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ENERGY PRICE AND TAX HARMONIZATION IN THE COMMUNITY

(Communication from the Commission to the Council)

ENERGY PRICE AND TAX HARMONIZATION
IN THE COMMUNITY

1.1. A wide diversity of energy price regimes, tariff structures, and taxation policies have existed within the Community for many years. Apart from differences in productivity/wage rate structures in the economies of individual member States, and within the energy industries, the principal reasons for divergence include :

- a) differences in the structure of the energy industries, in the financing of nationalized industries and public utilities, and in the control of pricing policy,
- b) differences in taxation,
- c) difference arising from energy policy considerations, and from the balance that individual member States strike between energy problems and broader policy objectives.

1.2. This note reviews the extent of these differences and some of the policy issues from which they derive. It concludes that divergence in energy pricing and taxation is increasingly becoming an obstacle to harmonization in energy policy. Complete harmonization is our long-term objective. The first step must be to move towards a common approach to pricing regimes, tariff structures and frameworks for taxation.

2. The structure of the energy industries and their approach to pricing

Consumer prices and taxes within the Community for most of the important fuels in 1979 and 1980 are set out in the tables at Appendix 1. Appendix 2 provides a simple graphical presentation of the same data for 1979 only.

2.1. Oil

To a greater extent than any other fuel, oil product prices are dominated by taxation, especially in the case of motor fuels. ...

.. In addition legislation controls the evolution of consumer prices for the main products in all member States other than the FRG and the UK ; in most member States controls are based on ceiling prices calculated by (partial) reference to spot prices for petroleum products at Rotterdam and Genoa, and average prices for crude oil. Most member States have in practice now accepted that consumer oil prices must reflect in full the increase in world prices for crude oil.

2.2. Coal

There is no formal price control regime for Community coal and prices are, in general, set by the producers in the light of market conditions.

However, since the cost of Community production is, in general, well above world coal prices, a considerable proportion of Community coal production would be unable to find a market if it were not for a variety of special factors :

- Community legislation provides for subsidies to producers to sell coking coal at competitive prices ;
- in a number of countries subsidies or their equivalent are paid either to producers or consumers to enable Community coal to compete with imported coal for electricity generation ;
- costs of transport and handling enable Community coal to sell at delivered prices competitive with world prices, especially in coal producing regions ;
- in Germany there are quantitative limits on coal imports.

2.3. Gas

Regimes vary widely within the Community. One extreme is represented by the FRG which has a large number of independent gas transport companies, no price regulation and no requirement for gas prices for industry and power stations to be published (however, in the domestic sector, tariffs are applied and controlled by local authorities). At the other extreme is France, where the gas industry is almost wholly nationalized, prices are subject to formal control by the Ministry of Industry and there are legal obstacles to price discrimination.

All countries other than Germany have either a formal or informal system of state intervention or control by public authorities on gas prices.

Tariffs include, in general, two parts : a standing charge covering transport, distribution and other fixed costs and a commodity charge per unit of gas sold which varies proportionately with quantity. Consequently, the mixing of these charges leads to a composite price that decreases with growing consumption. Prices to industry are lower than domestic prices, firstly as a result of the influence of prices for competitive fuels that are different for each market and secondly because of lower transport and distribution costs.

Because of the structure of gas tariffs the price per unit consumed varies according to a consumer's circumstances, and price studies have to define "typical" consumers. In some cases, the price to such a consumer can be read off the tariff, in others typical prices can only be determined by sampling.

2.4. Electricity

As in the case of gas, the structure of the industry and its associated pricing regimes vary widely within the Community, and on similar lines. Prices are either directly or informally controlled by government throughout the Community.

Pricing practices are extremely complicated and the very great importance of capital in the overall cost structure of the industry is a key factor. The cost of supply to an individual consumer depends not only on the volume of electricity demanded, but on the seasonal, weekly and daily pattern of demand and the extent of fluctuation in demand. This reflects the fact that the industry has to be capable of meeting, with ample generating reserves, the peak demand placed on it.

It follows that the costs of supply are minimized the greater the average load in relation to peak demand. Tariffs therefore exist to encourage the use of electricity at off-peak periods.

While it is often true that the average price per Kwh consumed falls with the volume supplied, the considerations above give rise to exceptions.

As in the case of gas, there is therefore no standard price for electricity. Tariffs for industrial consumers are not published in all countries. Once again prices have to be estimated for typical consumers under specified and defined conditions, sometimes using sample data.

3. Energy taxation

- 3.1. The table at Appendix 3 shows how the incidence of taxation varies both between types of energy and between member States. In general taxes are higher on oil products than other forms of energy, higher to the domestic consumer than to industry, highest in Denmark, France and Italy and lowest in the UK and Ireland.

The diversity of taxation practice shows that the taxation of energy is not at present related to energy policy. High excise taxes on motor fuels essentially serve overall budgetary requirements and meet expenditure for road building and maintenance. The other oil products and non-oil energy are in the main subject only to VAT, although domestic heating oil usually bears some excise tax. Because of the credit mechanism VAT falls only on final consumption so that fuels supplied to industry are to a great extent free of tax. In the UK and Ireland non-oil fuels carry no tax.

- 3.2. In addition to consumer taxes on energy, there is a two-way flow of funds between the energy industries and governments in the form of subsidies, corporate income taxes, local taxes, employment taxes, royalties, etc .. No rigorous analysis exists of the overall financial position of each industry and any such analysis would run into serious problems of definition. It is clear, however, that the petroleum industry is a substantial net contributor to national exchequers and that the coal industry is subsidized. The position of the gas and electricity industries is less clear, and appears to vary between member States.

4. Energy pricing policy

4.1. General considerations

The price of energy is clearly a vital policy instrument, but there is no simple formula for energy pricing. ...

.. Energy policy presents a whole series of dilemmas in relation to the optimum balance between fuels and between energy saving and fuel substitution. And over and above these problems, some of which are reviewed below, the needs of energy policy are not necessarily compatible with broader policy objectives in relation to economic development and price stability, income distribution, and the generation of government revenue.

4.2. Conservation and substitution

Energy is not a homogeneous product with a single price. A rise in the price of any single fuel will reduce demand for that fuel, but depending on the capacity and timescale for substitution, some of the reduced demand will reappear as demand for an alternative fuel. The range of substitutability is wide ; substitutes for motor fuels are very limited, but there is substantial capacity for instantaneous substitution between electricity and fossil fuels for space heating. Some progress in the reduction of external dependence has been achieved through the substitution of coal and nuclear energy for oil in electricity generation. Less satisfactory from the point of view of energy policy is the extensive substitution in much of Northern Europe of gas for oil for space heating purposes. The ratio of fuel prices to each other is therefore as important for energy policy as the absolute price of energy products.

4.3. The following table shows in simple terms how prices evolved, after allowance for inflation, in response to the increase in crude oil prices between 1973-78.

INDEX NUMBERS OF FUEL PRICES 1st JANUARY 1978

	1st January 1973 = 100						
	<u>D</u>	<u>F</u>	<u>I</u>	<u>NL</u>	<u>B</u>	<u>UK</u>	<u>IRL</u>
Domestic electricity	100	105	156	138	117	123	138
Industrial electricity	110	130	158	128	128	129	220
Domestic natural gas	128	105	143	93	109	84	n/a
Industrial natural gas	n/a	112	248	191	132	120	n/a
Domestic antracite	134	114	121	127	122	118	174
Industrial coal	138	125	90	87	162	160	n/a
Premium gasoline	104	123	147	95	82	105	136
Automotive diesel	108	116	63	79	86	101	73
Domestic heating oil	107	179	221	149	111	248	249
Heavy fuel oil	173	193	280	204	219	207	291

(OECD price data converted for inflation using implicit price deflator of GDP)

These figures need to be treated with caution. As suggested in paragraph 2 energy markets, especially for industrial fuels, often lack transparency and there can be wide variations in the price even to similarly placed customers in the same country. The choice of two dates at which fuel prices were, in historic terms, unusually low, could give a distorted impression. However in general terms these figures do provide a simple guide to the way in which energy prices in general, and the relative price of fuels have evolved in different ways in each member State. Among the most interesting conclusions are the following :

- a) While import prices for crude oil, as expressed in dollars, rose in real terms by around four times over the period 1973/78, increases in fuel prices of 200 % were the exception rather than the rule.
- b) In general, industrial prices rose more than domestic prices.
- c) In general, the real price of motor fuels had by 1978 fallen back to around its 1973 level through a reduction in the real burden of excise taxes and erosion of oil company profits. Since then there has been a sharp increase in the price of motor fuels which are now some 10 - 20 % in real terms above 1973 levels, despite a further reduction in the real burden of excise.
- d) In the domestic sector, there has been an incentive in every country other than Germany to switch from oil to natural gas, but increases in electricity prices have also been less than those for heating oil, and in some countries have been comparable to those for gas.
- e) In industry there has been an incentive to switch from oil to natural gas, but electricity has also increased its attractiveness. In the four countries (Germany, UK, France and Belgium) producing coal, increases in coal prices, though well below those for heavy fuel oil, were greater than those for gas or electricity.

5. Prices and energy policy objectives

A simple formulation of the objective of energy pricing policy is that energy should be priced at the level which encourages the optimum rate of development of energy resources world wide. But at a sector-by-sector level this poses a wide range of complex questions.

5.1. Oil

Non-conventional sources of oil (heavy oil, shale, tar sands) are competitive at today's prices, but are unlikely to be available in sufficient quantities to avoid substantial further increases in oil prices towards the end of the century. The question therefore arises as to what extent it would be prudent to anticipate this further price increase. In particular, there may be a need for a mechanism to ensure that real prices are maintained during any periods of excess supply on world markets.

Oil companies derive most of their profits and governments raise most of their taxes from the lighter distillates, especially motor fuels. However, price differentials between light and heavy products have been compressed since 1973. Recent work by the Commission on energy savings in the transport sector has suggested the need for regular and substantial revalorization of excises to promote saving in consumption.

On the other hand, it could be argued that it is in the transport sector that oil is employed at the highest levels of efficiency, since no realistic substitute is readily available. There is also the need to separate the requirement for revenue to meet road expenses from the energy argument. On this basis, while the overall burden of taxation on oil products should perhaps be restored to its 1973/74 level, there may be a case for shifting the burden from the lighter to the heavier products where there is greater scope for fuel switching and energy saving.

In particular, residual fuel oil is a by-product of the refining process which tends to be in surplus supply. Although there have been heavy increases in price since 1973, it is still priced very cheaply and this tends to shut out coal for industrial uses other than electricity generation. It could also constitute an incentive for the gas and electricity industries to sell to large consumers at promotional prices. There may therefore be a case for a tax on residual fuel oil to encourage investment in advanced refining techniques which break fuel oil down into lighter products.

....

5.2. Coal

There appears to be general agreement within the Community that the existing quasi-competitive pricing regime is the best means to maximizing domestic production without shutting out imports. But the position will need to be kept under review as the production and use of coal increases during the 1980's.

5.3. Gas

Gas is priced below world oil prices, thereby shutting out coal, hindering conservation of all fuels and creating a risk of new external dependence after production reaches its peak in the mid-1980's. The UK is moving towards higher gas prices and other Northern European countries are considering a similar policy. But there is a need to strike a balance between oil and gas prices so as to maximize conservation and inhibit a return to oil.

5.4. Electricity

Electricity is a heavy consumer of primary energy since two-thirds of the primary input is used in generation and distribution. On the other hand, electricity is often the only available medium for the transformation of low grade energies (such as low grade coal and many forms of renewable resources). Although efficiencies at the point of production are often low, electricity can be used by the customer at efficiencies up to 100 %. Electricity offers the best hope for increasing the use of coal and virtually the only channel for nuclear energy (the cheapest alternative form of energy which is at present capable of large-scale development).

But although coal and nuclear offer the best route out of oil in the medium term, the electricity generating industry will continue to depend on oil as its marginal (i.e. peak load) fuel well into the next century. So long as this is the case, electricity tariffs should not promote penetration in sectors (especially space heating) where the local combustion of the primary fuel used for generation offers a more efficient solution.

This creates a pricing policy dilemma. To what extent is it possible to price electricity in such a way as to provide a continuing strong market for the development of coal and nuclear-fired generation while at the same time providing adequate price incentives for the individual consumer to invest in energy efficiency and renewable resources such as solar heat ?

6. Community action to harmonize energy prices and taxes

- 6.1. It will be apparent from the foregoing that harmonization of pricing and taxation practice for energy within the Community will not be a simple process. A wide diversity of pricing practices, tariff structures and taxation policies have, for historical and technical reasons existed for many years. But since 1973 member States have tended to accentuate rather than to diminish these divergencies ; this gives rise to trade and economic distortions and is increasingly becoming an obstacle to harmonization in energy policy. Since the energy problem is now a major determinant of macro-economic performance, it is all the more essential that the Community should embark as soon as possible on the difficult, and inevitably, long-term task of harmonization of energy prices and taxes.
- 6.2. The first steps in this process must be to seek a degree of harmonization in pricing regimes, tariff structures and the framework for taxation. The only formal initiative taken by the Commission in this field so far is a draft directive (OJ N° C 92 - 31st October 1973 p. 36) to harmonize the structure of excise duties on mineral oils. This first step towards harmonization aimed to achieve common rules on scope, liability, coverage, deferment periods and exempted uses, but has made no progress since it was first tabled in 1973. It could however now form the basis for a new move towards harmonization. Some of the exemptions proposed at that time (especially those for heavy fuel oils and gas) will need to be re-examined in the light of energy policy objectives. In any case, this structural proposal would not resolve the problem posed for the harmonization of oil product prices by the existing important gaps in excise rates.
- 6.3. During 1979 the Community has introduced arrangements for the closer monitoring of the market in crude oil and petroleum products, and comprehensive surveys of pricing developments throughout are now published at frequent intervals. Considerable progress has also been made in the adoption of standard criteria for the measurement of electricity and gas prices and this preparatory work could form a basis for future coordination of pricing regimes and tariff structures. In particular :
- Gas : The Commission is consulting the different bodies involved in the pricing of gas in order to make proposals whose principal features could be :

- improved transparency of gas prices within the Community,
- adoption of uniform two-part tariff structures,
- some form of linkage with oil prices and elimination of subsidy.

Electricity : The Commission is working on harmonization proposals whose principal features could include :

- the adoption of uniform two-part tariff structures,
- publication of tariffs,
- elimination of promotional tariffs which permit the charging of unjustifiably low prices to large consumers,
- encouragement of multi-tier tariffs designed to promote off-peak consumption and load smoothing.

Oil : The Commission aims to pursue greater convergence in pricing policy for petroleum products.

6.4. Much of this work is of a technical character, though even here a variety of difficult policy questions arise. The opportunity will in any case arise at this stage to correct some of the more serious anomalies in pricing policy and points of divergence between member States.

6.5. But beyond this stage the Community should aim at a more ambitious level of cooperation in setting the level of energy prices in relation to world prices and other factors of production, and in determining the relative price of fuels. The work envisaged in paragraph 6.2., though an indispensable preliminary stage, will do no more than prepare the ground for an important new step towards a common energy policy.

Convergence in energy pricing and taxation is both a necessary condition for, and a key component of a truly coordinated response to the energy problem. But the issues raised at this more ambitious level are of general economic and social significance ; their resolution will require a general recognition by governments that energy policy will increasingly determine the constraints on progress towards broader objectives, and the mobilization of political will at the highest levels within the Community.

APPENDIX 1.1

CONSUMER PRICES AND TAXES FOR SELECTED FUELS
1979-1980

Prices are given below in EUA at current rates of exchange. For some purposes conversion at purchasing power parities could be more appropriate.

		<u>PREMIUM GASOLINE</u>				<u>EUA per 1,000 l</u>			
		<u>B</u>	<u>DK</u>	<u>D</u>	<u>F</u>	<u>IRL</u>	<u>I</u>	<u>NL</u>	<u>UK</u>
1/1/79	Pre tax	165.1	152.9	161.4	153.6	130.5	126.0	179.4	132.2
	After tax	413.8	411.3	377.3	478.5	298.6	437.8	424.5	258.3
1/1/80	Pre tax	247.8	187.7	205.7	228.6	221.2	206.1	222.6	229.4
	After tax	530.8	509.3	431.3	564.5	400.0	566.0	491.8	407.8
		<u>AUTOMOTIVE DIESEL</u>				<u>EUA per 1,000 l</u>			
		<u>B</u>	<u>DK</u>	<u>D</u>	<u>F</u>	<u>IRL</u>	<u>I</u>	<u>NL</u>	<u>UK</u>
1/1/79	Pre tax	142.9	129.4	151.6	121.7	137.3	109.5	133.6	152.9
	After tax	247.6	172.0	356.0	299.3	214.4	149.7	238.8	271.9
1/1/80	Pre tax	232.4	219.8	213.9	194.0	224.4	198.2	205.6	231.3
	After tax	350.2	311.0	430.2	383.2	310.8	250.6	322.9	429.6
		<u>DOMESTIC HEATING OIL</u>				<u>EUA per 1,000 l</u>			
		<u>B</u>	<u>DK</u>	<u>D</u>	<u>F</u>	<u>IRL</u>	<u>I</u>	<u>NL</u>	<u>UK</u>
1/1/79	Pre tax	120	105.6	130.5	109.2	110.0	102.6	111.6	115.3
	After tax	139.2	143.3	153.6	158.0	117.4	135.3	146.3	123.4
1/1/80	Pre tax	205.6	198.2	219.3	182.2	194.4	193.5	183.5	191.0
	After tax	229.7	285.1	255.4	243.7	201.0	245.3	231.0	201.1
		<u>RESIDUAL FUEL OIL (HIGH SULPHUR)</u>				<u>EUA per tonne</u>			
		<u>B</u>	<u>DK</u>	<u>D</u>	<u>F</u>	<u>IRL</u>	<u>I</u>	<u>NL</u>	<u>UK</u>
1/1/79	Pre tax	66.2	69.9	79.3	74.0	92.86	67.98	66.77	68.12
	After tax	68.7	85.0	85.2	74.2	99.62	68.85	72.34	76.54
1/1/80	Pre tax	116.6	128.3	130.2	139.3	149.3	132.8	114.3	125.3
	After tax	119.1	172.3	136.2	139.4	156.2	133.7	119.8	135.8

		<u>COAL FOR DOMESTIC CONSUMERS</u>				<u>EUA per ton pithead</u>
		<u>B</u>	<u>D</u>	<u>F</u>	<u>UK</u>	
1/1/79	Pre tax	94.6	96.1	81.8	63.9	
	After tax	100.2	107.6	96.2	63.9	
1/1/80	Pre tax	121.5	110.8	115.7	79.0	
	After tax	128.8	125.2	136.0	79.0	

		<u>INDUSTRIAL STEAM COAL</u>				<u>EUA per tonne pithead or cif port of entry</u>		
		<u>B</u>	<u>DK</u>	<u>D</u>	<u>F</u>	<u>I</u>	<u>NL</u>	<u>UK</u>
1/1/79	Pre tax	61.8	24.1	69.0	51.2	26.94	29.53	40.74
	After tax	65.5	28.9	77.3	60.2	32.71	35.19	40.74
1/1/80	Pre tax	75.1	23.0	73.2	68.2	25.79	37.18	53.02
	After tax	80.2	27.7	82.7	80.2	29.40	38.31	53.02

A TYPICAL

		<u>NATURAL GAS PRICES TO/DOMESTIC CONSUMER</u>					<u>EUA per GJ</u>	
		<u>B</u>	<u>DK</u>	<u>F</u>	<u>I</u>	<u>L</u>	<u>NL</u>	<u>UK</u>
1/1/79	Pre tax	4.153	6.6817	4.311	2.917	3.551	2.875	2.569
	After tax	4.406	8.0347	5.070	3.884	3.727	3.396	2.569
1/1/80	Pre tax	4.673	7.945	5.058	n/a	3.542	3.218	2.690
	After tax	4.953	11.416	5.948	n/a	3.718	3.802	2.690

ELECTRICITY PRICES FOR A TYPICAL DOMESTIC CONSUMER EUA per 100 Kwh

	<u>B</u>	<u>DK</u>	<u>D</u>	<u>F</u>	<u>IRL</u>	<u>I</u>	<u>NL</u>	<u>UK</u>
1/1/79 Pre tax	6.859	4.156	6.774	4.964	3.512	5.557	5.765	4.296
After tax	7.969	5.346	8.094	6.361	3.512	5.992	6.803	4.296

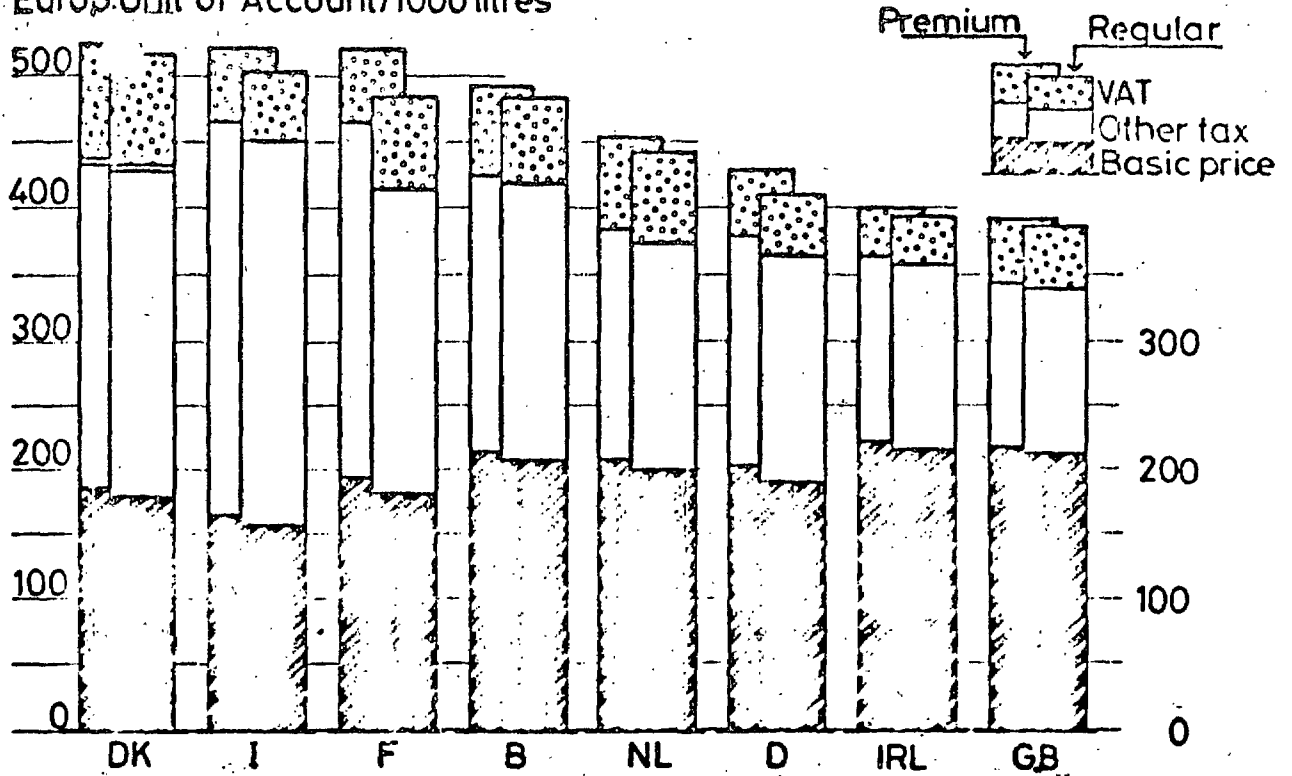
ELECTRICITY PRICES FOR A TYPICAL INDUSTRIAL CONSUMER EUA per 100 Kwh

	<u>B</u>	<u>DK</u>	<u>D</u>	<u>F</u>	<u>IRL</u>	<u>I</u>	<u>NL</u>	<u>UK</u>
1/1/79 Pre tax	4.363	3.347	4.426	3.694	3.103	3.258	4.171	3.100
After tax	5.061	4.085	4.956	4.344	3.103	3.714	4.920	3.100

Gasoline Prices (1979)

APPENDIX 2.1

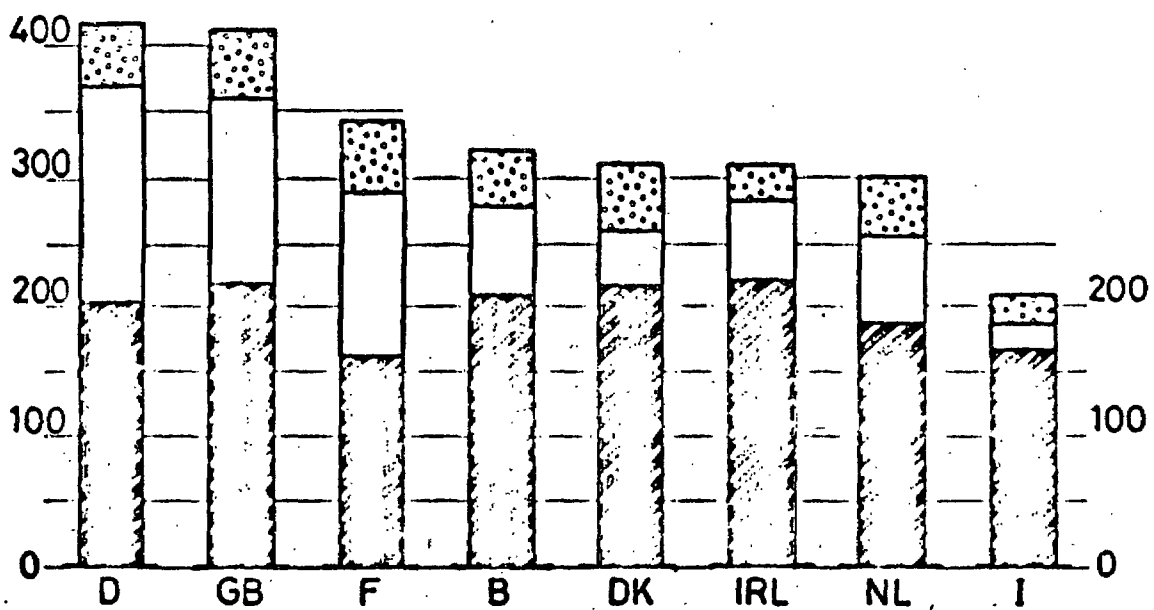
Europ. Unit of Account/1000 litres



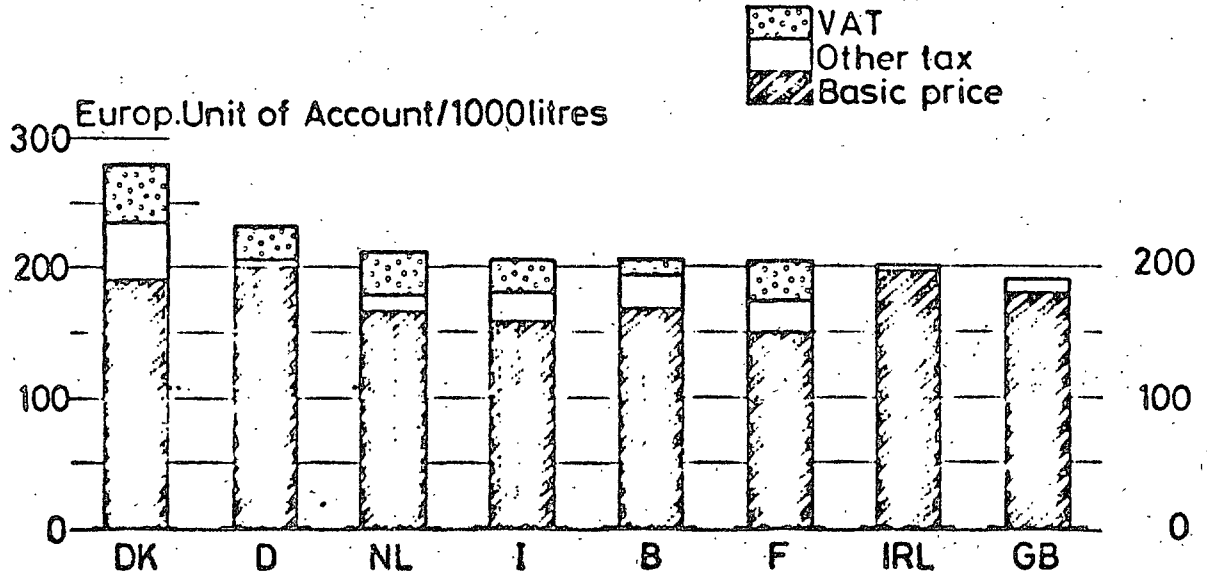
Automotive Gas Oil Prices (1979)

500

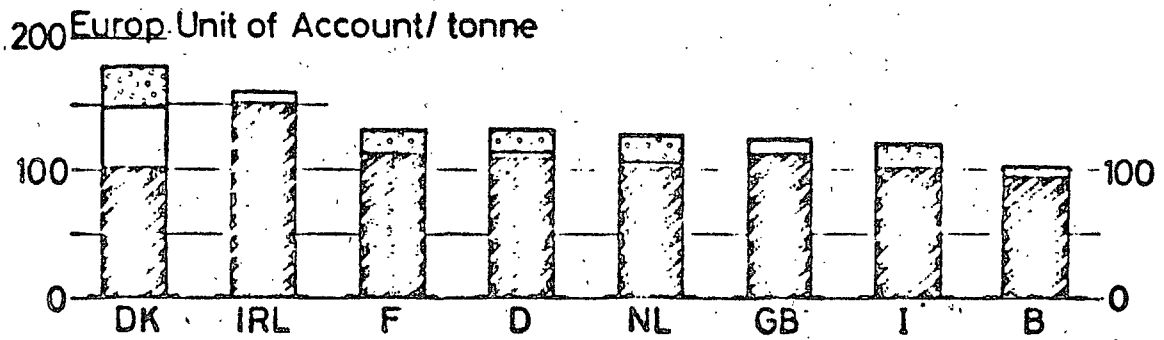
— Europ. Unit of Account/1000 litres



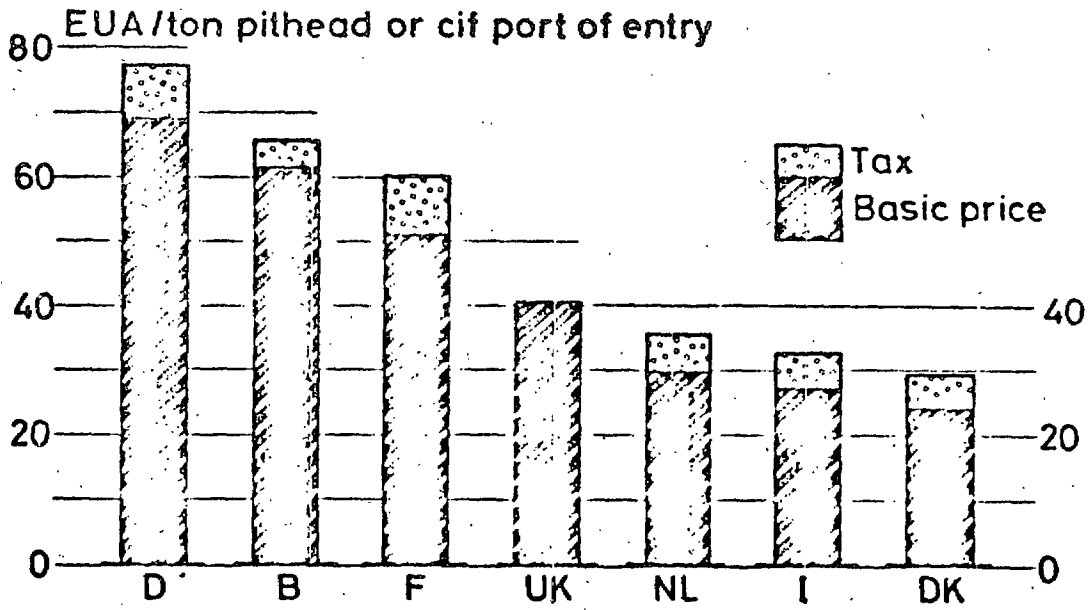
Domestic Gas Oil Prices (1979)



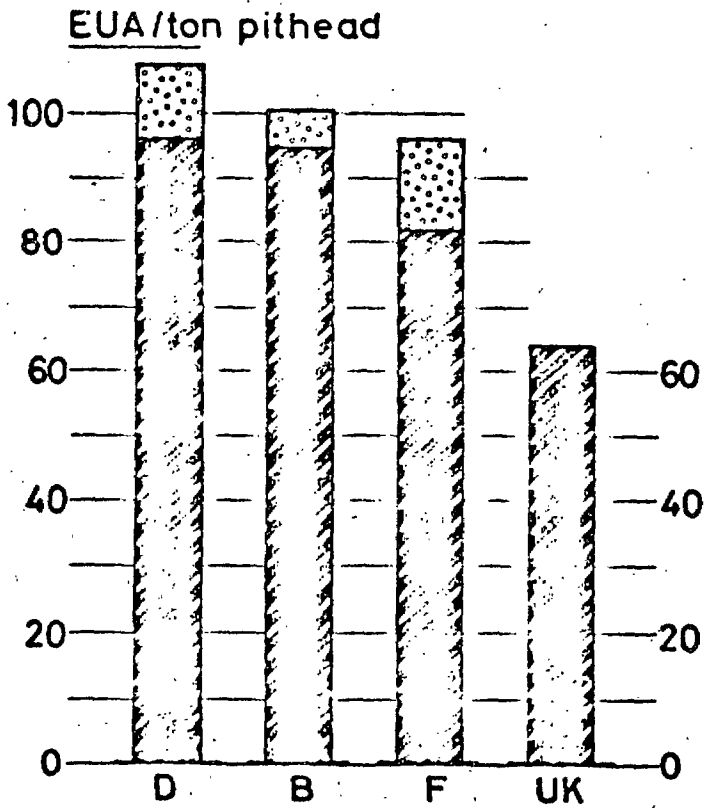
Heavy Fuel Oil Prices (1979)

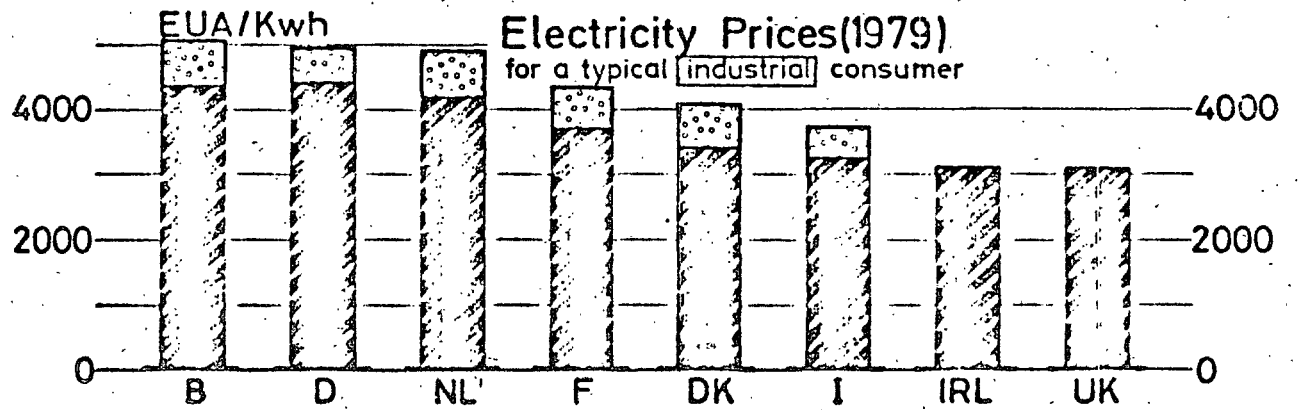
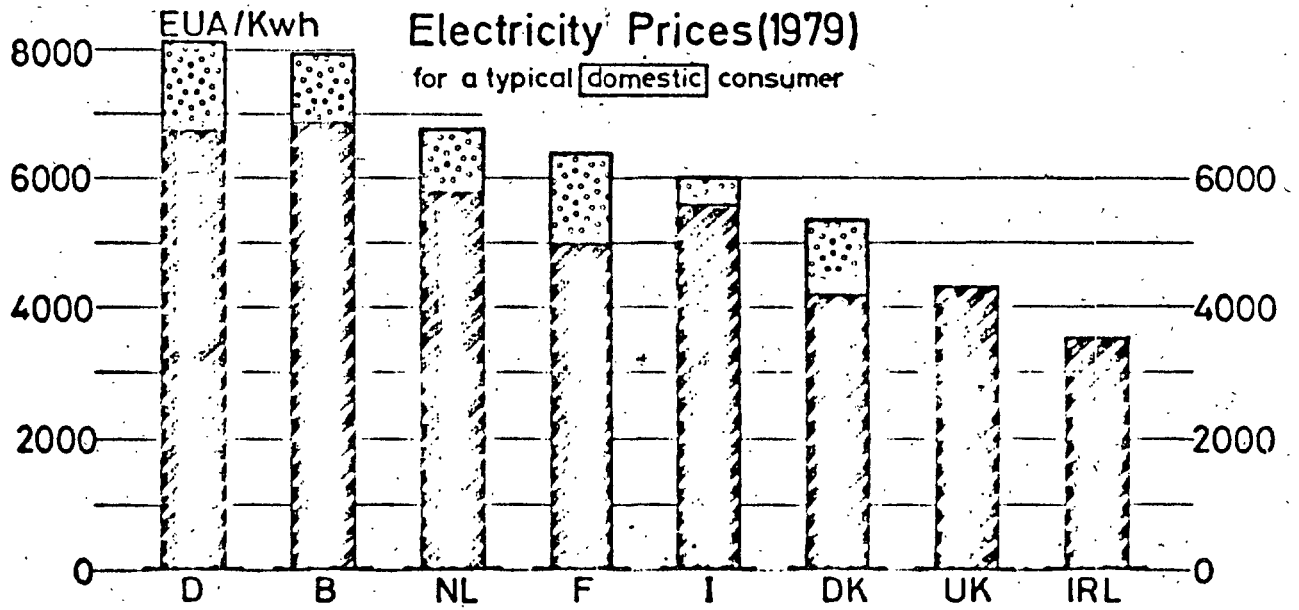
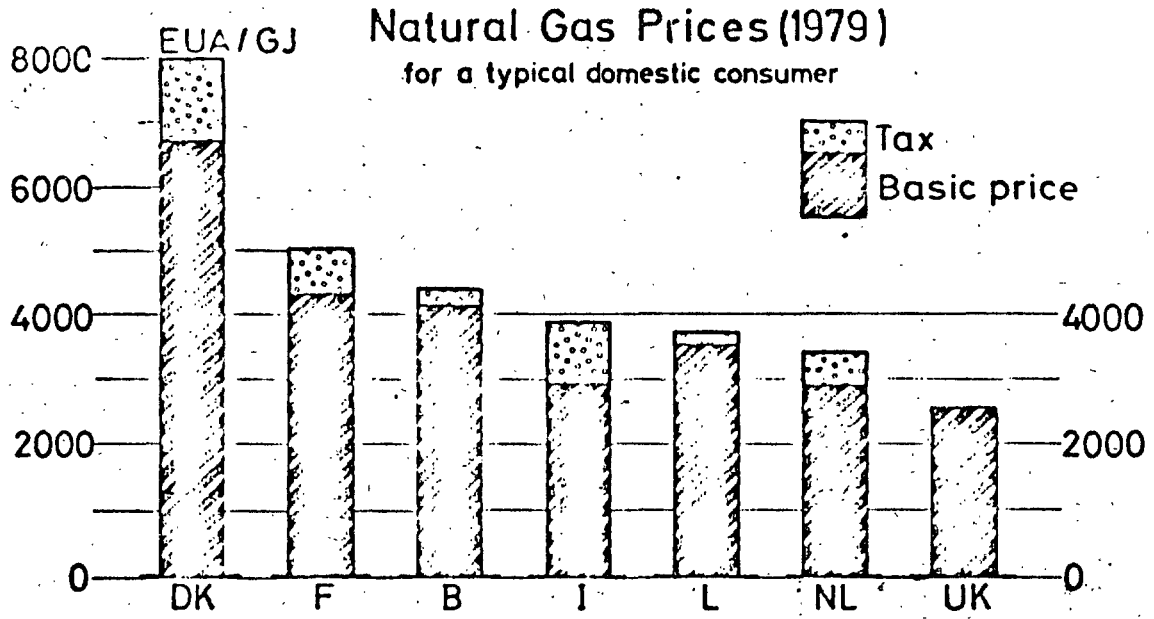


Industrial Steam Coal (1979)



Coal for Domestic Consumers (1979)





APPENDIX 3

ENERGY TAXATION

Incidence of taxes as % of pre tax price

		<u>B</u>	<u>DK</u>	<u>D</u>	<u>F</u>	<u>IRL</u>	<u>I</u>	<u>NL</u>	<u>UK</u>
Premium gasoline	1.1.73	308	123	198	233	178	287	247	178
	1.1.80	114	171	109	147	181	174	120	77
Automotive diesel	1.1.73	150	n.a.	205	162	215	334	347	205
	1.1.80	51	41	101	98	39	26	57	86
Domestic heating oil	1.1.73	42	19	19	30	5	30	4	11
	1.1.80	18	44	16	34	3	27	26	5
Residual fuel oil	1.1.73	28	15	34	18	5	15	31	22
	1.1.80	2	34	5	0.1	5	0.7	5	8
Domestic coal	1.1.80	6	n.a.	13	17	0	n.a.	n.a.	0
Industrial coal	1.1.80	6	20	13	18	0	14	1	0
Domestic gas	1.1.80	6	44	18	33	0	5 ^(*)	18	0
Industrial gas	1.1.79	6	-	13 ^(**)	18 ^(**)	0	14	18	0
Domestic electricity	1.1.79	16	29	19	28	0	8	18	0
Industrial electricity	1.1.79	16	20	12	18	0	14	17	0

(*) 1.1.79

(**) 1.1.78