

# CPB Memorandum

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## **Tax rates on energy usage**

An adjustment of the GTAP-6 rates

The tax rates of deliveries of energy products to industry and households in the GTAP-6 database are in some countries for the year 2001 rather different from the ones reported by the International Energy Agency (IEA). Especially the rates for deliveries to industry seem to be too high. This paper shows the rates derived from IEA with observations from Energy Prices and Taxes statistics and documents a new dataset with adjusted tax rates. Comparison with the GTAP-6 database reveals some striking differences. The rates are further adjusted for petroleum and coal products after comparing the implied taxes calculated as a percentage of GDP with the OECD Revenue Statistics. For other energy carriers we have not corrected the rates any further

This paper is a contribution to the paper “The EU-ETS and existing energy taxes”, which was delivered as a contribution to the EU TAXBEN-project ([www.taxben.org](http://www.taxben.org)).

# 1 Tax rates according to the GTAP-6 database

The tax rates of the energy sectors in the GTAP-6 are not directly available in the database. They are calculated by dividing the values at agent prices by the values at market prices. This results in two tables for the 23 region version of the climate version of WorldScan.

**Table 1.1 Percentage tax rates on energy carriers delivered to firms, applicable on pre-tax values, by country, 2001, according to the GTAP-6 database**

	coal	petroleum and coal products			natural gas	electricity	
		to electricity	to transport	to other sectors	total		
Germany	0.0	14.4	282.6	282.5	210.0	26.0	7.8
France	0.0	14.7	307.4	307.3	235.0	0.8	0.6
United Kingdom	0.0	8.1	275.3	275.2	190.7	0.0	0.0
Netherlands	0.0	12.3	609.1	609.0	156.4	11.3	9.9
Italy	0.0	0.0	341.2	341.2	223.6	13.0	18.2
Spain	0.0	9.6	203.8	203.8	155.0	0.0	0.0
Rest of EU-15	96.2	8.0	253.3	243.2	169.0	-0.6	1.1
New member states	0.0	-2.5	97.8	74.6	63.0	0.2	0.5
Other Europe	-1.7	2.5	123.1	127.3	84.9	-0.4	2.5
Canada	0.0	0.9	83.9	83.9	60.1	1.5	-1.0
Other OECD	0.0	3.4	104.2	104.3	77.0	6.5	3.0
Former Soviet Union	-1.2	20.4	22.8	9.1	14.6	24.9	0.2
Turkey	0.0	15.9	49.9	49.9	38.5	7.7	10.0
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Australia	0.0	78.9	37.8	37.8	35.5	3.5	0.2
Brazil	0.0	6.0	8.0	6.6	3.9	1.5	16.0
Other Latin America	-0.8	4.6	24.7	22.6	18.1	3.4	13.9
Middle East	-1.1	0.1	14.7	17.1	10.8	0.2	3.3
China and Hong Kong	0.0	0.0	0.0	0.0	0.0	0.4	0.0
India	0.0	11.7	36.9	0.0	29.0	0.0	0.0
Rest of World	-0.1	2.3	13.4	11.9	9.7	3.1	0.8

From table 1.1 we can conclude that for individual countries the rates applied in industry for the petroleum and coal products sector (P\_C) to electricity (ELY) are much lower than to other sectors. Moreover the rates of the transport sector (TRA) seem to have been applied for all other sectors as well. The rates for other energy carriers are much lower and sometimes imply a subsidy.

**Table 1.2 Percentage tax rates on energy carriers delivered to households, applicable on pre-tax values, by country, 2001, according to the GTAP-6 database**

	coal		petroleum and coal products		natural gas		electricity	
	total	of which	total	of which	total	of which	total	of which
		VAT		VAT		VAT		VAT
Germany	127.2	16.0	348.2	16.0	79.5	16.0	51.4	15.9
France	160.6	19.6	676.4	19.6	67.3	17.4	55.7	17.0
United Kingdom	33.5	5.0	368.1	17.5	23.8	5.0	18.0	4.9
Netherlands	-10.3	19.0	428.7	19.0	62.4	19.0	23.9	19.0
Italy	0.0	20.0	509.8	20.0	247.5	19.4	47.2	10.0
Spain	0.0	16.0	366.5	16.0	77.4	16.0	30.9	16.0
Rest of EU-15	62.6	20.0	341.8	20.0	76.4	15.0	61.5	14.0
New member states	15.9	22.0	172.8	22.0	11.1	20.0	6.0	20.0
Other Europe	2.5	15.0	153.7	15.0	0.1	14.0	14.6	14.0
Canada	8.9	7.0	129.3	7.0	25.4	6.5	-3.3	11.2
Other OECD	11.6	4.0	262.7	4.0	29.5	6.0	4.3	6.0
Former Soviet Union	17.7	20.0	48.8	20.0	20.1	20.0	-29.5	20.0
Turkey	14.5	17.7	83.2	17.7	10.2	17.6	13.3	17.7
United States	0.0	6.0	67.3	6.0	0.0	6.0	0.0	6.0
Australia	0.0	10.0	194.8	10.0	8.1	9.1	-0.2	9.1
Brazil	0.0	10.0	123.3	10.0	12.3	10.0	39.9	10.0
Other Latin America	-0.1	10.0	103.2	10.0	14.9	10.0	22.8	10.0
Middle East	19.3	10.0	25.0	10.0	-0.6	10.0	2.7	10.0
China and Hong Kong	0.0	13.0	0.0	17.0	0.1	13.0	-0.9	13.0
India	2.4	11.3	95.9	11.3	0.0	11.3	0.0	11.3
Rest of World	1.4	10.0	27.0	10.0	5.2	10.0	-2.2	10.0

For deliveries to households we can expect a higher tax rate than to industry. For some countries (in France for P\_C) the difference is huge and can be attributed to the excise duties on petrol. The VAT rates in this table are not taken from GTAP but from IEA (2006) and have in some cases been estimated. A higher VAT rate than the tax rate is unusual and implies indeed a subsidy. Note that the VAT rate is not always equal for one country over the various energy carriers. Especially in the United Kingdom petroleum and coal products carry the high rate of 17.5%, whereas for the other carriers, a lower rate of 5% applies.

## 2 Adjusted tax rates from IEA

In this section we discuss an adjustment of the tax rates as presented in the previous section. Compared to other studies the GTAP-6 tax rates for energy carriers seem to be too high and in some cases not plausible. This section shows the results of an overall adjustment of the tables mentioned in section 1. Generally, the new rates can be found in IEA(2006) and if necessary an extra note explains how a rate for a specific country was arrived at.

**Table 2.1 First choice of tables used for percentage of taxes of energy carriers for OECD countries**

	Intermediate deliveries (to ELY)	Intermediate deliveries (to TRA)	Intermediate deliveries (to other sectors)	Private consumption
Coal	Table 17: steam coal prices in industry	Table 17: steam coal prices in industry	Table 17: steam coal prices in industry	
Petroleum and coal products	Table 3 : Heavy fuel oil for electricity generation	Table 6: Automotive diesel prices for commercial use	Table 2: low sulphur fuel oil prices in industry	Table 11: premium unleaded (95 RON) Gasoline Prices
Natural gas	Table 14: natural gas prices in industry	Table 14: natural gas prices in industry	Table 14: natural gas prices in industry	Table 16: natural gas prices in households
Electricity	Table 18: electricity prices in industry	Table 18: electricity prices in industry	Table 18: electricity prices in industry	Table 19: electricity prices in households

Source: IEA (2006), see Part II: Energy End-Use Prices in OECD Countries: C. Taxation of Energy Prices.

For non-OECD countries we have used the country specific information from IEA (2006): Part III: Energy End-Use Prices in Non-OECD Countries, A. Energy End-Use Prices, Taxes and Price Indices in National Currencies.

Apart from these assumptions we have also set the tax rate of intermediate deliveries of the energy carrier Coal, Petroleum and Coal Products and Natural gas to its own sector to zero. These deliveries are in many cases not taxed.

For household deliveries we use the VAT rates from the previous section. For coal we assume a zero rate on top of this rate.

Together with some estimations (highlighted in the tables) this leads to the following results in table 2.2 and 2.3

**Table 2.2 Percentage tax rates on energy carriers delivered to firms, applicable on pre-tax values, by country, 2001, according of IEA and own estimates**

	coal <sup>1)</sup>	Petroleum and coal products			total	natural	
		to electricity	To transport	to other sectors		gas	electricity
Germany	0.0	12.7	136.4	11.9	50.2	14.2 <sup>13)</sup>	0.0
France	0.0	12.7 <sup>2)</sup>	127.8	10.9	55.0	11.0 <sup>4)</sup>	0.0
United Kingdom	13.8	31.9	232.2	28.2	105.9	4.5	5.7
Netherlands	0.0	12.7 <sup>2)</sup>	98.4	16.6	34.1	6.5	10.5
Italy	0.0	12.7 <sup>2)</sup>	113.7	18.5	58.2	11.1 <sup>14)</sup>	20.0
Spain	0.0	6.4	82.5	6.4	37.0	11.1 <sup>4)</sup>	5.0
Rest of EU-15	0.0	11.1 <sup>6)</sup>	92.3	17.6 <sup>7)</sup>	39.2	13.9 <sup>15)</sup>	8.7 <sup>16)</sup>
New member states	0.0	11.1 <sup>5)</sup>	53.8 <sup>7)</sup>	9.9 <sup>4)</sup>	21.8	5.3 <sup>4)</sup>	1.0 <sup>17)</sup>
Other Europe	25.0	12.7 <sup>2)</sup>	150 <sup>8)</sup>	17.6	46.8	0.8 <sup>9)</sup>	11.1 <sup>18)</sup>
Canada	0.0	4.9 <sup>3)</sup>	47.9	5.2 <sup>3)</sup>	19.7	9.1 <sup>4)</sup>	11.4
Other OECD	5.0	5.0 <sup>5)</sup>	100.0	5.0 <sup>10)</sup>	25.5	4.9 <sup>10)</sup>	8.1 <sup>10)</sup>
Former Soviet Union	20.5	5.3 <sup>4)</sup>	8.6	8.6 <sup>11)</sup>	6.4	5.1 <sup>4)</sup>	20.5
Turkey	17.8	38.3	117.4	38.3	55.0	17.6	18.9
United States	0.0	4.9	46.6	5.2 <sup>12)</sup>	25.0	5.1 <sup>4)</sup>	5.3 <sup>4)</sup>
Australia	0.0	5.3 <sup>4)</sup>	81.8 <sup>4)</sup>	5.2 <sup>3)</sup>	44.4	4.5 <sup>4)</sup>	5.3 <sup>4)</sup>
Brazil	0.0	5.3 <sup>4)</sup>	42.9 <sup>4)</sup>	11.1 <sup>4)</sup>	18.5	4.8 <sup>4)</sup>	5.3 <sup>4)</sup>
Other Latin America	0.0	5.3 <sup>4)</sup>	42.9 <sup>4)</sup>	11.1 <sup>4)</sup>	19.8	4.4 <sup>4)</sup>	5.3 <sup>4)</sup>
Middle East	0.0	5.3 <sup>4)</sup>	42.9 <sup>4)</sup>	5.3 <sup>4)</sup>	14.1	4.7 <sup>4)</sup>	5.3 <sup>4)</sup>
China and Hong Kong	0.0	5.3 <sup>4)</sup>	42.9 <sup>4)</sup>	5.3 <sup>4)</sup>	9.5	4.1 <sup>4)</sup>	5.3 <sup>4)</sup>
India	18.2	5.3 <sup>4)</sup>	52.0 <sup>9)</sup>	30.0 <sup>9)</sup>	31.9	5.3 <sup>4)</sup>	5.3 <sup>4)</sup>
Rest of World	5.3	5.3 <sup>4)</sup>	38.9 <sup>7)</sup>	3.1 <sup>7)</sup>	12.7	4.8 <sup>4)</sup>	5.3 <sup>4)</sup>

<sup>1)</sup> If not available we use the tax rates from deliveries of petroleum and coal products to other sectors

<sup>2)</sup> rate of Germany

<sup>3)</sup> rate of United States

<sup>4)</sup> estimate

<sup>5)</sup> rate of Japan in 1997

<sup>6)</sup> average of rates of Belgium and Ireland

<sup>7)</sup> average of some countries; for EUO = Austria, Belgium, Denmark, Finland, Greece, Luxembourg, Portugal; for EUN = Czech Republic, Poland, Slovak Republic.

<sup>8)</sup> based on rate of Switzerland

<sup>9)</sup> excise and sales tax

<sup>10)</sup> rate of Japan

<sup>11)</sup> rate of table 6: automotive diesel for commercial use

<sup>12)</sup> rate of table 2: low sulphur fuel oil prices in industry

<sup>13)</sup> rate of year 2000

<sup>14)</sup> rate of year 1998

<sup>15)</sup> rate of Finland

<sup>16)</sup> rate of Denmark, Portugal and Ireland

<sup>17)</sup> rate of Slovakia

<sup>18)</sup> rate of Norway and Switzerland

**Table 2.3 Percentage tax rates on energy carriers delivered to households, applicable on pre-tax values, by country, 2001, according tot IEA and own estimates**

	petroleum and coal						
	coal <sup>1)</sup>	products		natural gas		electricity	
	total	total	of which VAT	total	of which VAT	total	of which VAT
Germany	16.0	253.4	16.0	31.2 <sup>8)</sup>	16.0	15.9	15.9
France	19.6	252.1	19.6	17.4	17.4	26.7	17.0
United Kingdom	5.0	318.4	17.5	5.0	5.0	4.9	4.9
Netherlands	19.0	220.5	19.0	61.0	19.0	74.5	19.0
Italy	20.0	197.6	20.0	86.9 <sup>9)</sup>	19.4	37.6	10.0
Spain	16.0	149.4	16.0	16.0	16.0	22.0	16.0
Rest of EU-15	20.0	185.7	20.0	25.0	15.0	25.0	14.0
New member states	22.0	150	22.0	22.0	20.0	22.0 <sup>12)</sup>	20.0
Other Europe	15.0	171.7 <sup>2)</sup>	15.0	14.9 <sup>10)</sup>	14.0	14.9	14.0
Canada	7.0	64.7 <sup>3)</sup>	7.0	6.5	6.5	11.2	11.2
Other OECD	4.0	104.1 <sup>4)</sup>	4.0	6.0 <sup>11)</sup>	6.0	7.1 <sup>11)</sup>	6.0
Former Soviet Union	20.0	62.9	20.0	22.0 <sup>6)</sup>	20.0	22.0 <sup>6)</sup>	20.0
Turkey	17.7	168.8	17.7	17.6	17.6	23.6	17.7
United States	6.0	30.0	6.0	6.0	6.0	6.4	6.0
Australia	10.0	111.9 <sup>5)</sup>	10.0	9.9 <sup>6)</sup>	9.1	10.0 <sup>6)</sup>	9.1
Brazil	10.0	53.8 <sup>6)</sup>	10.0	11.1 <sup>6)</sup>	10.0	11.1 <sup>6)</sup>	10.0
Other Latin America	10.0	53.8 <sup>6)</sup>	10.0	11.1 <sup>6)</sup>	10.0	11.1 <sup>6)</sup>	10.0
Middle East	10.0	53.8 <sup>6)</sup>	10.0	11.1 <sup>6)</sup>	10.0	11.1 <sup>6)</sup>	10.0
China and Hong Kong	13.0	53.8 <sup>6)</sup>	17.0	13.6 <sup>6)</sup>	13.0	13.6 <sup>6)</sup>	13.0
India	11.3	43.5 <sup>7)</sup>	11.3	11.4 <sup>6)</sup>	11.3	11.4 <sup>6)</sup>	11.3
Rest of World	10.0	53.8 <sup>6)</sup>	10.0	11.1 <sup>6)</sup>	10.0	11.1 <sup>6)</sup>	10.0

<sup>1)</sup> The tax rate of this energy carrier equals the VAT rate. No information about actual rates is available in IEA (2006)

<sup>2)</sup> based on the rate of Switzerland and Norway

<sup>3)</sup> based on table 10: taxes on premium unleaded (98 RON) Gasoline Price

<sup>4)</sup> based on rates of Japan and New Zealand in table 9: taxes on regular unleaded Gasoline Price

<sup>5)</sup> rate of table 9: taxes on regular unleaded Gasoline Price

<sup>6)</sup> estimate

<sup>7)</sup> excise and sales tax rate

<sup>8)</sup> rate of year 2000

<sup>9)</sup> rate of year 1999

<sup>10)</sup> rate of Switzerland

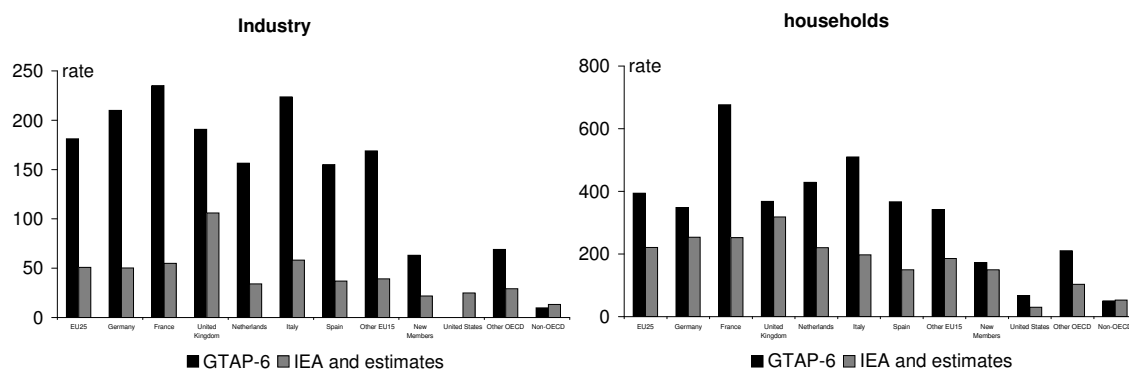
<sup>11)</sup> rate of Japan

<sup>12)</sup> based on the rate of Czech Republic and Slovakia

### 3 The new tax rates compared to the ones in the GTAP-6 database

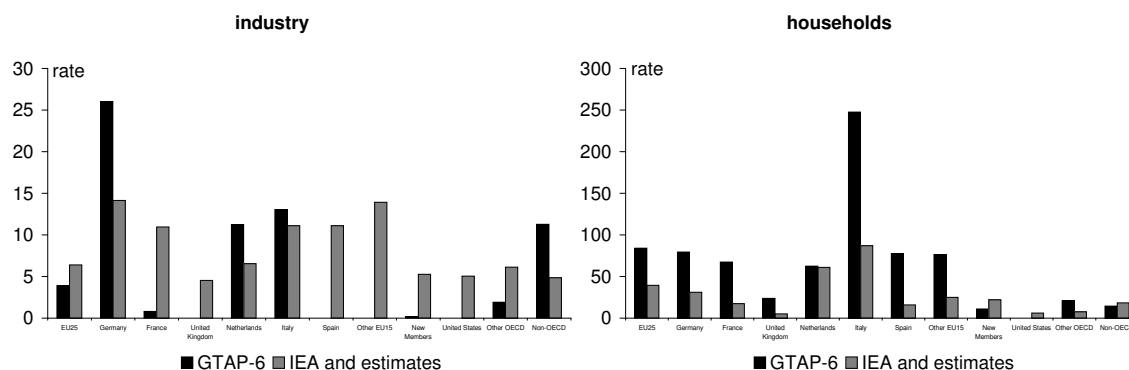
An important goal of this data analysis is to establish tax rates, which represent reality as much as possible. We realise that not all the adapted rates will be fully correct, but they do differ from the original GTAP-6 rates. This section shows a few differences for some regions. We restrict the comparison to deliveries of energy carriers petroleum and coal products, natural gas and electricity.

Figure 3.1 Tax rates of deliveries of petroleum and coal products to industry and households in 2001



For petroleum and coal products lower tax rates are adopted for deliveries to industry than to those for households according to IEA and own estimates compared to the rates of the GTAP-6 database. For almost all counties and regions this is the case, except for the deliveries to industry in the United States, where a zero rate is found in the GTAP database. For non OECD countries we estimate a slightly higher rate than in the GTAP-6 database.

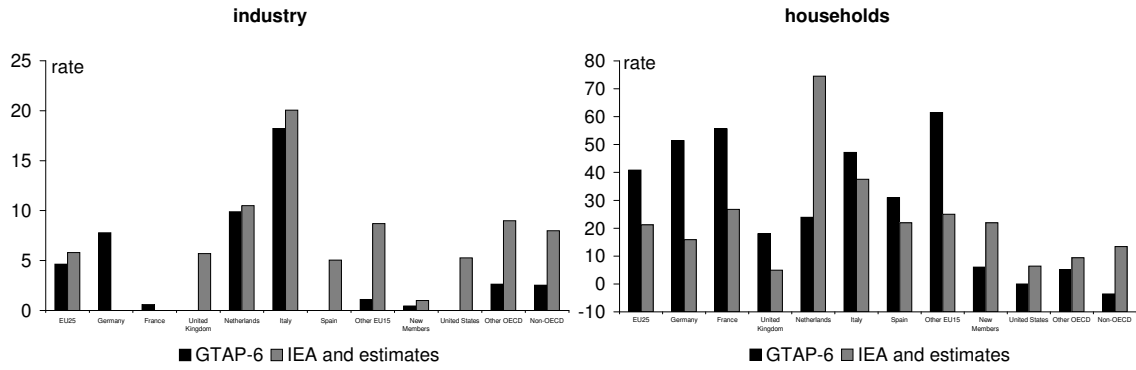
Figure 3.2 Tax rates of deliveries of natural gas to industry and households in 2001



For natural gas we can see a similar difference between the two sources: the IEA and own estimated rates are generally lower than the GTAP-6 rates. In this case, however there are more

exceptions in the sense that the GTAP-6 database contains more zero tax rates. The tax rate to households for Italy is exceptionally high according to GTAP-6.

**Figure 3.3 Tax rates of deliveries of electricity to industry and households in 2001**



For deliveries of electricity to industry we note for some countries a higher tax rate according to IEA and own estimations than the rates of the GTAP-6 database. For households however the new tax rates are for most countries lower than according to the GTAP-6 database. For the Netherlands and some Scandinavian countries we observe a much higher tax rate than in other EU25 countries.



## 4 Further adjustments of the tax rates

### 4.1 Petroleum and coal products

In this section we discuss the results of an adjustment of the tax rates according to findings from the Revenue Statistics of the OECD<sup>1</sup>. It is not easy to obtain figures for detailed tax receipts and more specifically for energy excise duties from these sources. Without going into detail we have made a calculation of duties of mineral oils as a percentage of GDP for some OECD countries, using the various sources in the OECD Revenue Statistics. Excise duties on mineral oils can be separated in those on leaded and unleaded petrol, diesel, LPG and Methane and Heavy fuel oil. In the OECD Revenue Statistics however, only a combination of these duties is often found. In table 4.1 we show total taxes, total excise duties and excise duties on mineral oils as a percentage of GDP. The percentages can then be compared to our calculated taxes as a percentage of GDP of the energy carrier P\_C making use of the rates of table 2.2 and 2.3 of pre-tax values and GDP according to the GTAP-6 database.

For most countries our calculated rates are higher than the rates implied by and based on tax revenue statistics. For France, Netherlands and Turkey the differences are substantial. The original rates according to the GTAP-6 database for the Netherlands, however, are not very high compared to other countries. It looks as if the value of the P\_C sector as a share of GDP is high and therefore also the tax rate of this sector. For Italy, Spain, other EU15 and other Europe our calculated rates are also higher than the implied rates in the revenue statistics. For United Kingdom, Germany, Canada, Japan and United States the two rates are almost identical. For New EU member states our calculated rate is much lower than the rate derived from the revenue statistics. For this region information from both statistics is limited to a few countries and most likely rather inaccurate.

In all cases we have decided to adjust our calculated taxes of P\_C as a percentage of GDP only for these countries and regions if the absolute differences between this rate and that of the revenue statistics is more than 20%. This results in the following table.

<sup>1</sup> OECD Database Online at the CPB, RS - Revenue Statistics, Tax revenue as percentage of GDP  
OECD Database Online at the CPB, RS - Revenue Statistics, Details of tax revenue for individual countries

**Table 4.1 Taxes as a percentage of GDP, 2001**

	B :total	C: of which: excises	D: of which: excises on mineral oils	our calculation	revised
Germany	36.9	3.0	2.0	2.3	2.3
France	45.0	2.7	1.5	2.7	2.1
United Kingdom	37.3	3.7	2.2	2.4	2.4
Netherlands	39.5	3.4	1.2	3.7	2.6
Italy	42.0	2.5	1.9	2.4	2.1
Spain	35.6	2.6	..	2.1	1.8
Rest of EU-15	45.8	2.2	1.7	2.1	1.9
New member states	38.4	3.5	2.2	1.4	1.8
Other Europe	36.0	3.0	1.3	1.9	1.6
Canada	35.1	1.8	1.1	0.9	0.9
Other OECD	27.3	1.9	0.8	1.0	1.0
Turkey	36.5	3.9	3.2	4.5	3.9
United States	28.9	1.3	0.4	0.4	0.4
Australia	30.1	2.9	..	1.2	1.2

Source: OECD Database Online at the CPB, Revenue statistics

Column B: Tax revenue as percentage of GDP

Column C and D: Details of tax revenue for countries concerned

In column D we have used the share of mineral oils in the total tax receipts.

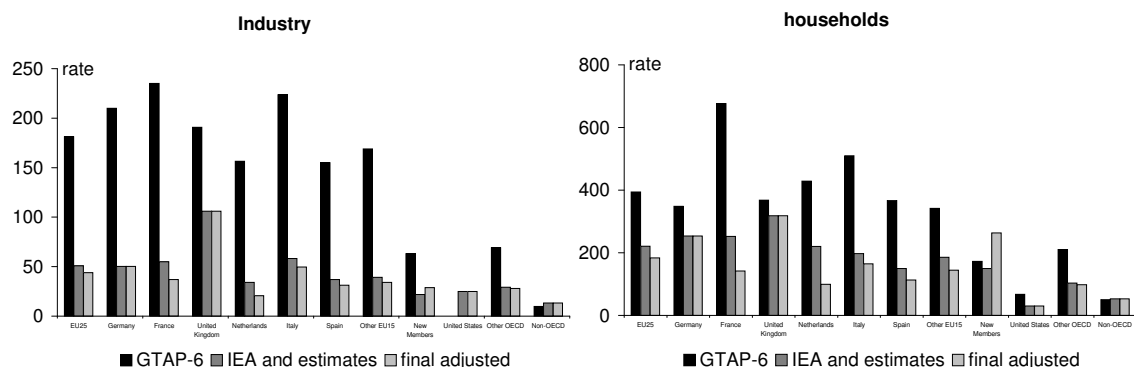
In some countries / regions we have used an other terminology, like tax on Hydrocarbon oil in United Kingdom

We have adjusted the rate of Spain as well since Newbery (2005) found a rate 1.6

For the countries and regions concerned we have adjusted two tax percentages of petroleum and coal products deliveries in such a way that the revised tax rate as a percentage of GDP in table 4.1 is arrived at. First of all in table 2.2 we have adjusted the rates of deliveries of petroleum and coal products to the transport sector and secondly the deliveries of this sector to households in table 2.3. To illustrate these adjustments we show here an extension of figure 3.1, with an extra bar for the final rates for the sector petroleum and coal products.

The figures show the adjustments for this sector in the selected regions. The final tax rates can be seen from the most rightward bar in each graph. Note the low rates of the Netherlands and France compared to most of the other countries within EU25. On the other hand we see a relative high tax for households in the New Members States.

**Figure 4.1 Tax rates of deliveries of petroleum and coal products to industry and households in 2001, adjusted**



To complete the adjustment process we show here the final adjusted rates in tables 4.2 and 4.3.

**Table 4.2 Percentage tax rates on energy carriers delivered to firms, applicable on pre-tax values, by country, 2001, according to IEA and own estimations and after adjustments of revenue taxes**

	coal	petroleum and coal products			natural gas	electricity	
		to electricity	to transport	to other sectors			
Germany	0.0	12.7	136.4	11.9	50.2	14.2	0.0
France	0.0	12.7	69.8	10.9	36.9	11.0	0.0
United Kingdom	13.8	31.9	232.2	28.2	105.9	4.5	5.7
Netherlands	0.0	12.7	43.3	16.6	20.6	6.5	10.5
Italy	0.0	12.7	89.0	18.5	49.6	11.1	20.0
Spain	0.0	6.4	65.0	6.4	31.3	11.1	5.0
Rest of EU-15	0.0	11.1	71.8	17.6	34.0	13.9	8.7
New member states	0.0	11.1	86.9	9.9	28.8	5.3	1.0
Other Europe	25.0	12.7	102.8	17.6	39.0	0.8	11.1
Canada	0.0	4.9	47.9	5.2	19.7	9.1	11.4
Other OECD	5.0	5.0	100.0	5.0	25.5	4.9	8.1
Former Soviet Union	20.5	5.3	8.6	8.6	6.4	5.1	20.5
Turkey	17.8	38.3	80.2	38.3	46.2	17.6	18.9
United States	0.0	4.9	46.6	5.2	25.0	5.1	5.3
Australia	0.0	5.3	81.8	5.2	44.4	4.5	5.3
Brazil	0.0	5.3	42.9	11.1	18.6	4.8	5.3
Other Latin America	0.0	5.3	42.9	11.1	19.8	4.4	5.3
Middle East	0.0	5.3	42.9	5.3	14.1	4.7	5.3
China and Hong Kong	0.0	5.3	42.9	5.3	9.5	4.1	5.3
India	18.2	5.3	52.0	30.0	31.9	5.3	5.3
Rest of World	5.3	5.3	38.9	3.1	12.7	4.8	5.3

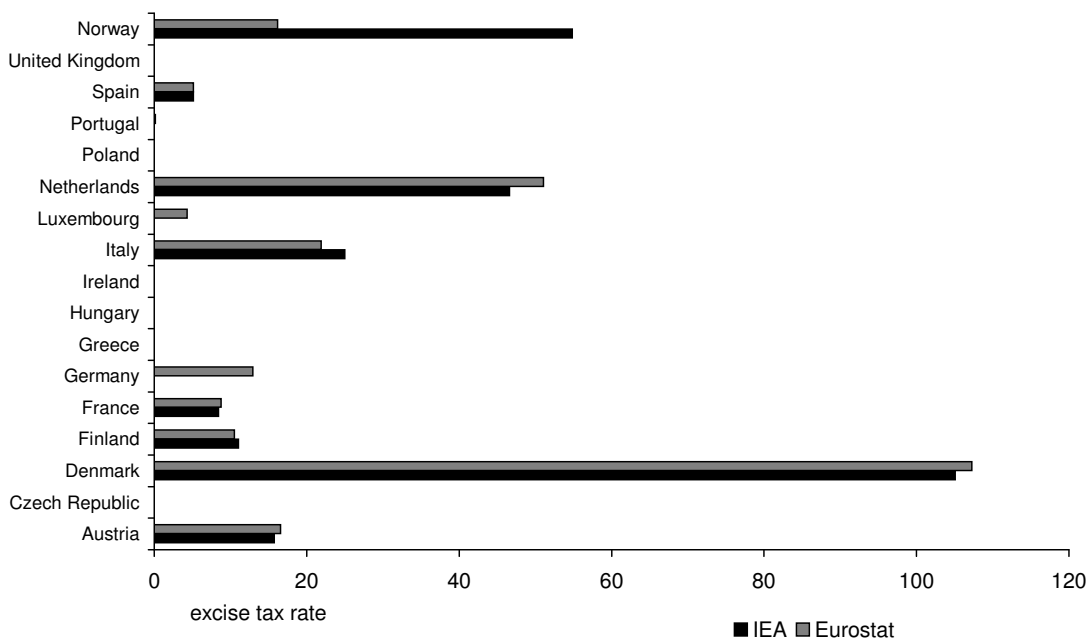
**Table 4.3 Percentage tax rates on energy carriers delivered to households, applicable on pre-tax values, by country, 2001, according to IEA and own estimations and after adjustments of revenue taxes**

	petroleum and coal						
	coal	products		natural gas		electricity	
	total	total	of which VAT	total	of which VAT	total	of which VAT
Germany	16.0	253.4	16.0	31.2	16.0	15.9	15.9
France	19.6	142.1	19.6	17.4	17.4	26.7	17.0
United Kingdom	5.0	318.4	17.5	5.0	5.0	4.9	4.9
Netherlands	19.0	99.6	19.0	61.0	19.0	74.5	19.0
Italy	20.0	164.6	20.0	86.9	19.4	37.6	10.0
Spain	16.0	112.8	16.0	16.0	16.0	22.0	16.0
Rest of EU-15	20.0	144.5	20.0	25.0	15.0	25.0	14.0
New member states	22.0	263.6	22.0	22.0	20.0	22.0	20.0
Other Europe	15.0	91.9	15.0	14.9	14.0	14.9	14.0
Canada	7.0	64.7	7.0	6.5	6.5	11.2	11.2
Other OECD	4.0	104.1	4.0	6.0	6.0	7.1	6.0
Former Soviet Union	20.0	62.9	20.0	22.0	20.0	22.0	20.0
Turkey	17.7	103.7	17.7	17.6	17.6	23.6	17.7
United States	6.0	30.0	6.0	6.0	6.0	6.4	6.0
Australia	10.0	111.9	10.0	9.9	9.1	10.0	9.1
Brazil	10.0	53.8	10.0	11.1	10.0	11.1	10.0
Other Latin America	10.0	53.8	10.0	11.1	10.0	11.1	10.0
Middle East	10.0	53.8	10.0	11.1	10.0	11.1	10.0
China and Hong Kong	13.0	53.8	17.0	13.6	13.0	13.6	13.0
India	11.3	43.5	11.3	11.4	11.3	11.4	11.3
Rest of World	10.0	53.8	10.0	11.1	10.0	11.1	10.0

## 4.2 Electricity

Excise duties for electricity are not widely observed in IEA for OECD countries and if we have found them they are often very low or zero. Exceptions are found for Scandinavian countries and the Netherlands. In order to check these rates we have compared the IEA rates with the ones from EUROSTAT for some EU25 countries and Norway. The results can be found in the next figure.

**Figure 4.2 Excise duties for deliveries of electricity in households in 2001**



For Eurostat we have calculated the tax rates of: 41 611 50 Households - Dc (Annual consumption: 3,500 kWh of which night 1,300 kWh)

Figure 4.2 shows that for most countries available the tax receipts are almost identical. We notice however an almost 13% rate for Germany according to Eurostat, whereas IEA reports a zero rate. On the other hand, the rate for Norway is much lower according to Eurostat than IEA. Overall we don't see any reason to further adjust the electricity tax rates as presented in section 2.

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