation band as an interim step towards harmonisation or as a second-best option. They think that it would be easier to have this solution adopted by Member States since it would leave them with a certain margin of manoeuvre to determine their fiscal strategy.

The representatives of the automobile industry acknowledged that the current situation is not satisfactory from an internal market perspective. However, they are not convinced that the magnitude of these problems is such that it warrants a change to fuel taxation systems that might, according to them, have potentially serious negative implications for the automobile industry. Since they do not suffer from the current situation, they would prefer the no-change option to any of the other proposed options.

At the European level, representatives of the petroleum industry have adopted a neutral stand on the proposed options. However, when located in high taxing countries, representatives of tank stations support the implementation of a fluctuation band or, even preferably, total harmonisation.

A summary report of the consultation results has been published under the following link:

[http://ec.europa.eu/taxation\\_customs/common/consultations/tax/index\\_en.htm](http://ec.europa.eu/taxation_customs/common/consultations/tax/index_en.htm)

**The Commission took the responses into account and modified the options under scrutiny to a certain extent.**

## SECTION 2: PROBLEM DEFINITION

- **Taxes on fuels and vehicles vary considerably from one Member State to the other**

The taxation of energy products and electricity in the Community is governed by the provisions of Council Directive 2003/96/EC<sup>2</sup> restructuring the Community framework for taxation of energy products and electricity (hereafter referred to as the “Energy Tax Directive” or the ETD). This Directive lays down the taxable products concerned, the uses that make them liable to tax and the minimum rates of taxation applicable to each product depending on whether it is used as propellant, for certain industrial and commercial purposes or for heating. To take gas oil and unleaded petrol, only the structure of excise duties is harmonised across the Community, according to the following minimum levels:

**Table 1: EU minimum rates fixed by the ETD for unleaded petrol and gas oil (diesel)**

<b>In euros per 1000 l</b>	<b>1 January 2004</b>	<b>1 January 2010</b>
Unleaded petrol	359	359
Gas oil <sup>3</sup>	302	330

It means that from 1 January 2004, unless they benefit from transitional periods, Member States can not tax unleaded petrol at a lower level than €359 and diesel at a lower level than €302.

In reality, the rates themselves differ a great deal from one Member State to another. The Table below illustrates the situation as indicated by Member States (in EUR/1000 litres, as at July 2006). For diesel, 9 countries do not comply with minimum rates because of transitional periods granted in order to take into account their specific situation<sup>4</sup>. 13 countries apply a rate fluctuating between €300 and €400 excise tax per 1000 litres. 5 countries tax at a level in excess of €400 per 1000 litres.

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<sup>2</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; Directive last amended by Directives 2004/74/EC and 2004/75/EC (OJ L 157 of 30 April 2004, p. 87 and p.100).

<sup>3</sup> These rates have to be respected by both commercial and non-commercial diesel.

<sup>4</sup> 4 transitional periods notably concern Member States which joined the EU on 1 May 2004 and 2 transitional periods concern Romania and Bulgaria that will join the EU on 1 January 2007.

**Table 2: Rates applied by Member States for unleaded petrol and gas oil**

	BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV
Unleaded petrol	592	400	508	654.5	288	313	396	589	443	564	305	276
Diesel fuel	327*	336	404	470*	245	260	294	417	368	413	249	236

	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	BG	RO
Unleaded petrol	287	442	413	474	668	417	356	558	360	398	588	536	738	271	327
Diesel fuel	245	278	339*	332	365*	325	303*	339	303	373	319*	394	693*	220	260

\*When several diesel fuels on the market, this table shows the rate for diesel with low sulphur content (in principle, less than 50 ppm or mg/kg).

All Member States fixed the rates for unleaded petrol at a higher level than for diesel. This situation is inherited from the time when minimum rates were first fixed, and when commercial road transport accounted for most diesel fuel consumption. Neither the respective energy content of the two fuels, nor their negative externalities on environment justify nowadays such differentiated treatment – cf. section 5.

- **Stiff competition within the transport sector paves the way for fuel tourism**

Road transport accounts for 1.6% of GDP and almost 2% of employment. Average growth in road freight transport is 3.4% a year, i.e. slightly above the average rate of growth in GDP in the EU. The main costs components are labour costs, fuel costs and capital costs, together accounting for around 80% of total costs. Their split varies greatly across the European Union. Fuel costs including excise duties made up between 11% and 38% of operating costs of HDV in 2005<sup>5</sup>, while labour costs represented between 14% and 58%. Both labour costs and fuel costs have increased considerably since the nineties, and in recent years the increase in fuel costs has been generally stronger than the rise in labour costs (Ecorys).

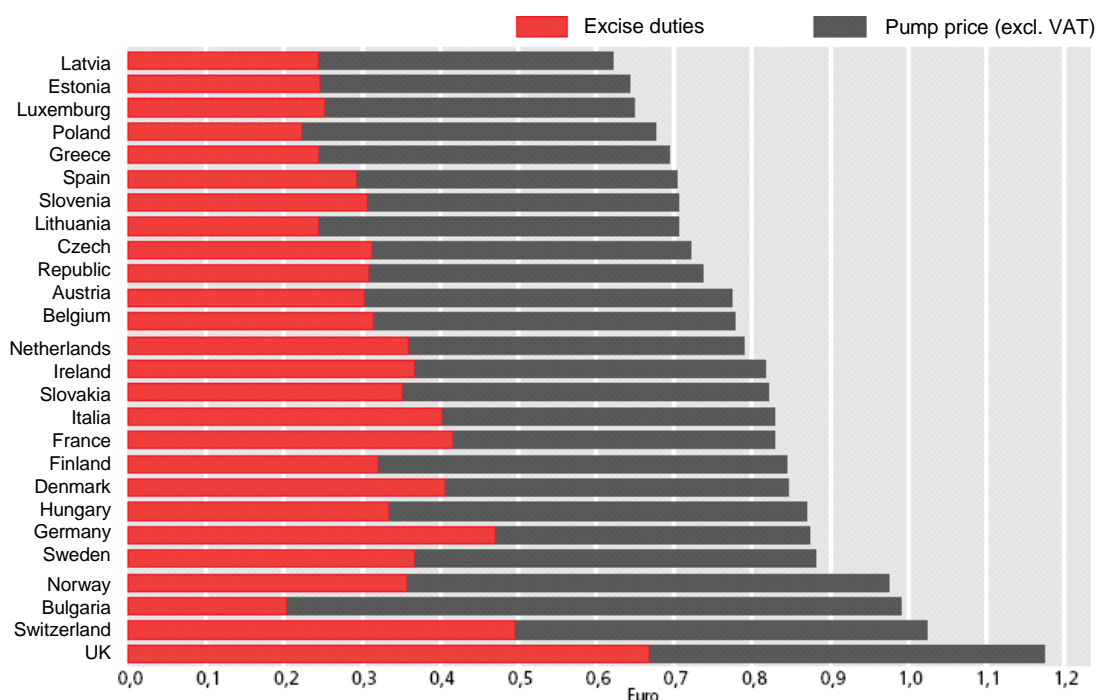
Fuel prices may differ by up to nearly 100 % between the cheapest and the most expensive EU countries. As excise duty represents between 30 and 60% of the pump price of diesel fuel (excluding VAT) and fuel (including taxes) represents on average between 20 and 30%<sup>6</sup> of the running costs of a road haulage business, this duty accounts for between 6% and 18% of the running costs of a road haulage business.

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Source: Analysis of the contribution of transport policies to the competitiveness of the EU economy and comparison with the United States (COMPETE), ISI, INFRAS, TIS, EE, study commissioned by the EC, 2006.

<sup>6</sup> This share tends to increase. In France for example, gas oil increased its share from 18 % in 2003 to 22 % in 2005. The smaller the firms are, the higher the percentage of fuel in operating costs is: in France, it represented 25 % in 2003 and 36 % in 2005 for firms of less than 6 employees.

**Graph 1 Excise duties and pump prices in Europe in 2004**



Source: *Transport in Cijfers 2004, TLN.*

Competition in the road freight sector is strong partly due to low entry costs, which gives rise to narrow profit margins. In recent years, competition has increased and companies' profits have decreased despite productivity gains. Moreover, the sector remains highly fragmented. The number of companies transporting goods in Europe amounts to roughly half a million in total. 95% of them are micro-companies with less than 10 employees and only 1% represents companies with more than 50 employees contributing 42 % of the total added value of the market. The asymmetrical nature of the relationship between the large majority of small and medium-sized companies on the supply side and their customers, which are often large industries and logistics companies, makes it difficult for SMEs to pass on cost increases to their customers, which contributes to reducing their operating margins and keeps some of them in a very difficult financial situation. All try therefore to minimize their costs as much as possible.

The huge capacity of big trucks allows them to cover distances of between 1500 and 3000 kilometres on a single tank<sup>7</sup>. Hauliers involved in international activities or situated in or near the border of low-taxing countries conduct a kind of fiscal planning called fuel tourism: they refuel in low-tax countries, in order to benefit from a significant competitive advantage.

The OECD has confirmed the existence of strong incentives, in particular for international freight hauliers, to carry out this type of fiscal planning<sup>8</sup>. This existence of fuel tourism is illustrated inter alia by data on the annual consumption of diesel per capita. The EU-25 weighted average is approximately 450 litres. Whereas the consumption of diesel per capita is less than 750 litres in

<sup>7</sup> The coupling of tanks grants a capacity of more than 1 000 l. The average fuel consumption of a 40 t lorry is 35 l/ 100 km. In 2003, 77% of the total tonne kilometres were carried by trucks bigger than 30 tonnes.

<sup>8</sup> A study by OECD (OECD/GD (97) 69 CO<sub>2</sub> Emissions from road vehicles) acknowledges that there is no precise estimation of this phenomenon; it underlines that the fiscal planning would be especially important in the EU. "Gasoline tourism" is thought to account for about 20% of gasoline sales in Switzerland.



other Member States, it amounts to more than 4200 litres in Luxembourg, a Member State with a diesel excise duty rate lower than all of its neighbors<sup>9</sup>.

In Austria, a marked increase in emissions occurred at the end of the 1990s, though it is not entirely attributable to increased internal traffic volume. Due to the ever increasing fuel price differences between Austria and neighbouring countries, especially Germany, Italy and Hungary, the Federal Ministry of Agriculture, Forestry, Environment and Water Management concluded that a significant portion of increased consumption was due to "fuel tourism". Various methods have been used to obtain information about the level of consumption of gasoline and diesel fuel that would be expected in Austria without this added factor. The results show that since 1998 the sales figures for diesel in particular have displayed deviations from actual (estimated) domestic consumption and are increasing by the year. Nearly 30% of tabulated traffic emissions in 2003 are accounted for by fuel tourism.

- **Fuel tourism creates distortions of competition on the haulage market**

In theory, since any driver is free to choose where to tank in the European Union, irrespective from his country of origin, there should not be any distortions of competition. The large fuel capacity of modern trucks allows hauliers to benefit from this freedom of choice. Yet, because of geographical and business constraints, not all hauliers can tank in the cheapest markets. Since operators competing on the same markets may not all enjoy the same possibilities of purchasing low-tax fuel, fuel tourism may create distortions of competition between different categories of hauliers. Some illustrative examples are provided below, which indicate that potential distortions can be significant.

**A first case of distortions** can appear depending on the tank size of the fleet of the operators. If we take the example of two firms registered in the same country and using the same route, the haulage company that is able to optimise reduction in its fuel costs will be the one using trucks having the largest tank capacity, since it will maximise the quantity of fuel tanked in low excise duties countries. As an example, a simple calculation made for two types of truck, one with a 800 litres tank and another with 200 litres tank, driving the same route from Amsterdam (NL) to Marseille (FR) and back (2.500 km) indicates that the small tank capacity truck has an increased fuel cost of 7.6% on the given route due to the fact that it can only benefit from the lowest excise duty for roughly half the distance.

**A second type of distortion** can arise when hauliers involved in international activities can reduce their running costs on national markets with low excise duty rates. Consequently, they can benefit from an advantage when they operate on national markets with high excise duties compared to companies active at national and regional levels only, which do not enjoy the possibility of purchasing cheaper diesel fuel. The following calculation illustrates this type of distortion for two companies operating on the route from Berlin (DE) to Frankfurt (DE) but where one continues to deliver goods to France via Luxembourg and therefore gains an advantage. The company operating on the national route only will have up to 25% higher fuel cost for the same journey of 1100 km. This represents a difference around 5% of total operating costs<sup>10</sup>, which is significant.

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<sup>9</sup> This phenomenon is not new and has increased in recent years. A Dutch study mentioned in 1994 that the average fuel consumption for cars per habitant in Luxembourg was three times higher than in France or Germany. It concluded that approximately two thirds of motor car fuel sold in Luxembourg was consumed by foreigners doing fuel tourism (A.N. Bleijenberg, OECD, 1994).

<sup>10</sup> Fuel costs including excise duties represent around 21% of operating costs of German trucks for long distance transport. Source: COMPETE study, European Commission, 2006.

**A third type of distortion** can occur between hauliers operating exclusively on a national market, depending on whether they can tank in neighbouring countries with a low tax rate. A German operator active at regional level and located near the French border will not have as easy access to cheap fuel compared to an operator located near the Czech border. On a 1000 km route the difference in fuel cost for German companies located close to a neighbouring country with lower excise duty compared to a German company with no possibility to tank in a neighbouring country is illustrated in the table below, which shows the percentage gain of total fuel cost excluding VAT, depending on the country to which they have access.

**Table 3**

<b>Differences in fuel costs for German companies on a 1000 km route with respect to:</b>							
<b>LU</b>	-20%	<b>AT</b>	-15%	<b>CZ</b>	-14%	<b>DK</b>	-7%
<b>PL</b>	-17%	<b>BE</b>	-15%	<b>NL</b>	-11%	<b>FR</b>	-6%

Finally, **a fourth type of distortion** of competition can appear between road hauliers originating in different Member States and operating on the same international routes, depending on the vicinity of their country of origin to low taxing countries. This is for example the case between British companies in comparison to Belgian companies located next to the Luxemburg border, as the latter have the possibility to refuel more frequently at lower cost.

The notion of distortion only applies to companies competing on the same market. In order to evaluate the significance of potential distortions between operators from different Member States, it is therefore important to measure to which extent they do actually compete in Europe (transport to and from third countries account only for 7,2 % of the total traffic of EU hauliers in terms of tonnes kilometres).

27% of road freight transport in Europe is international transport<sup>11</sup> and 0.9% is cabotage by foreign hauliers. International transport flows are growing faster than national transport flows: between 2000 and 2004, international flows measured in tkm have increased by 23%, against 9% for national transport. This tendency has accelerated in the recent past: + 11,8% for international transport between 2003 and 2004 versus + 4,8% for national transport. Such growth is consistent with the general thesis that transport facilitates increases in trade and economic growth and is faster in the liberalised international market than in mature national transport markets. The 2006 road transport report estimates that on average, 50% of the intra EU import and export market in each country is served by domestic hauliers. Very little cabotage takes place on average. Yet, it is increasing rapidly and now takes a bigger share on some of the big national markets: 1.2% of the national market in t/km in the United Kingdom, more than 1.6% of the national market in t/km in Germany, almost 2.6% in France and 3% in Belgium. It is an important part of some Member States' business: for hauliers from Luxemburg, it represents almost 25% of their total transport business.

The table below shows the share of the nationality of hauliers undertaking international transport<sup>12</sup> at Member State level in 2005. It shows that international transport is largely open to competition.

<sup>11</sup> International transport comprises bilateral transport (transport between two countries by a haulier established in one of the two countries), cross-trade (transport between two countries by a haulier established in a third country) and cabotage (transport within a country by a haulier established in another country).

<sup>12</sup> International road freight transport here refers to international transport loaded in the reporting country, international transport unloaded in the reporting country and cross-trade, but not cabotage.

**Table 4: Share of the nationality of the hauliers undertaking international transport in 2005**

	Goods leaving the country				Goods entering the country			
	Total (1000 tonnes)	Share in %			Total (1000 tonnes)	Share in %		
		National hauliers	Other EU15 hauliers	Other new MS hauliers		National hauliers	Other EU15 hauliers	Other new MS hauliers
BE	88.467	40%	57%	3%	78.182	32%	65%	2%
CZ	24.056	73%	12%	14%	19.893	71%	11%	18%
DK	14.026	58%	36%	5%	16.478	46%	46%	6%
DE	182.923	44%	44%	11%	161.107	36%	50%	14%
EE	2.334	76%	3%	20%	2.157	61%	8%	30%
GR	1.916	68%	24%	7%	2.328	61%	33%	5%
ES	48.559	58%	38%	3%	49.068	58%	39%	3%
FR	104.701	29%	67%	3%	113.465	25%	71%	3%
IE	6.881	56%	44%	1%	11.879	39%	60%	1%
IT	55.612	41%	48%	9%	55.333	37%	51%	11%
CY	9	78%	0%	0%	11	100%	0%	0%
LV	3.260	62%	11%	25%	3.080	56%	9%	34%
LT	4.454	74%	1%	23%	4.136	64%	8%	27%
LU	9.043	55%	43%	2%	11.276	52%	47%	1%
HU	10.957	52%	18%	28%	10.893	45%	22%	32%
MT	0	:	0%	0%	1	:	0%	0%
NL	89.892	68%	29%	3%	81.241	61%	36%	3%
AT	29.372	53%	33%	13%	34.591	46%	40%	13%
PL	25.583	83%	6%	9%	24.091	81%	9%	9%
PT	12.809	75%	24%	0%	15.327	68%	31%	1%
SI	6.068	80%	12%	7%	6.299	80%	13%	7%
SK	12.961	68%	7%	23%	10.300	64%	9%	27%
FI	4.173	72%	12%	13%	4.980	81%	8%	10%
SE	13.283	25%	51%	12%	12.552	17%	61%	11%
UK	27.655	46%	50%	4%	32.832	32%	62%	5%
NO	4.269	44%	49%	6%	6.273	32%	62%	6%

Source: Transport, Eurostat, December 2006

Competition within the internal market is therefore effective, even if the situation varies greatly from one Member State to another.

- **Fiscal distortions of competition have consequences in terms of market shares**

Because of the stiff competition on haulage market, the distortions of competition described above have consequences in terms of national market shares. A study on bilateral road transport<sup>13</sup> carried out by the French Transport Ministry established important changes in market shares on the European market<sup>14</sup> between 1997 and 2001, as illustrated in the table below:

**Table 5: Changes in market shares on the European market (1997-2001)**

Flags	LU	AT	IT	ES	PT	DE	BE	NL	FR	UK
UK	++	++	++	++	++	++	+	+	+	
FE	++	++	++	++	++	++	+	+		
NL	++	++	+	+	+	+	+			
BE	++	++	+	+	+	++				
DE	++	++	+	+	+					
PT	+	+	+	+						
ES	+	++	+							
IT	++	++								
AT	++									
LU										

*Source: Notes de synthèse du Service économique et statistique du Ministère des Transports*

**Key:**

++ increase of market share of more than 15 points between 1997 and 2001

+ increase of market share between 0 and 15 points between 1997 and 2001

It shows that operators from Luxemburg or Austria have increased their market share over most of their competitors whereas the United Kingdom registered a loss on all markets. According to the UK 2005 Burn's Freight Tax Enquiry 96% of the 800 UK-based operators and transport buyers who were interviewed, said that there was not a level cost playing field for UK operators competing against foreign registered vehicles. Transport buyers who responded now source double the amount of haulage work from foreign operators compared to 2000. In 2000 foreign haulage accounted for 12 per cent of total work purchased, it now (2005) accounts for 23 per cent.

The French Transport Ministry study further determined that two thirds of the variations observed between 1997 and 2001 can be attributed to three factors: tax differences on diesel, differences in corporate tax and the evolution of salaries between two given countries. Tax differences for diesel appeared to be the main factor, explaining some 40 % of market share variations observed alone: when a country decides to tax less, its operators increase their market share. Although it cannot be excluded that the impact of labour costs might be underestimated due to data homogeneity problems, this study provides a clear indication that excise duty differences significantly affect

<sup>13</sup> Bilateral road transport means haulage operations between two countries by an operator registered in one of those two countries. It constitutes the major part of international road transport.

<sup>14</sup> Ten countries were covered by the study: Austria, Belgium, Germany, Netherlands, Italy, France, Spain, Portugal, Luxemburg and the United Kingdom.

competition on the intra-EU international haulage market. A reduction in tax differences between Member States will therefore remove some of the existing distortions of competition and have an impact in terms of market shares.

The Centre for Economics and Business Research (CEBR)<sup>15</sup> confirmed the role taxation plays in evolution of market share. It calculated that if fuel prices in the United Kingdom had remained the same as "on the Continent", the loss of market share for UK hauliers would have been of 5 % instead of 20 % between 1990-1995 and 2001.

It should eventually be noted that differences in taxes create distortions of competition beyond the haulage market. They also affect fuel stations depending on their location across the EU, all the more so given that, unlike road hauliers, they are not mobile and thus cannot limit the impact of excise duty differences. The Hungarian Petroleum Association states that 8% of tanking is done abroad, due to differences in the levels of taxation. A German study<sup>16</sup> has, for example, demonstrated that tank stations and shops suffer when they are located in a high excise duty country but next to a border with a low excise duty country, with consequences in terms of sales and employment. While diesel sales have decreased on average by 5 % in Germany since 1999<sup>17</sup>, it has decreased six times more (29 %) in the border area (50 km from the border)<sup>18</sup>. In their response to the consultation, representatives of the petroleum industry confirmed that the existence of different tax levels for diesel between the Member States is one of the criteria by which their members choose to locate their filling stations and that this differences favour to a certain extent the filling stations located in Member States where excise duties are lower.

Finally, the competition between transporters and transport modes plays an increasing role in the competitiveness of the respective European ports. It can favour certain ports to the detriment of others. A German maritime association gave the example of two 40 t trucks driving respectively from Nurnberg to the port of Hamburg (607 km) and from Nurnberg to Antwerp (610 km). The truck travelling to Hamburg will have to pay €97 in excise duties in Germany whereas the other truck travelling to Antwerp will pay €67.81 in excise duties in Belgium. If the two trucks drive respectively 135000 km in a year, the difference in excise duties will amount to almost 6500 euros per truck per year.

- **Fuel tourism has negative environmental consequences, in case detours are made**

As rational operators, drivers will make use of the diesel price difference as much as they can and tank in the country where it is the cheapest, taking naturally into account the additional costs involved (road charges, fuel and time spent to benefit from the tax premium, risks encountered on the road such as congestion and car accidents...).

Cases where operators just use the opportunity to tank "*en route*", without making any detours mainly amount to shifting consumption (and thus air pollutant emissions) that would in any event have taken place from one Member State to another. On the contrary, when drivers make detours from their routes to take advantage of the differences in national excise duties, this has a net negative effects on the environment because the longer distance driven compared to what would occur if differences in duty rates did not exist. Apart from the additional costs involved, there is in any event nothing preventing them from doing so, since environmental costs are not incorporated

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<sup>15</sup> CEBR, *Assessing the tax competitiveness of the road haulage industry*.

<sup>16</sup> Auswirkungen der grenzüberschreitenden Steuerarbitrage auf das Mineralölssteueraufkommen in Deutschland, eine finanzwissenschaftliche Bestandaufnahme 1999-2003, T. Lenk, F. C. Vogelbusch, Falken, FofES, Institut für Finanzen, Universität Leipzig, November 2004.

<sup>17</sup> Between January 1999 and September 2004, the diesel price in Germany has increased of 76 %.

<sup>18</sup> To be more precise by 37 % in the close vicinity of the border (10 km).

in market prices. In order to distinguish these two types of fuel tourism, the present document will refer to the concepts of "*en route fuel tourism*" as distinct from "*detour fuel tourism*".

A 1990 study concerning the Netherlands established that with a price difference of 0.14 to 0.16 ECU per litre compared to Belgium and Germany, 2.8 % of petrol sales take place across the border (Blok and Muizer). It estimated that 10 million extra kilometres, resulting from detour fuel tourism, were driven to refuel across the border leading to a loss of 615 jobs<sup>19</sup>.

In November 2004, a study carried out for the Austrian *Lebensministerium* estimated the fuel tourism, defined as the difference between the amount of fuel purchased and the amount of fuel consumed in Austria (which includes both en route and detour fuel tourism), amounted to 30 % of diesel sales.

In October 2001, an enquiry<sup>20</sup> among 16049 car drivers (excluding trucks) was made at 20 border-crossings between Belgium, France, Germany and South Luxembourg. It showed how high the proportion of travelling was in order to tank abroad: 16 % of all cross-border travelling was made for the purpose of refilling (at selected border-crossing points, up to 50 % of all journeys could account for it). Besides, 56% of the journeys were less than 50km and 58% less than 50 minutes. R. A. Reinstein estimated that in Luxemburg, the increase of nearly 60 % in transport sector emissions in the nineties was due to fuel tourism involving drivers from the four neighboring countries filling up there, without distinguishing the proportion that was caused by detour fuel tourism.

It is true that most of the above mentioned studies do not distinguish between private and haulier fuel tourism. However, it can be assumed that a lot of it is down to hauliers, who, because of their huge tank capacity, have an even greater incentive to carry out fuel tourism.

Michaelis (2004) showed that Germans are willing to drive 2 to 4 additional kilometres for each Euro cent price differential compared to a neighbouring country in case of diesel<sup>21</sup>. Given the existing 2003 price differentials between Germany and its neighbours, the result is an average additional journey distance of about 30 to 35 kilometres.

- - These results are very similar to the responses given by hauliers to the consultation. The Hungarian association stated for example that:
- - The majority of companies interviewed would drive a maximum of 20 extra km to benefit from fuel that was €50 cheaper pro 1000 litres,
- - If fuel was €100 cheaper per 1000 litres, 40% of the operators contacted claimed that they would consider a detour of between 20 and 50km,
- - Finally, if it was €150 cheaper, 40% of the companies interviewed would consider a detour of up to 100km.

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<sup>19</sup> Effects at the border of a petrol tax increase on 1 January 1990, P. M. Blok and A. P. Muizer, Nederlands Economisch Instituut, TK 1990-1991, 21.665 Nr 3, Rotterdam.

<sup>20</sup> Margue C., Molitor R. (2002), La mobilité des particuliers par route Luxembourg-France, Ministère des Transports, Luxemburg.

<sup>21</sup> This estimate assumes restricted rationality in the sense that only the need for additional fuel and time is included in the cost-benefit calculation of an individual, but not costs such as the wear out of the car or the expected costs of accidents. Considering perfect rationality implies lower distances per Euro cent of price difference (between 1,2 and 1,6 additional kilometer).

Responses from Denmark demonstrated an equal willingness to drive extra kilometres to save on fuel costs. Specifically, companies interviewed commented that they would consider a route change of more than 100km if fuel was €150 cheaper per 1000 litres.

- **Fuel tourism leads to losses in budgetary resources for those Member States applying a relatively high excise duty on diesel**

A key characteristic of fuel markets is a rather inelastic demand which makes fuel a particularly attractive source to generate tax revenue. Hence, fuel taxation, with revenue of €43,2 billion, is the main excise duty in Germany in 2003.

As a consequence of increasing European integration (Schengen agreement), cross-border purchases of fuel have become much easier over the last decade. Member States, which set high rates, may easily lose a large proportion of their excise receipts to the benefit of Member States applying lower taxation, because of fuel tourism.

Some Italian regions bordering Switzerland and Slovenia introduced price rebates at fuel stations to households living close to the borders. Banfi, Filippini and Hunt (2003) estimated that only this helped to stop the substantial revenue losses caused by fuel tourism<sup>22</sup>.

In 1994, A. Bleijenberg mentioned that the additional fuel tourism resources for Luxemburg were estimated to amount to 2 to 3% of GDP.

According to a study of the Research Centre analysing the fiscal effects from the international differences in taxation (FofES) at the institute for finances of the university of Leipzig, the decrease in financial income from taxation on diesel and gasoline due to fuel tourism resulted in Germany in 2005 in tax revenue losses of the German Treasury in the amount of €2.3 billion (in comparison with 1999).

In Germany, the Schmid Traffic Service GmbH estimated that the tax loss from excise duties on mineral oils in 2004 resulting from fuel tourism (i.e. professional diesel) was €1.915.000.000. The loss was attributed to the fuel tourism in the following neighbouring countries: Poland (28%), Czech Republic (27%), Austria (9%), Netherlands (8%), Denmark and Belgium (each of 5%), Luxembourg (4%), France (3%), and others (11%). The total loss is even higher and amounts to €3.6 billion each year, because of the reduced tax revenues from VAT and the reduced amounts of cigarettes sold at the tank stations.

- **Treaty base and subsidiarity principle**

A legislative proposal would be based on article 93 of the EC Treaty. It would not fall under the exclusive competence of the Community: article 93 of the Treaty lays down that the Council has to adopt provisions for the harmonisation of legislation concerning excise duties to the extent that such harmonisation is necessary to ensure the establishment and the functioning of the internal market. The subsidiarity principle therefore applies.

At first glance, no EU action would be detrimental for the following reasons.

Although the existence of EU minimum rates limits the divergences in national excise duty rates on diesel fuel and the risk of tax competition leading to sub-optimal levels of taxes, it has not been sufficient to prevent the persistence of significant divergences, despite the increasing trans-European dimension of the haulage sector.

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<sup>22</sup> After the introduction of these measures, fuel demand in the Swiss border regions decreased by 20 to 40 % while Italian regions realized important increases in sellings.

Tax policy interaction among Member States have not led to a reduction in divergences, since the current text of Article 7(2) of the Energy Tax Directive prevents them from doing so. This article gives Member States the possibility of creating a specific level of taxation for commercial diesel (decoupling), but on condition that the new level is not lower than the national level of taxation in force on 1 January 2003. This means that for the all countries taxing above the minimum in 2003 except the United Kingdom<sup>23</sup>, the only possibility at present to decouple is by *increasing* the rate applied to non-commercial traffic. Other things being equal, this cannot help reduce the current excessive differences between Member States in commercial diesel rates and will only increase the differences in non-commercial diesel rates, which might in turn increase fuel tourism made by private cars. **For the already high-taxing countries in 2003 there is in reality no room to manoeuvre in order to reduce the existing distortions.**

**Table 6: EU applied rates for diesel in April 2003**

Euros per 1000 l	BE	DK	DE	EL	ES	FR	IE	IT	LU	NL	AT	PT	FI	SE	UK
Diesel fuel	290	368	470	245	294	389	327	403	253	323	282	282	319	349	730

*\*Diesel fuel with low sulphur content (in principle, less than 50 ppm).*

The criticism sometimes made about tax harmonisation (i.e. that it deprives Member States of room to manoeuvre), does therefore not apply in this case, because in practice, any room to manoeuvre has, to a large extent, already disappeared.

Erratic fluctuations in prices for crude oil throw the differences between the taxes levied on diesel fuel in different Member States into even higher relief. The best reaction to high oil prices is not to lower taxes to compensate. This only encourages consumers to continue to consume. Distortionary fiscal and other policy interventions that prevent the necessary adjustment should be avoided. As past and present oil shocks have shown, unilateral measures by Member States lead to even more difficulties in all Member States. Tax competition between Member States erodes budgetary resources and prevents Member States wishing to implement an autonomous policy that would take into account environment or energy policies from doing so. It is a fact that national, sector-specific, tax relief creates distortions of competition affecting the whole EU. **The Commission and the Council of Ministers have repeatedly made clear that only common approaches would avoid fiscal disorder and distortions of competition.**

On the contrary, enhanced approximation of tax rates at EU level would address the issue of unfair competition and would reduce the negative impact that distortions of competition have. By its very nature, such action can only be carried out by the Union.

The present impact assessment will enable the validity of these assumptions to be checked and to assess which of the different options, if any, should lead to a proposal.

### SECTION 3: OBJECTIVES

- **The future policy should narrow the differences in fuel tax levels**

<sup>23</sup> Because of the flexibility offered by Article 7(4): the United Kingdom is the only Member States that can apply a rate below the national level of taxation in force on 1 January 2003 (but not below the minimum level) for gas oil used by motor vehicles intended exclusively for the carriage of goods by road, provided it introduces a system of road user charges for those vehicles, and as long as the overall tax burden remains broadly equivalent.



The White Paper on Transport *European transport policy for 2010: time to decide*,<sup>24</sup> noted that with the road transport sector now fully opened up to competition, the absence of harmonised fuel taxes seemed increasingly to be an obstacle to the smooth functioning of the internal market. It concluded on this issue by stressing the need to make the tax system more consistent by proposing uniform taxation for commercial road transport fuel to round off the internal market.

An initial proposal relating to the harmonization of the taxation on commercial diesel was presented in 2002<sup>25</sup>. This proposal was withdrawn in the context of the screening of legislative proposals pending before the Legislator undertaken at that time<sup>26</sup>. However, the Commission also announced its intention of reconsidering the need for a legislative solution in the light of the results of a comprehensive impact assessment.

In its recent Communication to the Council and the European Parliament (COM(2006) 314, 22.06.2006, *Keep Europe moving – Sustainable Mobility for our continent, Mid-term review of the European Commission's 2001 Transport White Paper*), the Commission noted that it "*will examine how excessive differences in fuel tax levels can be narrowed*".

- **The future policy should reduce distortions of competition**

Excessive differences in national tax systems create distortions of competition in the haulage sector. They prevent the advantages of a single market from being fully exploited. The future policy should help hauliers registered in different Member States to operate on a level-playing field in the internal market. The general objective of any specific arrangement concerning commercial diesel should therefore be to limit as much as possible the tax differences, which should not exceed €100 per 1000 litres at the end of the implementing period. This objective seems reasonable given the current tax differences between Member States<sup>27</sup>.

- **The future policy could reduce damages to environment**

European transport policy should aim at creating a level playing field for all means of transport as regards pricing, to cover as far as possible all the costs that each mode creates. This means in practice that all means of transport should bear the costs of the negative externalities they cause and the costs related to infrastructure building.

In its recent Communication mentioned above (Mid-term review of the European Commission's 2001 Transport White Paper), the Commission furthermore stressed that "*transport policy is closely intertwined with energy policy, on the basis of common objectives: lowering CO2 emissions and reducing EU import dependency on fossil fuels*"<sup>28</sup> and underlined that "*international environmental commitments, including those under the Kyoto Protocol, must be integrated into transport policy*".

The future proposal should aim at improving internalisation of externalities by treating fuel equally as regards their environmental effects. Moreover, the proposal should aim at reducing detour fuel tourism and therefore contribute to sustainability. Special arrangements for commercial diesel can play a significant role in the sustainable use of resources in the European

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<sup>24</sup> COM (2001)370, 12.09.2001.

<sup>25</sup> Proposal for a Council Directive: amending Directive 92/81/EEC and Directive 92/82/EEC to introduce special tax arrangements for diesel fuel used for commercial purposes and to align the excise duties on petrol and diesel fuel (COM (2002) 410 of 24.07.2002).

<sup>26</sup> COM(2005)462 of 27.09.2005.

<sup>27</sup> Without taking into account the countries benefiting from a transitional periods, the span of variation is around EUR 170 without the United Kingdom and EUR 390 with the United Kingdom.

<sup>28</sup> European Council, 23-24 March 2006.

Union by changing consumer behaviour and reducing the environmental damages that detours cause.

- **Contribution to the Community objectives of fostering growth, jobs and competitiveness and to sustainable development strategies**

Besides raising resources in the most efficient way, indirect taxation can contribute to the fulfilment of major policies objectives. As mentioned in the Commission's communication, *Tax policy in the European Union - Priorities for the years ahead*, it is the Commission's view that a high degree of harmonisation of indirect taxes is necessary, as provided for in Article 93 of the Treaty. This orientation is particularly justified in a field where on the one hand, indirect taxes may create an obstacle to the correct functioning of the Internal Market, and where on the other hand, taxation constitutes an efficient economic tool to reduce environmental problems.

#### **SECTION 4: POLICY OPTIONS**

In order to examine how excessive differences in commercial diesel tax levels can be narrowed, the Commission services propose to assess four basic approaches. For a more detailed presentation of all options (apart from A), please refer to annex 3.

**The first approach (option A)** consists of not intervening further at Community level (the no policy change option).

**The second option (option B)** consists of the introduction of a uniform excise rate on commercial diesel. After an adaptation period of 10 years, the single rate would be €400 in 2018<sup>29</sup>: From 1 January 2008 a fluctuation band will be set for commercial diesel at Community level, within which the actual rates applied by the Member States can fluctuate. The fluctuation band will be narrowed over time with a view to achieving harmonisation of excise duty rates for commercial diesel fuel by 2018.

The main aim is to differentiate in a coordinated manner the tax arrangements for fuel used for commercial purposes from those for fuels used for private purposes and to harmonise totally the rates for commercial diesel, in order to abolish distortions of competition existing between operators because of non-harmonised taxes.

Since the rate for commercial diesel will be harmonised and the fiscal distortions of competition between hauliers abolished, option B leaves Member States with greater freedom to define duty rates on non-commercial motor fuels at a level that enable them to achieve greater efficiency in their environment and energy policies. The option only foresees that at national level, the non-commercial diesel tax rate and the unleaded petrol tax rate would not be less than the rate applied to commercial diesel.

**The third option (option C)** consists of enhanced approximation of excise duties applicable to commercial diesel. A fluctuation band would be set at Community level, with a minimum and a maximum tax rate, in which Member States would have to set the level of taxation applicable to commercial diesel. The width of this fluctuation band should be progressively reduced to reach €100 by 2010. This option contains two sub-options from 2014 onwards: C1, where the minimum level of the band is indexed for inflation, and C2, where the minimum level of the band is set at the level of the minimum level of taxation set for unleaded petrol.

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<sup>29</sup> The differences of rates are so important that it would not have been realistic to proceed immediately to set a harmonised, single, Community excise duty.

The main aim is to reduce the tax-induced distortions of competition between hauliers. These options are based on the assumption that total harmonisation is neither justified from an economical point of view, nor necessary to reduce the distortions significantly, because of the transaction costs hauliers have to face when they carry out their fiscal planning. These scenarios only aim therefore to enhance approximation of excise duties applicable to commercial diesel.

As with option B, options C leave Member States with greater freedom to define duty rates for non-commercial motor fuels. The option only foresees that at national level, the non-commercial diesel tax rate and the unleaded petrol tax rate would not be less than the rate applied to commercial diesel.

**During the course of the impact assessment, the Commission decided to modify the options first examined.**

Concerning the rates to be implemented, the Commission services did not follow the suggestion made by some hauliers to approximate the rate at the lowest level possible. Such a change would:

- - contradict environmental considerations: lowering the rate would encourage consumption and therefore be against the fulfilment of Kyoto objectives.
- - not be justified from an environmental point of view, since there is no environmental reason to tax diesel fuel at a lower level than unleaded petrol.
- - have significant negative budgetary impacts which would have to be compensated by an increase in other taxes, and which might possibly create more economic distortions.

Nevertheless, a majority of hauliers stressed the fact that, given the existing pressure on the market, a solution had to be implemented sooner than 2014 (options C) or 2018 (option B)). However, it did not seem feasible, from a political point of view, to reach total harmonisation within a transition period of less than 10 years. Option B was therefore maintained as originally drafted. On the contrary, the date of implementation of indexation (option C1) and of equalization with unleaded petrol (C2) was brought forward to 2012.

In addition, further econometric simulations were carried out to study a C2+ option, which consisted of abolishing the upper limit of the band in C2, because:

- In theory, the economic arguments in favour of setting maximum excise duty rates are less strong than for minimum rates because tax competition acts only in one direction: it tends to reduce tax rates in all countries, possibly to a suboptimal level.
- In practice, only two Member States are currently concerned by the upper limit of the band in options C, i.e. Germany and the United Kingdom. Given the importance of competitive pressure on the market and the incidence tax variations have in terms of market shares, it is very unlikely that other Member States will increase their commercial rate to the levels of the upper limit, as past experience has shown. The tendency in the United Kingdom and in Germany has indeed been to try to find means in order to equalize fiscal pressure on national and foreign hauliers, as the proposals for the Lorry Road User Charging (LRUC) in the United Kingdom and the *Maut* in Germany have shown. The usefulness of the upper band was therefore open to question.
- In the United Kingdom, the current rate is so high that this country would suffer significant budgetary losses if it were to enter the band.

- The British and German markets are so big that the reduction in their rates would outweigh the positive environmental effects that the increase in the rates would have in other Member States.

**Option C2 plus** therefore consists of increasing the minimum level for diesel to €359 but already in 2012, and subsequently to €380 in 2014, in order to avoid a rapid erosion of the tax rate in real terms<sup>30</sup>. Member States will have no upper band limit to respect, in the light of the above remarks.

This option is based on the assumption that a progressive increase in the minimum rate for commercial diesel will be sufficient to reduce to a great extent both distortions of competition on the haulage market and fuel tourism detours.

It therefore assumes that market forces are strong enough on the haulage market to encourage Member States to remain de-facto within a fluctuation band. Each Member State wishing to tax at a rate higher than the minimum level will be free to do so by finding a balance the rage between the sustainability of its haulage industry, a better internalisation of environmental externalities and the need for budgetary resources.

**Table 7: Summary of the different options under scrutiny**

	<b>Option A</b>	<b>Option B</b>	<b>Option C1</b>	<b>Option C2</b>	<b>Option C2 plus</b>
<b>Objective achieved in</b>	-	2018	2012	2012	2012 and 2014
<b>Minimum level of taxation in euros per 1000 l</b>	Minimum level of 302 until 2009 and 330 from 2010 onwards	Harmonised rate of 400	302 and, from 2010 onwards, 330, indexed on inflation from 2012 onwards	302 until 2009, 330 from 2010 to 2011 and 359, the same as unleaded petrol, from 2012 onwards	302 until 2009, 330 from 2010, 359, the same as unleaded petrol, from 2012 and 380 from 2014
<b>Fluctuation band</b>	No	No	Yes	Yes	No

From a more technical point of view, it is foreseen, for options B, C1, C2 and C2+ that:

- transition periods granted in Directives 2003/96/EC, 2004/74/EC and 2004/75/EC would be maintained;
- the non-commercial diesel tax rate would not be less than the rate applied to commercial diesel at national level;

<sup>30</sup> The same reasoning conducted to define minimum levels on 1 January 2004 and 1 January 2010. Yet, regarding the preoccupation of hauliers and tank stations not to increase the fiscal burden in a period of already high oil prices, the Commission decided not to propose an automatic indexation of the rate for inflation. Besides, since all fuel should be treated equally, it considered that this question of principle will be better tackled in the context of the mid-term review of the Energy Tax Directive.

- the unleaded petrol tax rate would not be less than the rate applied to commercial diesel at national level;
- in cases where the excise duty on commercial diesel differs from the duty on non-commercial diesel, the price indicated at petrol stations for commercial and non-commercial diesel would remain identical. Road transport operators would be refunded the difference in taxation via a refund mechanism applied at Member State level.

In addition, in order to be consistent with other Community policies, options C1, C2 and C2+ provide that Member States, which introduce or apply a system of road user charges for motor vehicles using commercial diesel, may apply a rate to gas oil used by such vehicles lower than that applied 1 January 2003, as long as the overall tax burden remains broadly equivalent, and provided that the Community minimum level applicable to commercial gas oil is observed. This provision should facilitate the differentiation of the rates for commercial and non-commercial diesel for the Member States wishing to decouple<sup>31</sup> and contribute to reducing tax differentials.

## SECTION 5: ANALYSIS OF IMPACTS

The following section sums up the impacts of the different scenarios. It is based to a large extent on the quantitative results obtained for 19 EU countries with the Tremove models and for 25 EU countries with the Poles and Transtools models. Only the latter takes into account the effects related to fuel tourism, including the shift in transport demand and in excise duty revenues between countries and the related impacts on emissions.

### 5.1. The economical impacts

Several aspects have to be examined: impact on prices, on transport demand and fuel consumption, on industries (distortions of competition, administrative costs...) and the budgetary impacts.

#### 5.1.1. The impact on prices

- **Direct effects of the different options on commercial diesel taxation**

All things being equal, **option A** will cause no additional increase in excise tax in comparison to what has already been decided. From 2013 (end of transitional periods), all the Member States will have to respect the minimum levels indicated in the ETD. Unless Member States decide to improve coordinating the levels of their excise duty rates, the tax differences will remain unchanged. This option would therefore as such have no incidence on prices.

All things being equal, **option B** will guarantee a fixed excise duty of 400 euros per 1000 litres from 2018 onwards. In the meantime, 22 countries will have to increase their rates, while 5 will have to decrease them.

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<sup>31</sup> It has to be noted that uncoupling simply aims at retrieving the historical situation, when taxes on mineral oils were first introduced at Community level. At the end of the eighties, commercial road transport accounted for most diesel fuel consumed. Since non-commercial use of diesel was marginal on the market, the Member States had de facto created a *commercial fuel category*, when they fixed a minimum level of taxation for diesel in 1992, in order not to jeopardise the economic and financial balance of the road transport sector nor of the industries and services making intensive use of road transport.

All things being equal, for the period 2008-2011, **options C1 and C2** imply, in addition to the effects observed with option A, that two countries (Germany and the United Kingdom) will have to reduce their rates. From 2012, options C will result in an increase of excise tax in Member States respecting the minimum level fixed in the ETD.

In **option C2**, this increase will happen once in 2012 for the countries taxing commercial diesel at that time between €330 and €359 (and in 2014 for certain Member States benefiting from transition periods). If Member States do not modify their taxation policy in the meantime<sup>32</sup>, 18 countries would be concerned from 2014, which is less than in option B, where 22 countries have to increase their current taxation in order to reach a higher level (€400).

In **option C1**, all countries taxing at the minimum level will have to increase from 2012: it amounts to 18 Member States by 2014 if all those currently not respecting the minimum level decide to remain at the bottom of the fluctuation band, as well as those currently taxing at the minimum level. Each year, all Member States choosing to tax commercial diesel at minimum level will have to increase their rates according to inflation. 21 Member States will be concerned by 2018.

All things being equal, **option C2+** will increase the commercial diesel tax rate in two steps: 8 countries will have to increase to reach €359 in 2012, and 21 countries will have to increase their rate to reach €380 in 2014. In total, 21 Member States will have increased their rate by 2018 in comparison to the no change option.

- **Potential effects of the different options on the taxation of non-commercial diesel**

**Apart from option A, all other options will imply an increase in non-commercial diesel duties in all Member States whenever such increases are due to take place.** This results from the new obligation to tax non-commercial diesel at least as much as commercial diesel.

Besides this direct effect, since options B and C (e.g. C1, C2 and C2+) maintain the possibility to decouple commercial and non-commercial diesel taxation, they could have side effects on fuel prices, were Member States to decide to increase their rates for non-commercial diesel, in order to compensate for the advantage they give on the commercial diesel side. It is very difficult for the Commission to predict what each Member State would decide under such circumstances, since it depends on many factors.

However, very few Member States have chosen to decouple in the past, although this possibility already exists in the Energy Tax Directive. It is therefore reasonable to assume that only those Member States that cannot currently decouple below their rate (because of the obligation to respect the level of taxation applicable on 1 January 2003) may choose to do so in the future. Yet, since **options C1, C2 and C2+** require that a decrease in commercial diesel below the 1 January 2003 rate must be compensated by the introduction of road charges, there would be no incentive for these Member States to increase the duty on non-commercial diesel in parallel.

Such an incentive could exist under option B, but would be limited to the five Member States that will have to decrease their current excise duty in order to apply the harmonised rate of €400.

Yet, given the current high oil prices, it is unlikely that Member States will decide to increase fuel used by passenger cars. In any case, the tendency recently observed goes in the opposite direction:

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<sup>32</sup> If all the Member States currently not respecting the minimum level decide to remain at the bottom line of the fluctuation band once they reach it and the other Member States let their taxation level unchanged.

several Member States are trying to use fiscal instruments in order to diminish the impact of high crude oil prices for the general public, especially for low-income households.

It is therefore reasonable to assume that only the two Member States that might encounter the major budgetary losses (cf. *infra*), i.e. Germany and the United Kingdom, could increase their non-commercial diesel rate, in case they decide not to compensate the budgetary losses by other means. **Options B could therefore lead to an increase of the non-commercial duty rates in Germany and the United Kingdom.**

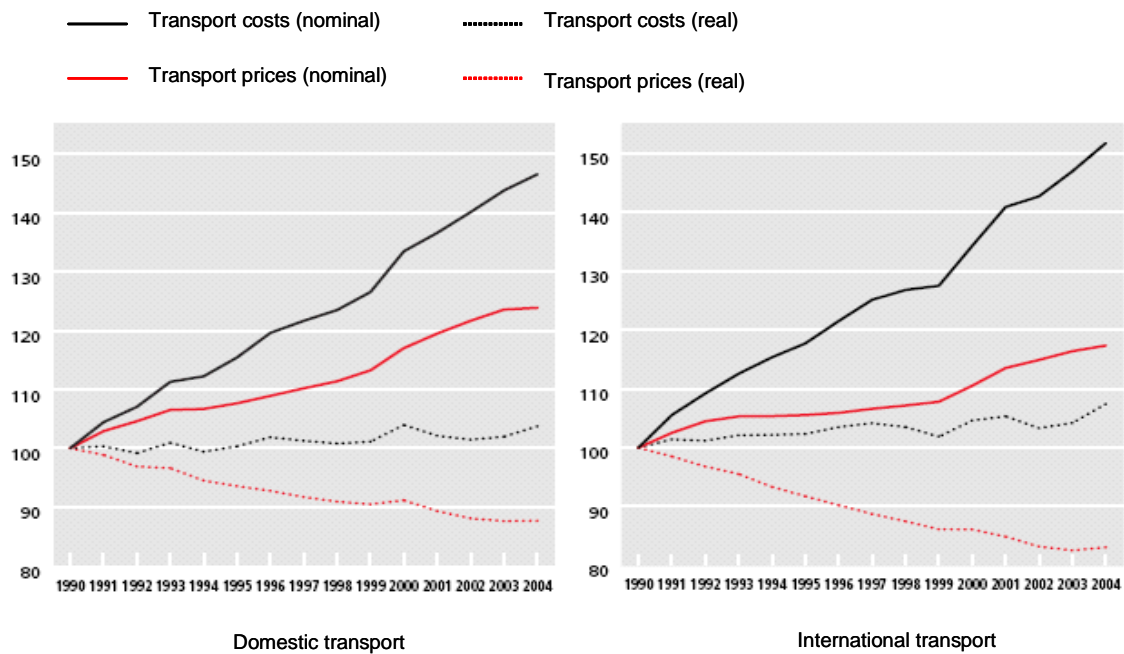
- **The impact of the different options on unleaded petrol taxation**

All options, except option A, require that unleaded petrol rate in a given Member State cannot be lower than the commercial diesel rate. This will imply an increase in unleaded petrol rate for the Member States which tax unleaded petrol at the minimum rate, when commercial diesel rate exceeds this minimum, that is to say from 2014 on in option B and C2+ and 2016 on in option C1 (option C2 being neutral). These expected increases will concern 9 Member States in options B, C1 and C2+. For the other Member States, since the unleaded petrol rates are already much higher than the diesel rates, there is no reason for those rates to be further increased, especially in a period of high crude oil prices.

To conclude on fuel prices, it is important to bear in mind that variations in fuel costs are not necessarily passed on to customers. For example, although crude oil prices rose steeply in 1999-2000 (+182% in USD/barrel in nominal terms), the final increase in diesel prices ranged only from 43% (Greece) to 13.6% (Portugal) in the EU 15. In this period, the variation in price of crude oil in EU 15 was responsible for 25-60% of the increase in diesel price. Variations in excise duties, be it increases or decreases, will thus not necessarily be reflected in the consumers prices, bearing in mind the components that enter into the price of transport fuels (the price of crude oil, production costs (refinery), distribution costs (transportation and insurance), taxes, margins for the oil companies). It is therefore very difficult to determine on the basis of excise duties, how fuel prices will evolve in the Member States.

- **The impact on road transport prices**

Ecorys (2006) highlighted that the haulage sector prices have not fully reflected the recent increase in costs. For Dutch hauliers, the increase in transport costs in the period 1990-2004 is just below 50%, whereas prices have increased by around 25% in the same period in domestic transport. In international transport, the developments of transport costs and prices have diverged even more over the period.



Source: *Transport in Cijfers, TLN*

When the market is competitive, cost increases should in principle be passed on since companies which do not have large profits arising from market power cannot afford to absorb them. It may happen, however, that cost increases are not entirely passed on in competitive markets due to particular circumstances – in this case because the market does not function perfectly due to asymmetry of power between road hauliers and their customers and because of the on-going adjustment of the sector to market integration. This led to low profitability in the sector. Since 1998, the profitability of both domestic and international road freight transport has decreased continuously, to below zero for Dutch hauliers, partly due to this factor. Margins for UK hauliers have reduced in the last five years. 19% of haulage companies in the UK are in loss, with 10% for a second year.

Thus, for the countries where the scenarios would lead to an increase in commercial excise duties, **competitive pressure in the market would keep road price increases moderate in the short and medium run.**

#### 5.1.2. The impact on fuel consumption and transport demand

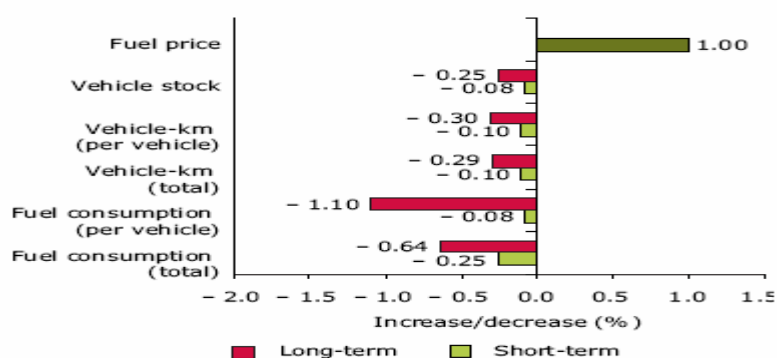
- **The impact on fossil fuels**

The European Environmental Agency (EEA 2006) estimated the following figures concerning elasticity of transport demand (including both passenger cars and freight transport) with respect to fuel prices<sup>33</sup>.

<sup>33</sup> Source: Goodwin et al., 2004, elasticities of road traffic and fuel consumption with respect to price and income, a review.



**Figure 4 Elasticity of transport demand with respect to fuel price**



**Note:** Economic elasticity is the proportional change in one variable relative to the proportional change in another. For instance, a 1 % increase in fuel price leads to a 0.1 % short-term decrease in vehicle-km. The long-term decrease is higher, namely 0.3 % per vehicle or 0.29 % in total. With a constant or declining occupancy rate, the transport volume in terms of passenger-km decreases at the same rate or faster, respectively. This means that the transport volume from 1990 to 2002, as depicted in the figure above (with the development of fuel prices), would have grown even faster if the fuel prices had stayed at a constant level.

In the short term fuel prices changes will only result in relative minor changes in mobility that in turn lead to only minor changes in the fuel consumption. In the longer term, however, fuel price elasticity increases due to decision to buy more fuel efficient cars resulting in decreasing demand for fuel without loss of mobility.

Goodwin et al. (2004) found that goods traffic is less sensitive to price while private cars are more sensitive. Several respondents to the consultation stressed the fact that the road transport industry is dependent for the foreseeable future on diesel fuel. Increases in fuel duty would therefore not reduce their consumption of diesel but simply force the industry to absorb the costs that they would be unable to pass on to their clients.

The lower price elasticity of freight transport demand is confirmed by the Poles model. In all options under scrutiny, the variation in commercial fuel consumption is less important than the variation observed for passenger cars using this type of fuel.

**Table 8: Fuel consumption in EU 25 in 2020 and over the period 2007-2030**

EU 25	Option A in ktoe	Difference B/A	Difference C1/A	Difference C2/A	Difference C2+/A
<b>FREIGHT</b>					
Diesel consumption in 2020	115 493	+0.76%	+0.49%	+0.55%	-0.58%
Diesel consumption, total 2007-2030	2 748 439	+0.50%	+0.30%	+0.36%	-0.34%
<b>PASSENGERS CARS</b>					
Diesel consumption in 2020	44 191	+4.38%	+3.18%	+2.77%	-0.58%
Diesel consumption, total 2007-2030	1 031 176	+3.04%	+2.13%	+1.86%	-0.43%
Gasoline consumption in 2020	122 117	-1.81%	-1.34%	-0.92%	-0.03%
Gasoline consumption, total 2007-2030	2 929 727	-1.32%	-0.94%	-0.66%	-0.02%

*Source: Poles model*

All options lead to a decrease in gasoline consumption. The most important decrease is obtained by option B, total harmonisation. Option C2+ is quite neutral in terms of gasoline consumption.

Concerning diesel consumption, option C2+ is the only one to decrease in the amount, be it for the freight or for passenger cars using gas oil. The other options have a non-negligible positive effect on diesel consumption by passenger cars, option B contributing to an increase of 4.4% in 2020. Those three options (B, C1 and C2) lead to small increases in commercial diesel consumption because of the effects of the reduction in excise rates in big high-tax countries (UK, DE) are not fully compensated by the increase in excise rates in other countries.

- **The impact on bio fuels**

In the year 2006 almost all Member States supported the production of biodiesel by applying excise tax rebates or excise tax exemptions to pure biodiesel or its blends. The rebates currently vary between 30 and 47 Eurocent per litre of biodiesel.

The Energy Tax Directive limits the tax rebates to the amount normally applicable to the exempted product. The Environmental Guidelines limits the aid to the difference between production costs and the market price for fossil fuels, i.e. overcompensation of biofuels production costs is forbidden.

Because of these provisions, any increase in the minimum level of taxation for fossil diesel should not have any impact on the scope of the compensation for biofuels extra production costs. In the case if the compensation is granted by tax exemption the increase in taxation of fossil fuel should lead to a proportional increase of taxation for biodiesel. Only if the proposed harmonization sets a maximum cap on the excise duty (options B, C1 and C2) is the scope of the possible excise tax reductions for biofuels limited.

This limitation is unlikely to have any practical effects on the support level granted to biofuels. This is because the levels of current tax rebates are below the maximum excise tax levels proposed in most of the options. Only in option B and C2 the maximum tax level is lower than the highest rebates currently applicable. However, taking into account Community's policy on biofuels, biodiesel production capacities will increase potentially resulting in a decrease of production costs due to economies of scale. As any significant fall in the fossil fuel prices is rather unlikely it can be predicted that the difference between biofuels production costs and market price for fossil fuels may rather decrease in the future.

If despite these expectations the production costs for biodiesel would exceed the market price for fossil fuels by more than any of the proposed maximum caps, other instruments for encouraging biodiesel are available, like direct subsidies (subject to State aid approval) or supply obligations imposed on fuels suppliers.

**To conclude, taking the above into consideration the excise tax harmonization should have no real impact on the State aid measures for production of biofuels. However some Member States would have to adjust their support schemes accordingly and notify the changes to the Commission.**

The respondents were generally of the same opinion. Some haulage respondents linked a higher price for diesel with greater demand for biodiesel. However, as explained above the State aid to biodiesel is linked to the difference between its production costs and the after tax price of fossil diesel. Therefore an increase in the tax for fossil diesel will not favour biodiesel consumption. Representatives of the petroleum industry noted that the lower the excise, the lower the potential

tax incentive for biofuels in those Member States where biofuels are promoted by tax incentives. The evolution of diesel excise duty could therefore potentially have an impact on the consumption of bio diesel if the countries will not be willing for administrative reasons to switch from aid granted through excise tax exemptions to aid granted in form of direct grants.

These reactions were supplemented by comments from respondents who saw other issues as being of greater consequence for the use of biodiesel, such as price and availability, and therefore estimated that neither option would impact biodiesel consumption. In the UK biodiesel is limited to a 5% blend in diesel fuels. Blends above 5% would currently invalidate vehicle manufacturer guarantees. In France national law only permits the use of biodiesel in heavy agricultural vehicles. Solid growth in biofuels is dependent on the EU and the Member States setting a regulatory framework that would be causing less distortions of competition.

- **The impact on the transport demand**

**Table 9: Evolution of transport demand in EU 19 until 2020**

Impact in % in comparison to no policy change	Option B/A			Option C1/A			Option C2/A			Option C2+/A		
	2010	2015	2020	2010	2015	2020	2010	2015	2020	2010	2015	2020
Sum of tkm diesel	0,2	0,4	0,3	0,1	0,3	0,4	0,1	0,2	0,2	0,0	-0,1	-0,2
Sum of tkm gasoline	0,1	-0,5	-1,1	0,0	-0,1	-0,3	0	-0,3	-0,5	0,0	0,0	0,0
Sum of vkm diesel	0,1	0,5	0,6	0,1	0,2	0,2	0,1	0,3	0,4	0,0	-0,1	-0,3
Sum of vkm gasoline	0	-0,2	-0,5	0,0	-0,4	-0,6	0	-0,1	-0,3	0,0	-0,2	0,0

Source: Tremove model

Compared to the no policy change option (A), options B, C1 and C2 lead to modest increases in the freight transport demand, which is due to the increase that will occur on the British and German markets (because of the decrease of their commercial duty rate). Option C2+ is the only one that leads to a slight decrease, all things being equal (e.g. Germany and the United Kingdom leave their rates unchanged). All options but C2+ lead to a decrease in gasoline transport demand.

### 5.1.3 The impact on industry

- **The impact on distortions of competition**

The smaller the tax differences are between Member States, the smaller will be the distortions of competition.

From this point of view, the best option would by definition be option B, total harmonisation, where differences in tax are abolished by 2018. When they responded to this question, participants indeed identified option B (full harmonisation) as the best means of standardising conditions of competition between operators in different Member States.

In option C1 and C2, the fiscal distortions will be reduced but not abolished, since the width of the band will remain at €100. Hauliers therefore regarded options C as an interim or second best solution only.

However, if one assumes that, given the market pressure encountered by their national hauliers, the currently high-taxing Member States will try to decrease their commercial diesel rate below the level of taxation of 1 January 2003, the differences might in reality be far smaller than €100 for C1 and C2 (also for C2+, with the exception of the United Kingdom, given the level of its current rate).

In the United Kingdom is excluded because of its atypical high rate and if one assumes, for example, that Germany will introduce road charges and go down to the level of taxation of the current highest-taxing Member States (with a rate of around €415, e.g. Italy or France), the width of the band would be €40 in 2018 in options C1, €35 in C2+ and €55 in option C2. Options C1 and C2+ would therefore also reduce distortions to a significant extent.

These reductions of distortions in the haulage sector may also have consequences for tank stations, especially those located in a high-taxing Member State near a border with a low-taxing Member State since they are the ones that are most affected by the current state-of-play (option A). For countries with high rates of fuel duty the result of harmonisation or narrowing the differences in taxation between Member State levels would indeed result in division in diesel sales. For example, operators which customarily fuel outside a Member State with higher fuel duties before entering would begin to purchase fuel in that Member State to avoid the penalties of a lower payload and poorer cash flow from operating with a full fuel tank. There would therefore be shift in consumption between the Member States according to their respective diesel prices.

More generally, reducing distortions of competition can also be expected to have positive economic impacts for the EU as a whole to the extent that it would contribute to improved market functioning and a better allocation of resources. Finally, diesel fuel consumption and associated emissions can also be reduced to the extent that fuel tourism detours decrease – cf. infra section 5.2.

- **The impact on administrative and operating costs**

All options except the no policy change option are based on the use of a refund mechanism to be implemented for road transport operators in order to take advantage of the commercial rate. This has proved to be the only practicable way to differentiate easily between commercial and non-commercial fuel while preventing fraud and not discriminating against non-established traders<sup>34</sup>. It is difficult to assess the monetary implications of such a new system. A comparison with e.g. the VAT refund system is difficult to make as this system is entirely managed and financed by the Member States without involvement of the Commission. It should also be pointed out that the replacement of this system, which has proven to be burdensome, is currently discussed at the Council (Council Directive laying down detailed rules for the refund of value added tax, provided for in Directive 77/388/EEC, to taxable persons not established in the territory of the country but established in another Member State (COM (2004) 728 final). Its practical costs will mainly depend of the characteristics retained by the Member States.

There would be certain synergies to be gained from using the concept used for VAT refunds to be also used for a rebate for road transporters. From the perspective of the businesses, non-established taxable persons established in the EU could use a single application for claiming VAT deduction and duty rebates. From the perspective of the administrations, the Member State of identification could establish the bona fides of the person making the application. In

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<sup>34</sup> Another possibility would be to have two separate kinds of pumps at petrol stations. However, the Member State could never be sure that only hauliers would benefit from the favourable rate. An alternative solution could have been to sell diesel at a lower price at pump stations to hauliers showing a professional card. Besides the risk of fraud, one can never be sure that the implementation of such a system would not be discriminatory against non-established traders.

theory, non EU-established businesses could use a modified 13th Directive refund claim form for claiming the rebates.

The public consultation illustrated that administrative costs was a concern for haulage operators, but one which could be minimised through the use of modern IT and internet-based procedures for reimbursement. An overwhelming majority of hauliers support the establishment of a uniform EU refund mechanism which would provide an uncomplicated procedure without language barriers to users<sup>35</sup>. Several hauliers also put strong emphasis on the need for a rebate system which would be administered at Member State level but regulated through EU legislation. Representatives of the petroleum industry consider that the options outlined should have no impact on costs provided a potential refund system for commercial road transport companies is ran by Member States.

Given all these considerations, the Commission proposes that a set of common rules concerning the refund mechanism should be fixed at Community level.

Finally, operating costs (due to the adjustment of prices in response to changes in excise duties) exist but are expected to be negligible.

- **The impact on the car industry**

Fuel prices influence to a certain extent demand for cars since 1990, the share of passenger diesel cars in the total passenger car fleet has increased substantially in the EU-15. Its share in new registrations has increased from below 20% in 1990 to 48.9% in 2004. This increase in market share has taken place in all countries, although the size of the market differs a lot between countries in Europe. **This phenomenon can be explained by a number of reasons, among which is the fact that diesel prices were lower than petrol prices**<sup>36</sup>. Besides, when confronted with higher prices, the evidence shows that car travellers will generally (Ecorys 2006):

- adopt no behavioural change within a year,
- adjust the pattern of trips (change travel mode or purchase another type of car) within three years,
- adjust the pattern of their activities (change in leisure activities, moving to another house or another location for work) in the long-term (beyond three years).

According to these statements, the first effects on cars purchases of any of the proposed options would not be felt before 2015.

Yet, the same study highlights the following paradox: crude oil prices, expressed in real prices, have tended to increase significantly in the period 1995-2004. At the same time, the number of motor vehicles in use has increased steadily in all the EU-15 countries, including the high-taxing

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<sup>35</sup> Some hauliers spontaneously stressed that differentiating the price for commercial and non-commercial fuel at the point of purchase would remove any administrative burden for operators. It would, however, be strongly opposed by the petroleum industry.

<sup>36</sup> There are other ones, like the fact that the number of passenger kilometres made by private car is still growing (makes more interesting for the car owner to "switch" to diesel fuel cars) and the improvement of diesel technology.

ones<sup>37</sup>. Ecorys therefore noted that **purchasers of passenger cars have been somewhat insensitive to their fuel costs in recent years.**

In the consultation the representatives of the car industry feared that the proposed options could have a negative impact for the car industry:

- Option B since it would oblige many Member States to increase their excise duty rates which, in turn, would increase the cost of mobility and transport and thus undermine the competitiveness of European industry.
- Option B, C1 and C2 run the risk that the two countries which will have to reduce their rate, i.e. the UK and Germany, would want to make up for this decrease in revenue by raising other taxes including taxes on diesel fuel used by passenger cars.

The simulations made under Tremove show that all foreseen options remain quite neutral towards the vehicle stock (a maximum of 0.06% impact expected 12 years after the entry into force of C1). Option C2+ is the only one that will lead to a slight general decrease in the vehicle stock in comparison to the no policy change option. Such a shift implies adjustment costs for the car industry. However, the impact on the vehicle stock again appear to be very small.

**Table 10: Vehicle stock in EU 19 in 2020**

		<b>Option B/A</b>	<b>Option C1/A</b>	<b>Option C2/A</b>	<b>Option C2+/A</b>
Small car	Gasoline	-0,29%	-0.15%	-0,11%	0,03%
	Diesel	0,12%	0.01%	0,15%	-0,24%
Medium/big car	Gasoline	-0,51%	-0.31%	-0,30%	0,02%
	Diesel	0,63%	0.37%	0,38%	-0,19%
Moped	Gasoline	-0,06%	-0.03%	0,00%	-0,03%
Motorcycle	Gasoline	-0,06%	-0.04%	0,00%	-0,05%
Light duty vehicle	Gasoline	-0,52%	-0.12%	-0,22%	0,27%
	Diesel	0,29%	0.07%	0,30%	-0,49%
Heavy duty vehicle	Diesel	-0,03%	-0.09%	0,14%	-0,60%
<b>Grand Total</b>		<b>0,03%</b>	<b>0.01%</b>	<b>0,06%</b>	<b>-0,10%</b>

Source: Tremove model

#### 5.1.4. The impact on modal shift

Road transport accounts for 76% of overland goods distribution within the EU. The haulage industry emphasised in their responses to the consultation that road transport is the mode of choice because of its unparalleled flexibility, quality of service and efficiency. Changes proposed

<sup>37</sup> Between 1995 and 2002 the number of passenger cars in the EU-15 increased by 16% from 160 to almost 190 million passenger cars.

in the field of taxation will have a negligible impact, if any, on the modal share between road transport and other modes, according to them. The situation is, however, different for passenger transport, where inter-modal competition plays a more important role. German bus representatives for example stated in their responses that if diesel fuel prices do not go down, a modal shift to the benefit of aviation (which is not subject to fuel taxation and which has additional opportunities to bunker fuel bought at the cheapest rates) and railway would take place in the long term. From their point of view, none of the options under scrutiny will improve fair competition between transport modes.

The Ecoris study (2006) confirmed the fact that modal shift has been negligible in the changes observed in the past. Given the expected effect of high oil prices on transport costs in the various sectors, it could be expected that shippers would prefer the mode which is potentially least affected by such price hikes, that is to say the rail sector. As the share of the rail sector has been declining in rail movements, such a response, however, is generally not seen. The 2006 road transport report notes that at an aggregated EU level, modal shift has been negligible in recent years. The demand for freight transport does not seem to be influenced to a large extent by increases of oil prices.

For B, C1 and C2, the reduction of excise rates in high taxing countries will not be fully compensated by the increase in duty rates in low taxing countries, because of the size of their respective markets. If any shift does occur, it could rather take the form of a shift from rail to road under these options. This would not happen in C2+, because this option will not impose a reduction in the rates of high taxing countries – and, if any reduction did occur, it would have to be compensated by other charges. A positive impact on modal shift could therefore take place, but would remain small in any case, firstly because price changes in road transport prices are expected to remain moderate and secondly because the substitutability of road with other modes is not very high, due to the intrinsic advantages of road transport.

#### *5.1.5. The budgetary impact*

The table 11 below sets out estimates of the impacts at present value on government budgets of the tax rate changes in the different scenarios at present value. These estimates can be considered as upper limits. The actual impacts can be expected to be lower (be they positive or negative) since a reduction in excise duty differentials will lead to a reduction in the present demand shifts between countries, which will offset part of the adjustments in excise rates.

According to the Poles model simulation, B, C1 and C2 will have a negative budgetary impact for EU-25: they will respectively have a negative impact of around €72 billion, €48 billion and €54 billion for the years 2007-2030. The negative impact will be mainly concentrated on the United Kingdom and Germany.

By contrast, option C2+ will have a positive impact on budget of €35.6 billion. This positive effect should also be obtained, in case Germany and the United Kingdom reduce their commercial rate, since they would then have to put into place road charges, in order to maintain the fiscal burden constant.

**Table 11: Impact on budget of excise duty changes between 2007-2030 (billion €)**

Billion €, Net Present Value	<b>B</b>	<b>C1</b>	<b>C2</b>	<b>C2+</b>
Austria	1,8	1,4	0,9	1,6
Estonia, Latvia, Lithuania	4,2	3,5	0,4	3,4
Belgium and Luxemburg	3,3	2,4	1,7	2,9
Denmark	-0,1	0,0	0,0	0,0
Spain	11,3	8,2	6,3	10,6
Finland	1,8	1,2	0,9	1,4
France	-4,3	0,0	0,0	0,0
United Kingdom <sup>38</sup>	-81,1	-60,3	-64,3	0,0
Greece	5,1	3,9	1,2	4,5
Hungary	0,8	0,5	0,3	0,6
Ireland	0,4	0,1	0,0	0,2
Italy	-2,1	0,0	0,0	0,0
Netherlands	2,4	0,9	0,0	1,3
Poland	7,9	4,8	1,7	5,5
Portugal	1,5	1,0	0,7	1,3
Czech Republic	2,0	1,3	0,9	1,6
Germany <sup>7</sup>	-27,9	-17,9	-4,7	0,0
Slovakia	0,2	0,0	0,0	0,1
Slovenia, Cyprus, Malta	0,9	0,6	0,3	0,7
Sweden	0,2	0,0	0,0	0,0
<b>EU 25</b>	<b>-71,8</b>	<b>-48,3</b>	<b>-53,7</b>	<b>35,6</b>

Source: Poles model

The budgetary impacts would however not be complete if the impacts of fuel tourism reductions were not taken into account, as will be the case in the following section – cf. notably table 17.

<sup>38</sup> Assuming that petrol and non commercial diesel taxes are unchanged



## 5.2. The environmental impacts

### 5.2.1. The impact on internalisation of negative externalities

Three aspects deserve consideration when comparing diesel and gasoline performance: vehicle tail pipe emissions of air pollutants, CO<sub>2</sub> emissions and security of supply. The latter will not be developed in this section since it does not concern environment. Yet, while choosing among the preferred option from those under scrutiny, one should keep in mind that the European Union is heavily dependent upon energy and, to be more specific, has mainly to import diesel from Russia and to export gasoline to the United States. The more diesel demand increases to the detriment of gasoline, the more the EU becomes dependent as more diesel will be imported and more petrol exported. Option C2+ is the only one that will improve security of supply, because of the impacts already studied concerning fuel consumption, transport demand and vehicle stock.

- Air pollutants

The vehicle emissions standards for passenger and freight vehicles are set by EU emissions standards. "Euro" standards are harmonised across Europe. They rely on fuel quality standards as regulated in Directive 98/70 as amended, which assures that when travelling around the EU the vehicle owner never has to worry whether the fuel is suitable for his/her car. The standards have seen a continuous evolution (from Euro1/I to Euro 4/IV and, in the future, Euro 5/V) and allowable emissions have decreased over time. The emissions standards for gasoline and diesel vehicles differ, with higher emissions allowed for diesel vehicles, except for CO. Diesel therefore produces more emissions per km of other air pollutants than CO<sub>2</sub>, which has significant health impacts.

**Table 12: Emissions standards for gasoline and diesel vehicles**

<b>Euro 4 in g/km</b>	<b>Diesel</b>	<b>Petrol</b>
HC	0.3 <sup>39</sup>	0.10
NO <sub>x</sub>	0.25	0.08
PM	0.025	-
CO	0.5	1.00
<b>CO<sub>2</sub> emissions in g CO<sub>2</sub>/km</b>		
Average CO <sub>2</sub> emissions from new cars (M1) sold in 2004	155	169

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<sup>39</sup> It is the combined mass of hydrocarbons and oxides of nitrogen (HC+NO<sub>x</sub>) for diesel.

- **CO2 emissions**

**From the CO2 performance point of view, diesel engines are currently more efficient than gasoline engines.** However, the technological advantage of diesel engines is eroding and the gap in energy efficiency between diesel and gasoline engines is gradually reducing. Besides, such a comparison only covers “tailpipe” CO2 emissions and does not take adequately into account the CO2 generated by producing gasoline and diesel in refineries<sup>40</sup>. In order to judge the overall CO2 performance of diesel vs. gasoline vehicles, the impact of additional refinery processing needs to be taken into account.

Kavalov and Peteves (2004) estimated that **the energy efficiency per kilometre along the diesel fuel chain could be reduced in the future, while greenhouse gases (GHG) emissions per kilometre could increase.** Trying to respond to the market requirements (where world diesel consumption is growing faster than world petrol use), either the EU will increase its imports of diesel or EU refineries will further expand diesel fraction from oil refining, beyond its optimum balance with petrol yield, depending on the relative costs of both options. This will be associated with higher energy losses and GHG emissions at the refineries. Alternatively, the growth in energy losses and GHG emissions for diesel could come from the lower energy and GHG efficiency of foreign refineries, which will supply diesel to the EU, and from the additional transportation.

- **Conclusion:**

**The mix of these criteria shows that from an environmental point of view, there is no reason why diesel fuel should be taxed at a lower level than petrol.**

Since all options except option A eventually will lead to the minimum level of taxation of diesel no longer being less than the minimum level of taxation of unleaded petrol, they all contribute to a better internalisation of external costs.

In option B, the minimum taxation of diesel will be 11% higher than the current minimum taxation of unleaded petrol, but only in 2018. In option C2, the minimum level for diesel will equal the current minimum level for unleaded in 2012. The minimum level for diesel will be 5% higher than the current minimum for unleaded in 2014 (option C2+) and in 2018 (option C1. Yet in this option, the minimum rate will continue to increase because of the indexation).

### *5.2.2. The impact on gas and pollutants emissions*

- **Without taking account of detour fuel tourism**

The Tremove model shows that in 13 years time, options B, C1 and C2 will have a slightly negative effect on environment, in comparison to option A (less than 0.5 % negative impact), since pollutants and CO2 emissions will increase. Only option C2+ will have a small positive impact for environment. It is better than all other options for all criteria except for CO exhaust (option B better) and NOx exhaust (option C1 better).

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<sup>40</sup> To meet the progressively changing specifications and the growing demand for diesel make it necessary for refineries to invest in additional hydrotreatment and hydrocracking processes. These processes are energy intensive and therefore generate significant quantities of additional CO2.

**Table 13: Evolution of pollutants and CO2 emissions until 2020 in EU 19**

Impact in % in comparison to no policy change	Option B/A			Option C1/A			Option C2/A			Option C2+/A		
	2010	2015	2020	2010	2015	2020	2010	2015	2020	2010	2015	2020
Sum of CO exhaust	0	0	-0,2	0,0	0,1	0,1	0	0	-0,1	0,0	0,0	-0,1
Sum of CO2 well to tank	0,1	0,2	0,2	0,1	0,2	0,2	0	0,1	0,1	0,0	-0,1	-0,3
Sum of FC	0,1	0,2	0,2	0,0	0,1	0,1	0	0,1	0,1	0,0	0,0	-0,1
Sum of NOx exhaust	0,1	0,3	0,4	0,0	0,0	-0,1	0	0,2	0,2	0,0	0,0	0,0
Sum of PM exhaust	0	0,2	0,4	0,0	0,1	0,1	0	0,2	0,2	0,0	-0,1	-0,1
Sum of SO2 exhaust	0,1	0,2	0,2	0,0	0,1	0,1	0	0,1	0,1	0,0	-0,1	-0,1
Sum of VOC exhaust	0	0	0	0,0	0,2	0,2	0	0	0	0,0	0,0	-0,2

Source: Tremove model

As stated, these results need to be interpreted with caution. First of all, they do not take into account the net impact of en-route fuel tourism. Indeed, to the extent that tax avoidance reduces the effective tax burden on freight transport operators, i.e. reduces transport costs, it leads to an increase in demand for transport, in fuel consumption and in pollutant emissions which cannot be measured as such by Tremove but which exists all the same – cf. table 16 below. Secondly, these results underestimate the positive environmental impacts that any of the proposed options would have since they do not include the effects the different options could have on detour fuel tourism. Tremove is a juxtaposition of country models reacting to price variations. If for example German excise duties decrease, the model will for the time being only take into account the resulting increase in consumption in Germany. It thus neglects the positive effects that the narrowing of the differences in excise duties will bring.

- **Taking account of fuel tourism detours**

**Table 14: Detours and loss of tax revenues due to tax avoidance between 2007 and 2030**

Million litres 2007-2030	Option A	Option B	Option C1	Option C2	Option C2+
<b>Detours in million litres</b>					
Detour heavy duty vehicles	35 391	2 377	9 525	20 720	21 539
Detour passenger cars	7 056	468	1 889	3 913	4 504
<b>Total detours</b>	<b>42 447</b>	<b>2 845</b>	<b>11 414</b>	<b>24 633</b>	<b>26 043</b>
<b>Loss of tax income revenues because of detours in million €</b>					
Detour heavy duty vehicles	5 024	93	688	1 933	2 926
Detour passenger cars	1 114	20	147	371	715
<b>Loss of tax revenues due to tax avoidance</b>	<b>6 138</b>	<b>113</b>	<b>835</b>	<b>2 304</b>	<b>3 641</b>

Source: Transtools model

All options reduce detours by million of litres in comparison to the no policy change option (A). Option B, total harmonisation, reduces the detours the most (it cannot reduce them totally, because of the implementation period that runs until 2018). Option C1 is the second best. Options C2 and C2+ are less effective but all the same respectively reduce detours by 42% and 38%. Finally, the positive results of C2+ are most probably conservative underestimates, since it is very likely that even without an upper limit to be imposed upon their commercial diesel tax rate, the high taxing Member States will make use of the new possibilities to decouple in order to lower their rates and thereby reduce detours even further (Germany is alone responsible for almost 16000 millions litres through detours of heavy duty vehicles, which represents more than 62% of the 26000 million litres obtained as detours under C2+).

While a reduction in tax avoidance has positive impacts on government budgets, it has negative impacts on companies' profits or on consumers' surplus if the costs are passed on through transport prices rather than through consumer prices. However, in terms of net welfare impacts, one would have to take into account that a reduction in tax avoidance would in principle allow governments to reduce other taxes.

Again, all options reduce the total amount of tax revenue loss in comparison to option A. Option B obtains the best results and C1 is the second best. Options C2 and C2+ reduce tax avoidance by respectively 62% and 41% (which is probably a conservative estimate in the latter case – see above). The same tendencies can be observed with regard to total emission costs, as shown by the table below.

**Table 15: Detours and CO2 emissions between 2007 and 2030**

PC = passenger car HDV= heavy duty vehicle	Option A		Option B		Option C1		Option C2		Option C2+	
	PC	HDV	PC	HDV	PC	HDV	PC	HDV	PC	HDV
<b>Detour driving distance in million vkm</b>	1 764	2 123	117	143	472	571	978	1 243	1 126	1 292
<b>Additional CO2 emissions due to detours (thousand tons)</b>	265	1 991	18	134	71	536	147	1 165	169	1 212
<b>Corresponding costs (million €)<sup>41</sup></b>	12	88	1	6	3	24	6	51	7	53

41 With a price of 44 €/tCO<sub>2</sub>. The market price of CO<sub>2</sub> was 6.7€/ton on 15 December 2006. This market price however does not reflect the level needed to reach Kyoto targets, which corresponds to 20 €/ton Co<sub>2</sub> value. Yet, the current discussions about post 2012 targets clearly admit the need to implement much more stringent emission in the future. In terms of physical impacts, there are more and more scientific indications that the scale of impacts from climate change and also the likelihood of abrupt changes have been underestimated in previous studies. This is supporting the use of higher values than those applied so far. A "central" value is difficult to assign. The Commission therefore considered a 44 euros/t CO<sub>2</sub>, corresponding to an average of estimates provided with the FUND model, with a 1% and a 3% discounting rate and with or without equity weighting. This value remains lower than what is suggested in the Stern report, namely that, in the hypothesis of a business as usual emission trajectory, the current social cost of carbon, might be around \$85/t CO<sub>2</sub> (year 2000 prices). The same value was retained for the biofuels Costs Benefits Analysis.

<b>Total emission costs (million €)</b>	<b>99</b>	<b>7</b>	<b>27</b>	<b>58</b>	<b>61</b>
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Source: Transtools model

In order to have a global view of the impact of each option in monetary terms, Transtools assessed the amount of en route fuel tourism of heavy duty vehicles, which estimates what the hauliers in each country would avoid by using fuel from a cheaper country on their trip.

**Table 16: Fuel tourisms costs between 2007 and 2030**

<b>In million €</b>	<b>Option A</b>	<b>Option B</b>	<b>Option C1</b>	<b>Option C2</b>	<b>Option C2+</b>
<b>Loss of tax revenues due to detours</b>	6 138	113	835	2 304	3 641
<b>Loss of tax revenues due to en route fuel tourism of Heavy Duty Vehicles</b>	8 690	1 319	4 117	5 695	6 505
CO2 emissions	99	7	27	58	61
<b>Total costs 2007-2030</b>	<b>14 928</b>	<b>1 438</b>	<b>4 979</b>	<b>8 056</b>	<b>10 207</b>

Source: Transtools model

**Table 17: Summary of budgetary implications and costs reductions related to fuel tourism (2007-2030)**

<b>In billion €</b>	<b>Option B/A</b>	<b>Option C1/A</b>	<b>Option C2/A</b>	<b>Option C2+/A</b>
Total benefit from fuel tourism reduction	13,49	9,95	6,87	4,72
Impact on budget of taxation variations (table 11)	-71,8	-48,3	-53,7	35,6
<b>Total</b>	<b>-58,3</b>	<b>-38,3</b>	<b>-46,8</b>	<b>+40,3</b>

Source: Transtools and Poles models

According to Transtools simulations, option C2+ is by far the best option.

### 5.3. The social impacts

#### 5.3.1. The impact on working conditions in the haulage sector

The impact on working hours directly depends on the amount of the detours that will be avoided. Options B, C1, C2 and C2+ will therefore, by reducing detours in border regions or to certain destinations, reduce working hours.

#### 5.3.2. The impact on road congestion and car accidents

At the level of the EU, there should not be any meaningful reduction in congestion as a result of the options. Yet, a reduction in congestion might be achieved in some border regions or on specific roads that are heavily used as a result of fuel tourism.

In their responses to the consultation, representatives of the petroleum industry considered that options B and C might reduce congestion in filling stations located in countries with low excise

duty rates and also reduce, to a certain extent, greenhouse gas emissions and emissions of pollutants into the air, because of fewer route detours and less diesel consumption resulting from tax differences.

The potential for a reduction in car accidents is limited, in the sense that accidents are proportionate to the amount of km driven. A reduction in truck detours and reduced mileage to obtain cheaper fuel should result in a corresponding proportional decrease in accidents involving HGVs.

During the consultation, one national association also stressed that the existence of tax differences currently led to dangerous behaviour, particularly through the addition of supplementary tanks in violation of EU regulations, which increased the danger. By reducing the incentive to add such tanks, all options but option A should also contribute to a certain extent to better security in transport.

### 5.3.3. The impact on employment

At EU level, there should be no overall change in the numbers employed in road transport and tank stations. If any, the net impact would remain very small (positive in B, C1 and C2, because of the transport demand increase, and slightly negative in C2+) since:

- Its importance depends on the variation in the average excise duty, which will remain small in all options,
- Transport demand elasticity is very small.

Yet, there might be regional shifts in employment connected to a more equal distribution of the fuel tax burden across the EU. For the countries currently experiencing a reduction in employment (where taxes are high), options B and C would tend to level out the negative impact of tax differences and, above all, to secure existing jobs. For example, French hauliers stressed that removing fiscal distortions of competition on fuel would help the sector regain its characteristic role in job creation. The current impacts on employment of distortions of competition would thus be totally or partly corrected (to the extent that those distortions are corrected: option B should therefore have the bigger effect).

## SECTION 6: COMPARING THE OPTIONS

**Table 18: Comparing the impacts on prices and fuel consumption**

<b>Impact on:</b>	<b>Option A</b>	<b>Option B</b>	<b>Option C1</b>	<b>Option C2</b>	<b>Option C2+</b>
Increase in commercial diesel excise duty?	No change foreseen (NCF)	19 MS concerned in 2014 and 22 by 2018	18 MS concerned in 2014 and 21 MS by 2018	18 MS concerned in 2014 and 18 in 2018	21 MS concerned in 2014 and 21 in 2018
Apart from the new minimum level, is there an increase in non-commercial diesel excise duty?	-	Possibly in Germany and in the United Kingdom	NCF	NCF	NCF
Increase in unleaded petrol excise duty?	NCF	Yes from 2014	Yes from 2016	NCF	Yes from 2014
Increase in road transport prices?	NCF	Moderate in the short and medium run	Moderate in the short and medium run	Moderate in the short and medium run	Moderate in the short and medium run
Decrease in diesel freight consumption?	No (continuation of the current trend)	No	No	No	Yes
Decrease in diesel passenger consumption?	No (continuation of the current trend)	No	No	No	Yes
Decrease in gasoline consumption?	Yes (continuation of the current trend)	Yes	Yes	Yes	Neutral
Influence on bio fuels consumption?	NCF	No	No	No	No
Decrease in the transport demand?	No	No for diesel, yes for unleaded transport demand	No for diesel, yes for unleaded transport demand	No for diesel, yes for unleaded transport demand	Small decrease for diesel and neutral for unleaded

**Table 19: Comparing the other economic impacts**

<b>Impact on:</b>	<b>Option A</b>	<b>Option B</b>	<b>Option C1</b>	<b>Option C2</b>	<b>Option C2+</b>
Reduction in distortions of competition?	No	Yes, to the greatest extent	Yes, to a lesser extent than B	Yes, to the least extent	Yes, to a lesser extent than B
Increase in administrative costs?	NCF	Yes, to a bearable extent	Yes, to a bearable extent	Yes, to a bearable extent	Yes, to a bearable extent
Decrease in the stock of the vehicles?	No	Slight increase	Neutral	Slight increase	Yes, although very small
Impact on modal shift?	Maybe, to the detriment of road passenger transport	NCF	NCF	NCF	NCF
Impact on budget of excise duty changes in billion euros for 2007-2030	NCF	-71,8	-48,3	-53,7	35,6
Total <sup>42</sup> budgetary implications in billion euros for 2007-2030	NCF	-58.2	-38,3	-46,8	+40,3

The estimates for option C2+ particularly in terms of distortions of competition, detours and related pollutants emission, can be considered as upper limits, since they are based on the assumption that all countries that do not have to change their excise rate because of this option will remain at the level they currently apply, that is to say that the United Kingdom and Germany will remain high-taxing countries. In case either one of them or both decide to lower their rate, distortions of competition, detours and related pollutants emissions would be lower, whereas the environmental damages would not increase, since option C2+ foresees that the tax burden has to remain constant.

<sup>42</sup> Costs reduction related to fuel tourism included.



**Table 20: Comparing the environmental impacts**

<b>Impact on:</b>	<b>Option A</b>	<b>Option B</b>	<b>Option C1</b>	<b>Option C2</b>	<b>Option C2+</b>
Contribution to the internalisation of externalities	NCF	Yes, to the greatest extent	Yes	Yes, although less than in B, C1 and C2+	Yes
Reduction of the pollutants <sup>43</sup>	NCF	No	No	No	Yes
Detours between 2007-2030 in million litres	42 447	2 845	11 414	24 633	26 043
Loss of tax revenues due to tax avoidance in million euros between 2007-2030	6 138	113	835	2 304	3 641
Total emission costs due to detours in million euros between 2007-2030	99	7	27	58	61

**Table 21: Comparing the social impacts**

<b>Impact on:</b>	<b>Option A</b>	<b>Option B</b>	<b>Option C1</b>	<b>Option C2</b>	<b>Option C2+</b>
Reduction in working hours?	NCF	In proportion to detours avoided	In proportion to detours avoided	In proportion to detours avoided	In proportion to detours avoided
Reduction in road congestion and car accidents?	NCF	In proportion to detours avoided	In proportion to detours avoided	In proportion to detours avoided	In proportion to detours avoided
Impact on employment	NCF	Maybe a shift between regions	Maybe a shift between regions	Maybe a shift between regions	Maybe a shift between regions

**SECTION 7: MONITORING AND EVALUATION**

Monitoring of the special arrangements for commercial diesel will be carried at least once a year through the collection of information from Member States at the occasion meetings of the Excise committee. Evaluation of the implementation of this proposal will take place in 2018 the latest, when the main impacts of the changes foreseen will be felt.

<sup>43</sup> Without taking into account the reduction in detours.

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**Annex 1**  
**Methodological note on Diesel Directive simulations**

Although several Member States claim that fuel tourism is a widespread practice, few reliable sources exist with usable data concerning the extent of the problem. These mainly consist of the German data on sales at fuel stations near the borders compared to fuel stations in the interior, the UK estimates for the amount of tax income lost and various freight industry analyses highlighting specific cases of en-route fuel tourism or distortion of competition in the case of low fuel taxes in an operator's country of origin. Country level data signifying important differences in the per capita fuel consumption can be of use in a few cases, mainly as regards the apparently high level for Luxembourg.

Given the data limitations, the estimation of the current situation concerning fuel tourism had to be modelled in such a way that the behaviour of drivers and operators could be explained as a function of fuel price differences, while the results matched the scattered data available. The analysis distinguishes detour and en-route fuel tourism, as well as passenger and freight transport. The following methodology was applied in each case:

**1. Detour fuel tourism**

The first part of the analysis addressed the case of freight vehicle operators that exploit lower fuel prices in a neighbouring member state and choose to make otherwise unnecessary trips with filling up their tanks as the only motive. Such behaviour makes financial sense in the cases where price differences between the member state where they have their base and the neighbouring country are big enough to justify the (generalised) cost of the additional two-way trip. The distance between the base and the fuel station, as well as the fuel quantity purchased, also influence the financial benefit from such an operation and, subsequently, the number of operators aiming to exploit the price differences.

**Table 1: Major diesel price differences between neighbouring EU member states, 2005, €1000 l**

Country H	Country L	Fuel price difference (€1000 l)		Country H	Country L	Fuel price difference (€1000 l)
UK	IE	324.6		I	A	88.0
D	L	192.6		S	FIN	74.3
D	PL	166.9		FIN	EST	74.0
D	A	145.4		SK	PL	69.7
D	B	143.7		D	DK	66.5
F	L	139.0		PL	LT	58.3
D	CZ	134.2		D	F	53.5
F	ES	123.0		B	L	48.9
I	SL	110.4		SK	AT	48.2

D	NL	105.5		PT	ES	45.6
F	B	90.2		I	A	88.0

As a first step, the country pairs where the major diesel price differences were observed in data for year 2005 were identified (table 1). Using the Geographic Information System (GIS) module of TRANSTOOLS, the NUTS III zones within 50km from the borders of these country pairs was identified. For these zones, the average distance to the border,  $D_0$ , was considered to be equal to the distance of the zone's geographical centre to the border. Information on number of freight vehicles and annual fuel consumption was available from the POLES model at country level. Assuming that the freight fleet is proportional to GDP at province level, the number of freight vehicles for each of these NUTS III zones was estimated. For a reference tank size of 500 l, the break-even driving distance for which the general cost (i.e. including time) for a 2-way trip would be equal to the total benefit in terms of lower fuel price was estimated.

$$D^* = (P_H - P_L) Q / 2C$$

where  $D$  is the break-even distance (km)

$P_H$  and  $P_L$  the fuel price at the base and the neighbouring country respectively (€/l)

$Q$  the quantity purchased (l), assumed to be 80% of the tank capacity

$C$  the generalised travel cost (€/km)

The simple ratio  $D^*/D_0$  corresponds to the share of the freight vehicles of the NUTS III zone that are within the break-even distance from the border and would potentially benefit from fuel tourism. The share of those freight vehicles that actually make the trip in order to refuel would be given by a standard Weibul function normalised on the basis of per capita GDP:

$$S = (P_L/GDP_H)^a / (P_L/GDP_H + P_H/GDP_H)^a$$

Where  $S$  is the ratio of freight vehicles within the break-even distance that would actually drive to the neighbouring country in order to refuel

$GDP_H$  the per capita GDP in the base country (which has the higher fuel prices)

$a$  the parameter that defines how attractive the price difference is

The parameter  $a$  is in fact the main variable on which the model is calibrated at a later stage, when the other forms of fuel tourism are also simulated.

The total amount of fuel tourism for a specific NUTS III zone would be equal to:

$$T = S D^*/D_0 V F$$

Where  $T$  is the total quantity of fuel purchased in the neighbouring country (l)

$V$  the number of freight vehicles in each NUTS III zone (veh)

$F$  the average annual fuel consumption of freight vehicles in the member state the NUTS III zone belongs to (l/veh)

A similar methodology was followed for passenger cars. The main differences were the use of GDP as a normalisation factor to estimate the number of diesel passenger cars and the use of a different elasticity. The technical data for diesel passenger cars concerning tank size, fuel consumption and generalised costs were also taken from the POLES model.

## 2. En route fuel tourism

The simulation of the en-route fuel tourism was made using the transport network of the TRANSTOOLS model and its database of Origin-Destination matrices and traffic volumes. In this case, the analysis covered the case of intra-EU freight transport where fuel prices are different in either the origin or destination, or any member state along or near the connecting route.

For each EU member state, the main routes for intra-EU trade with each other member state were identified. The theoretical fuel consumption for each segment within a different member state was estimated and, combined with the fuel prices in each member state, the theoretical fuel cost was calculated.

$$K_{0ijr} = \Sigma(d_i c_i p_i + \dots + d_j c_j p_j)$$

For  $i$  the origin,  $j$  the destination and  $r$  the route

$K_{0ijr}$  is the total fuel cost for the O-D pair using route  $r$  (€)

$d_i$ ,  $d_j$ ,  $d_x$  are the distances driven in members states  $i$ ,  $j$  and  $x$  respectively (km)

$c_i$  is the average fuel consumption of freight vehicles in the origin  $i$  (l/km)

$p_i$ ,  $p_j$ ,  $p_x$  are the fuel prices in members states  $i$ ,  $j$  and  $x$  respectively (€/l)

The weighted average of the cost for all routes connecting  $i$  and  $j$ ,  $K_{0ij}$  was estimated based on the transport volume included in the network model database.

The second step of the simulation assumed that operators would maximise the use of cheaper fuel where possible, optimising their refuelling strategy. This would mean that they would use the cheapest fuel available within the driving range that 80% of their tank would allow them. For example, if a truck leaves Luxemburg for the UK and back, it would fill up the tank in Luxemburg and try to complete the 2-way trip with one tank. If that were not enough, it would try to refuel just before leaving France, or just when re-entering France on the way back. If the trip were from the UK to Luxemburg and back, a different strategy would be optimum: to leave the UK with an almost empty tank, refuel in France just enough to reach Luxemburg, and fill up the tank completely in Luxemburg.

The absolute minimum cost would correspond to using a full tank from the cheapest member state, then a full tank from the second cheapest, minimising the quantity refuelled in the most expensive member state:

$$K_{min\ ijr} = T_i p_i + \dots + T_j p_j$$

The distance driven with fuel from each country would be:

$$S = T / c_i$$

The weighted average for the minimum cost was calculated used the same weight factors as in the case of theoretical cost. The total amount of fuel tourism would be equal to:

$$X_{ij} = w (K_{0ij} - K_{min\ ij}) N_{ij}$$

Where  $X_{ij}$  is the amount of taxes avoided (€)

$w$  a calibration parameter corresponding to the share of potential fuel tourism that actually takes place

$N_{ij}$  the number of annual trips between the member states  $i$  and  $j$

### 3. Calibration and scenario comparison

The above methodology allows the estimation of fuel quantities and avoided taxes for passenger and freight detour, and freight en-route fuel tourism. The fourth combination, passenger en-route fuel tourism was considered as marginal and was not simulated.

The calibration of the equations required the definition of the parameters  $a$  for passenger and freight detour, and of parameter  $w$  for en-route. This was done through a standard optimisation process, where different values for the three parameters were selected and the resulting level of fuel tourism (the sum of the three types analysed) was compared to the available data. Since most of the information available concerning fuel tourism comes from Germany and the UK, the behavioural parameters may not be representative of the whole EU. Special emphasis has been given however in differentiating as much as possible by taking into account country specific normalisation factors as in the case of per capita GDP. And whichever inconsistency is probably balanced by the very high share of fuel tourism present in these two member states for which more data was available.

The estimation of the impacts in each of the alternative scenarios that were simulated was done through the application of the same formulas for the new fuel tax levels foreseen in each scenario and the resulting fuel prices in each member state. There is a limitation in the methodology as far as en-route fuel tourism is concerned, in the sense that the current tools only allow for the weight factors used to be static, and not dynamic as a more accurate simulation would require. But assuming that the mix of routes for each intra-EU trade flow would be the same in each alternative tax level scenario is probably adequate for this level of analysis.

**Annex 2**  
**Consultation paper**  
**on narrowing excessive differences in the tax levels**  
**applicable to commercial diesel**

**Note**

**This paper is intended for consultation of all parties interested in a review of levels of taxation applicable to commercial diesel.**

**The sole purpose of consulting the public on this issue is to enable them to provide input into the discussion, gather relevant feedback and assist the Commission departments in developing their thinking on the subject.**

**This document does not necessarily reflect the views of the Commission of the European Communities, nor does it signify that the Commission is committed to any official initiative in this area.**

Comments are invited by **30 September 2006**.

Submissions may be made in writing or by e-mail, in English, French or German to the attention of Mrs. Gaëlle Michelier.

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(1) **Definition**

**The Energy Tax Directive defines** commercial diesel as gas oil used as a fuel for the following commercial purposes<sup>44</sup>: (a) the carriage of goods by motor vehicles intended exclusively for the carriage of goods by road and with a maximum permissible gross laden weight superior or equal to 7,5 tonnes; (b) the carriage of passengers by a motor vehicle of category M2 or category M3 (as defined in Directive 70/156/EEC).

(2) **Content**

The White Paper, *European transport policy for 2010: time to decide* (COM(2001) 370, 12.9.2001) proposed making the tax system more consistent by bringing in a single tax on commercial road transport fuel by 2003 to complete the internal market.

An initial proposal relating to the harmonization of the taxation on commercial diesel was presented in 2002 (COM(2002)410). This proposal was withdrawn in the context of the screening of legislative proposals pending before the Legislator undertaken at that time (COM(2005)462). However, the Commission also announced its intention to reconsider the need for a legislative intervention in the light of the results of a comprehensive impact assessment.

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<sup>44</sup> For a complete definition, cf. article 7.3 of Directive 2003/96/EC restructuring the Community framework for the taxation of energy products and electricity.



A first assessment of the situation in the road haulage market was conducted last year. Following the results, the Commission was encouraged to make a proposal to introduce special tax arrangements for diesel fuel used for commercial purposes.

In its recent Communication to the Council and the European Parliament (COM(2006) 314, 22.06.2006, Keep Europe moving – Sustainable Mobility for our continent, Mid-term review of the European Commission's 2001 Transport White Paper), the Commission noted that it *"will examine how excessive differences in fuel tax levels can be narrowed"*.

The Community legal framework for taxation of nearly all energy products is laid down in Council Directive 2003/96 of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity (the Energy Tax Directive). It sets out the minimum levels of taxation above which Member States are free to set their own national rates at levels they consider most appropriate. For gas oil and unleaded petrol, the minimum levels are set as follows:

	<b>1 January 2004</b>	<b>1 January 2010</b>
Gas oil	302	330
Unleaded petrol	359	359

The current situation in different Member States is very diverse. For the Member States that do not benefit from a transitional period to adapt to the European minimum rate, the excise duty levied on diesel can range from 302 to 782 euros per 1000 litres. In 6 Member States, the excise duty is above 400 euros.

Some stakeholders argue that these tax differences lead hauliers involved in international activities to conduct a kind of “fiscal planning”. The fact that the diesel consumption pro capita varies between Member States and that these variations appear to be correlated to a certain extent with the different levels of excise duty rates confirms the existence of fiscal planning. Whereas the consumption of diesel pro capita is inferior to 750 litres in the other Member States, it amounts to more than 4 200 litres in Luxembourg.

Depending on how they operate, all haulage companies may not have the same opportunities to benefit from this kind of fiscal planning. It may create distortions of competition. Furthermore, if hauliers make detours on their routes to take advantage of the significant differences in national excise duties on diesel fuel by filling up in Member States with the lowest taxes, it can also have negative effects on the environment because a longer distance is driven in comparison with what would be necessary if the different duty rates did not exist. Finally, fiscal planning results in budgetary losses for the Member States with high excise duty rates and budgetary benefits for the ones with low excise rates.

### **(3) Policy options envisaged to narrow the differences in commercial diesel tax levels**

In order to examine how excessive differences in fuel tax levels can be narrowed, the Commission services propose to study three basic approaches.

**The first approach (option A)** consists of not intervening further at Community level (the no policy change option). This means that unless Member States decide to improve coordinating the levels of their excise duty rates, the tax differences will remain unchanged.

**The second option (option B)** corresponds to the 2002 proposal, e.g. a full harmonisation between Member States of excise duties on commercial diesel. The single rate would be achieved by 2018 and amount to 400 euros. This level takes into account the fact that:

- - 6 Member States already tax diesel at a higher rate than 400 euros per 1000 litre, and would have to decrease their rates,
- - in 2002, the weighted average rate (based on annual consumption of diesel fuel) in EU 15 was 397 euros per 1000 litre,
- - some of the Member States in transition will only reach the minimum level of 330 euros per 1000 litre by 2012 or 2013.

**The third option (option C)** consists of enhanced approximation of excise duties applicable to commercial diesel. A fluctuation band would be set at Community level, with a minimum and a maximum tax rate around a central rate, in which Member States would have to define the level of taxation applicable to commercial diesel. The width of this fluctuation band should be progressively reduced to reach 100 euros by 2010.

In order for the proposal not to impose any increase in commercial diesel excise duties, the Commission services propose to retain the current minimum levels fixed by the ETD as the bottom line of the fluctuation band until 2012. In comparison to the current situation, it means that two Member States will have to decrease their rates by that time.

From 2013, the band could be indexed or remain stable, but with a higher minimum level than currently fixed in the Energy Tax Directive (for example 359 euros per 1000 litres, the same minimum level as for unleaded petrol).

In options B and C:

- transition periods granted in Directives 2003/96/EC, 2004/74/EC and 2004/75/EC would be maintained;
- the non-commercial diesel tax rate would not be less than the rate applied to commercial diesel.
- in case the excise duty for commercial diesel differs from the duty for non-commercial diesel, the indicated price in petrol stations of commercial and non-commercial diesel would remain identical. Hauliers would be refunded the difference in taxation via a refund mechanism applied at Member State level.

#### **(4) Objective**

The goal of this consultation is to provide the basis for a report on the scope and principles of a review of the excise duty for commercial diesel and outline the framework in which work will progress. This will in principle result in a new Commission proposal for a revision of the Energy Tax Directive which the Commission intends to adopt in early 2007.

In response, the Commission is seeking reactions and input on the proposed framework and related issues. By considering the contributions of all stakeholders, the Commission will be in a better position to consider how best to progress the review of commercial diesel tax level.

**(5) Questions for consideration by interested parties**

Before answering the following questions, please present yourself in a few lines (For example, in case you are a haulier, specify if you intervene at national or at international level, which kind of trucks is your fleet composed of...).

- (a) **Do you consider the current state-of-play satisfactory (option A)?**
- (b) **Do you see a need for a full harmonisation (option B)?**
- (c) **Do you see a need for an approximation of tax levels of commercial diesel between Member States (option C)?**
- (d) Which option will best guarantee a level-playing field for all haulage companies? Explain the reason why.
- (e) Do you think that some of the foreseen options will increase administrative costs for road haulage companies?
- (f) Do you think that some of the foreseen options could reduce drivers' working hours? If yes, explain the reason why (fewer route detours...).
- (g) Do you think that some of the foreseen options will reduce car accidents and/or congestion, because of fewer route detours in order to benefit from tax differences?
- (h) Do you think that some of the foreseen options could have an impact on employment? If yes, explain how and in which direction (reduction or increase).
- (i) Do you think that some of the foreseen options could reduce the number of diesel consumers? If yes, explain the reason why.
- (j) Do you think that some of the foreseen options will have consequences in terms of production of and/or demand for bio diesel? Explain the reason why.
- (k) Do you think that some of the foreseen options will increase the demand for means of transport other than the road transport?
- (l) Do you have any further observations you would like to add?

**(6) Consultation target group**

This paper will be mainly of interest to stakeholders in the haulage industry, in the car industry, in the petroleum industry, in the sector of motorways services companies and in the railways sector.

**Annex 3**  
**Detailed presentation of the different options**  
**How were the different options defined?**

**OPTION B: Full harmonisation**

**- 10 year transition period**

The current differences in rates are so significant that it would not have been realistic to proceed immediately to set a single, harmonised Community excise duty. From 1 January 2008 a fluctuation band will be set for commercial diesel at Community level, within which the actual rates applied by the Member States can fluctuate. This fluctuation band will be narrowed over time with a view to achieving harmonisation of excise duty rates for commercial diesel fuel by 2018.

For those Member States that will only reach the minimum level of €330 in 2010, 2012 or 2013, this option provides that the lower limit of the fluctuation band will increase from €330 in 2013 to €400 in 2018 by an amount of €14 each year.

**- Initial width of the fluctuation band**

The burden of change also needs to be spread fairly between Member States. Since 16 of the 18 Member States which currently respect the minimum level fixed by the ETD tax commercial diesel between €302 and €450, the Commission proposed to retain these values as the limits of the fluctuation band to be put into place on 1 January 2008. The other Member States will continue to benefit from their transitional periods. Only two countries will therefore be affected in 2008, because they currently tax above the new maximum level of €450, i.e. Germany and the United Kingdom.

**- Definition of the final central rate**

The Commission proposed to fix the final central rate in 2018 at €400. It takes into account the fact that:

- - 5 Member States already tax diesel at a higher rate than €400 per 1000 litres, and would have to decrease their rates,
- - In 2002, the weighted average rate (based on annual consumption of diesel fuel) in EU 15 was €397 per 1000 litres,
- - 9 Member States still benefit from transition periods to reach the minimum level of €330 after 1 January 2010,
- With an assumed inflation rate of 2 % per year, the new Community minimum rate for diesel fuel from 1 January 2010 of €330 - according to the Energy taxation directive - would already amount to €386 in 2018.

**- Mechanism of reduction of the width of the band**

Starting on 1 January 2009, and every 1 January thereafter until 2018, the upper limit of the fluctuation band will be reduced by €5. In order to take into account the new minimum level from 2010, the lower limit of the fluctuation band will be €315 in 2009 and €330 in 2010. Starting on 1 January 2011, and every 1 January thereafter until 2018, the lower limit will increase by €8.75.

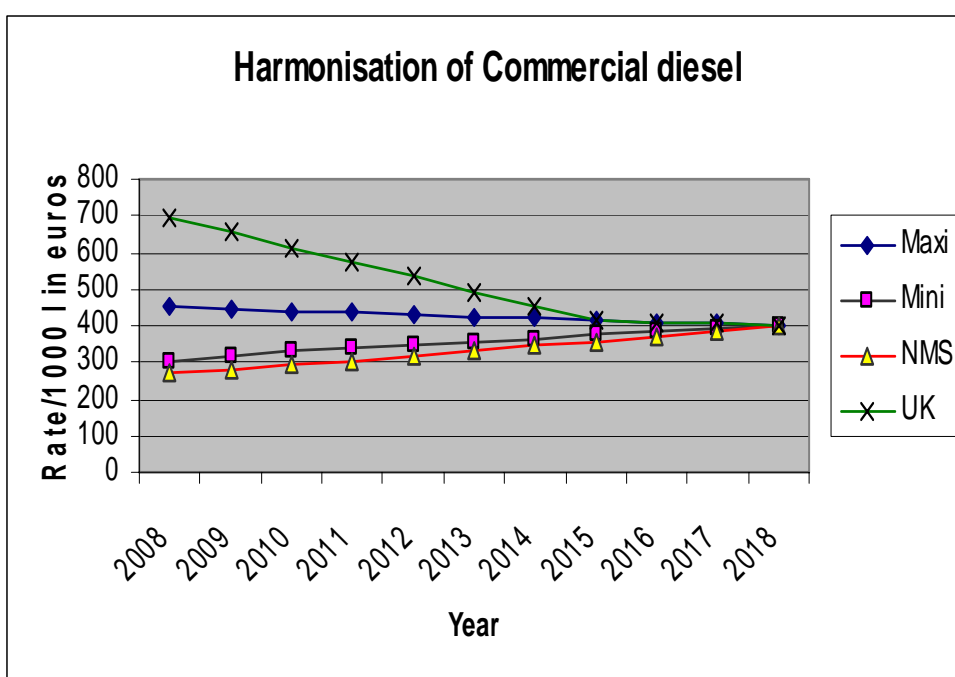
- Taking account of the a-typical situation of the United Kingdom

In order to take into account the a-typical situation of the United Kingdom, the present option foresees that those Member States where the rate applied in 2007 averages more than 1.5 times the central rate of 1 January 2008 may remain outside the fluctuation band for a maximum seven years. They must adopt a convergence plan designed to ensure that their excise duty rate for commercial diesel fuel enters the fluctuation band applicable to the other Member States on 1 January 2015.

- Consequences on the unleaded petrol and non-commercial diesel minimum rates

Since unleaded petrol can not be taxed at a lower than commercial diesel, the minimum rate of unleaded petrol will automatically increase from 2014 onwards to reach €400 in 2018.

Non-commercial diesel will also have to respect the new minimum levels for commercial diesel.



**OPTION C1: Fluctuation band indexed for inflation**

- Width of the fluctuation band

The width of this fluctuation band, initially of €200 in 2008, should be reduced in 2010 to reach €100.

- Indexation of the fluctuation band

From 1 March 2012, and every 1 March thereafter, the minimum level of the band will be corrected on the basis of the harmonised consumer price index for the previous year. The maximum correction will be 2.5%. The upper level of the fluctuation band will remain €100 higher than the lower level (the width of the band will remain constant).

### - Transition periods

The Member States benefiting from transitional periods ending in 2010, 2012 or 2013 will only respect the minimum level of the band once their transitional period is over.

### - Taking account of the atypical situation of the United Kingdom

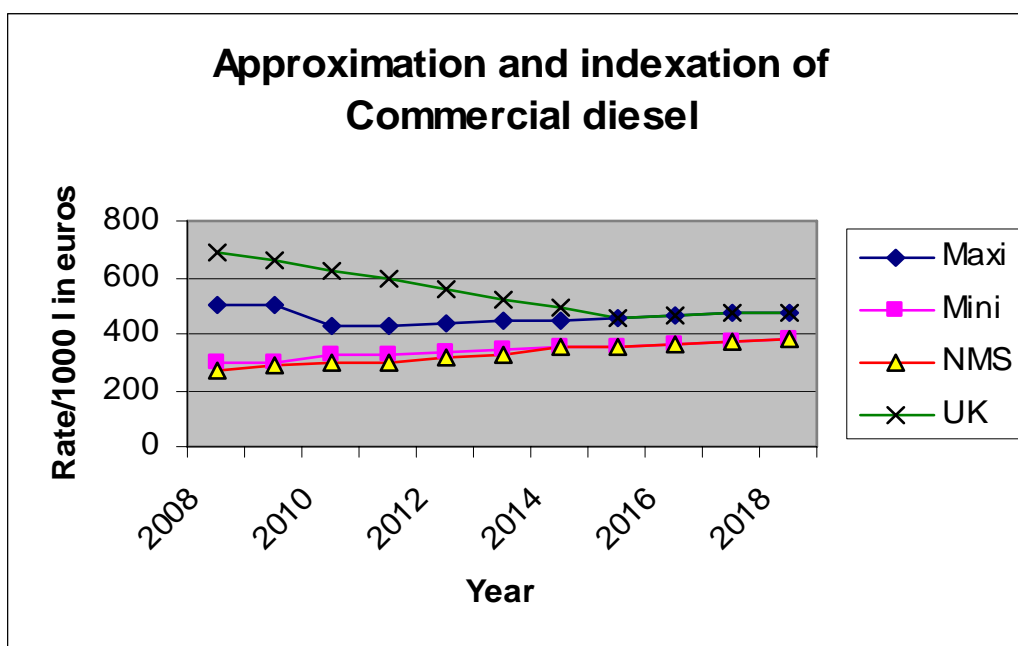
In order to take into account the atypical situation of the United Kingdom, the present option also provides that Member States where the rate applied in 2007 averages more than 1.5 times the central rate of 1 January 2008 may remain outside the fluctuation band for a maximum seven years. They must adopt a convergence plan designed to ensure that their excise duty rate for commercial diesel fuel enters the fluctuation band applicable to the other Member States on 1 January 2015.

### - Consequences on the unleaded petrol minimum rate and non-commercial diesel minimum rates

Since unleaded petrol can not be taxed at a lower than commercial diesel, the minimum rate of unleaded petrol will increase from 2016 onwards and be indexed for inflation. Non-commercial diesel will also have to respect the new minimum levels for commercial diesel.

### - More flexibility to decouple

Member States, which introduce or apply a system of road user charges for motor vehicles using commercial diesel, may apply a rate to gas oil used by such vehicles lower than that applied 1 January 2003, as long as the overall tax burden remains broadly equivalent, and provided that the Community minimum level applicable to commercial gas oil is observed.



## **OPTION C2: Fluctuation band with harmonisation of the minimum rates of taxation of diesel and unleaded petrol**

### - Width of the fluctuation band

The width of this fluctuation band, initially of €200 in 2008, should be reduced in 2010 to reach €100.

#### - Equalisation with unleaded petrol

From 1 January 2012, the minimum level of the band will be equal to €359, the minimum rate applicable to unleaded petrol in the Energy Tax Directive. The upper level of the fluctuation band will remain €100 higher than the lower level (€459).

#### - Transition periods

Those Member States benefiting from transitional periods ending in 2010, 2012 or 2013 will only respect the minimum level of the band once their transitional period is over.

#### - Taking account of the atypical situation of the United Kingdom

In order to take into account the atypical situation of the United Kingdom, the present option also foresees that Member States where the rate applied in 2007 averages more than 1.5 times the central rate of 1 January 2008 may remain outside the fluctuation band for a maximum seven years. They must adopt a convergence plan designed to ensure that their excise duty rate for commercial diesel fuel enters the fluctuation band applicable to the other Member States on 1 January 2015.

#### Consequences on the unleaded petrol minimum rate

No consequence for the unleaded petrol, since the two minimum rates for commercial diesel and unleaded petrol will be equal. Non-commercial diesel will also have to respect the new minimum levels for commercial diesel.

#### - More flexibility to decouple

Member States, which introduce or apply a system of road user charges for motor vehicles using commercial diesel, may apply a rate to gas oil used by such vehicles lower than that applied 1 January 2003, as long as the overall tax burden remains broadly equivalent, and provided that the Community minimum level applicable to commercial gas oil is observed.

### **OPTION C2+: Increase in the minimum level of taxation**

#### - Increase in the minimum rate

From 1 January 2012, the minimum level rate of taxation of commercial diesel will be equal to €359, the minimum rate for unleaded petrol. From 1 January 2014, the minimum rate for commercial diesel will be increase to €380.

#### - Transition periods

The Member States benefiting from transitional periods ending in 2010, 2012 or 2013 will only respect the minimum level of the band once their transitional period is over.

#### - More flexibility to decouple

Member States, which introduce or apply a system of road user charges for motor vehicles using commercial diesel, may apply a rate to gas oil used by such vehicles lower than that applied 1 January 2003, as long as the overall tax burden remains broadly equivalent, and provided that the Community minimum level applicable to commercial gas oil is observed.

#### - Consequences for the unleaded petrol minimum rate and non-commercial diesel minimum rates

Since unleaded petrol can not be taxed at a lower than commercial diesel, the minimum rate of unleaded petrol will increase from 2014 onwards to reach €380. Non-commercial diesel will also have to respect the new minimum levels for commercial diesel.

