

STATISTICAL OFFICE OF THE EUROPEAN COMMUNITIES



## GAS PRICES

---

1980 - 1982

---



**DE EUROPÆISKE FÆLLESSKABERS STATISTISKE KONTOR**  
**STATISTISCHES AMT DER EUROPÄISCHEN GEMEINSCHAFTEN**  
**STATISTICAL OFFICE OF THE EUROPEAN COMMUNITIES**  
**OFFICE STATISTIQUE DES COMMUNAUTÉS EUROPÉENNES**  
**ISTITUTO STATISTICO DELLE COMUNITÀ EUROPEE**  
**BUREAU VOOR DE STATISTIEK DER EUROPESE GEMEENSCHAPPEN**

L-2920 Luxembourg – Tél. 43011 Télex: Comeur Lu 3423  
1049 Bruxelles, Bâtiment Berlaymont, Rue de la Loi 200 (Bureau de liaison) – Tél. 7358040

**This publication is also available in French.**

**NOTE:** In the Statistical Annex, the continental practice of using a comma for the decimal point is adopted.

**For all information concerning this publication, contact:  
F. DESGARDES — Tel. Luxembourg 43011, ext. 3102**

**Reproduction is subject to acknowledgement of the source.**



## C O N T E N T S

- I - INTRODUCTION
- II - CONDITIONS AND METHODS
  - 1. Scope and locations
  - 2. Units of measurement of energy
  - 3. Standard consumers
  - 4. Definition of the price levels recorded
- III - UNITS OF VALUE
- IV - TAXES LEVIED ON GAS SALES
- V - GAS PRICES IN THE VARIOUS COUNTRIES
  - 1. FR Germany )
  - 2. France ) a) Situation in the gas industry
  - 3. Italy ) b) Taxes
  - 4. Netherlands ) c) Household prices - tariffs
  - 5. Belgium ) d) Household prices - analysis
  - 6. Luxembourg ) e) Industrial prices - tariffs
  - 7. United Kingdom ) f) Industrial prices - analysis
  - 8. Denmark )
- VI - CONCLUSIONS

### Statistical Annex

#### Tables

- 1 - 11 Household and industrial prices by location
- 12 Conversion factors for PPS and ECU, GDP price in-
- 13 Community comparison in ECU (current prices)<sup>dices</sup>
- 14 Community comparison in deflated PPS
- 15 General data on gas consumption (1980)



## I - INTRODUCTION

The present publication is an updating of gas prices in the Community up to and including 1982. It follows on from previous publications, which are still available :

GAS PRICES 1978 - 1980	EUROSTAT 1980	internal document
GAS PRICES 1976 - 1978	EUROSTAT 1979	cat. = CA 28-79-326
GAS PRICES 1970 - 1976	EUROSTAT 1977	cat. = CA 22-77-120

In order to make things easier for users, these volumes form a published series with the same layout. They also have similar definitions, methods and coverage and thus form a homogeneous set.

In order to avoid repetition, only the general outlines of the survey are set out below in the section entitled "Conditions and methods". If necessary, reference can always be made to the previous publications.

However, a number of changes have been made to the presentation of the text of this updated version.

As in the past, this study considers three aspects :

- firstly, description of the tariff systems currently in force on which the prices are based;
- secondly, taxes on gas sales;
- finally, the recording and analysis of price levels, with comments on recent trends.

The whole thing is rounded off by an international comparison, accompanied by a number of conclusions.

The survey on which this study is based was carried out directly by the SOEC and could not have been completed without the close cooperation of the gas companies, to whom we should like to express particular thanks.

## II - CONDITIONS AND METHODS

### 1. Scope and locations

The survey covers eight of the Member States of the Community and the prices were recorded in 19 towns or conurbations :

- Fr Germany : Düsseldorf
- France : Lille, Paris (1), Strasbourg, Marseille, Lyon, Toulouse;
- Italy : Milan, Turin, Rome;
- Netherlands : Rotterdam;
- Belgium : Antwerp, Brussels, Liège;
- Luxembourg : Luxembourg city;
- United Kingdom : London, Leeds, Birmingham;
- Denmark : Copenhagen.

In Greece, there is no piped gas network.

Prices for Ireland did not arrive in time to be included in this publication.

Three years are covered by this study :

1980 - 1981 - 1982.

The prices are recorded and calculated in accordance with the tariffs, conditions and rules in force at the beginning of each year. 1980 is included as a link with the previous study, and also enables any necessary corrections to be made to prices.

### 2. Units of measurement of energy

Four units of measurement are found in the current gas tariffs, i.e. :

- the Joule (Belgium)
- the kilowatthour (FR Germany, France)
- the m<sup>3</sup> (Italy, Netherlands, Luxembourg, Denmark) (2)
- the therm (United Kingdom, Ireland).

The use of the calorie and its derivatives is now prohibited.

With a view to standardization and simplification, the Joule (and its decimal multiples) was chosen by the SOEC as the common unit of measurement.

---

(1) Paris region.

(2) The m<sup>3</sup> is in turn defined by an energy content expressed in Joules.



The decimal multiples of the Joule are as follows :

Kilojoule (kJ)	=	1 000 Joules
Megajoule (MJ)	=	1 000 000 Joules
Gigajoule (GJ)	=	1 000 000 000 Joules
Terajoule (TJ)	=	1 000 000 000 000 Joules.

In the present study, gas prices are expressed in terms of monetary units per Gigajoule.

The table below can be used for conversion from one unit of measurement to another :

	GJ	GWh	th
1 Gigajoule :	1	0.0002777	9.4781
1 Gigawatt hour :	3 600	1	34 120
1 therm :	0.1055	0.0000293	1

In addition, as a guide, one Gigajoule of gas may be said to be approximately equivalent to 35 kg of saleable coal and 25 kg of light fuel oil or heating oil.

Finally, the unit of energy used in this study is measured on the basis of the gross calorific value (GCV), as is the practice in the gas industry and gas tariffs. This method of measurement departs from that used in energy statistics and for other sources of energy, where the net calorific value (NCV), which is closer to the energy that can actually be used by the consumer, is always used. For gas, the difference between gross and net calorific value is around 10 %. The gas prices shown in this study in GJ (GCV) can thus be converted into GJ (NCV) by applying a factor of 1.1.

### 3. Standard consumers

The survey is based on the system of standard consumers, i.e. the prices are recorded for certain levels of gas consumption and under certain conditions of supply, chosen as being representative of the population of gas consumers. These standard levels of consumption remain fixed from one year to the next and for all the countries, this being one of the primary conditions for spatial and temporal comparability of prices.

For domestic uses, the standard consumers are determined by the annual volume of consumption. Five standard consumers, coded D<sub>1</sub> to D<sub>4</sub> and defined as follows, have been taken :

	ANNUAL CONSUMPTION	EQUIPMENT
D <sub>1</sub> (1)	8.37 GJ (i.e. 2 326 kWh)	cooking and water heating
D <sub>2</sub>	16.74 GJ (i.e. 4 652 kWh)	
D <sub>3</sub>	83.7 GJ (i.e. 23 260 kWh)	cooking, water heating and central heating
D <sub>3b</sub>	125.6 GJ (i.e. 34 890 kWh)	
D <sub>4</sub>	1047 GJ (i.e. 290 750 kWh)	block central heating for at least 10 dwellings

For industrial uses, an important factor apart from the annual quantity consumed is the regularity with which the consumer takes gas from the network. This is the concept of modulation (or load factor). The daily modulation indicates the number of days it would take to reach the annual consumption if the maximum were consumed each day. The hourly modulation indicates the number of hours it would take to reach the annual consumption if the maximum were consumed each hour. These factors thus determine the peaks in consumption or the consumer's maximum daily and hourly offtake.

For example, in the case of a user who consumes 41 860 GJ a year, a load factor of 200 days means that the maximum daily offtake is 209 GJ (41 860 divided by 200), and a load factor of 1 600 hours means that the maximum hourly offtake is 26 GJ (41 860 divided by 1 600).

Seven standard industrial consumers, coded I<sub>1</sub> to I<sub>5</sub> and defined as follows, have been taken :

	ANNUAL CONSUMPTION	LOAD FACTOR
I <sub>1</sub>	418.6 GJ (i.e. 116 300 kWh)	no load factor laid down
I <sub>2</sub>	4 186 GJ (i.e. 1 163 000 kWh)	200 days
I <sub>3-1</sub>	41 860 GJ (i.e. 11.63 GWh)	200 days 1 600 h
I <sub>3-2</sub>	41 860 GJ (i.e. 11.63 GWh)	250 days 4 000 h
I <sub>4-1</sub>	418 600 GJ (i.e. 116.3 GWh)	250 days 4 000 h
I <sub>4-2</sub>	418 600 GJ (i.e. 116.3 GWh)	330 days 8 000 h
I <sub>5</sub>	4 186 000 GH (i.e. 1 163 GWh)	330 days 8 000 h

(1) For the United Kingdom there is an additional standard consumer, i.e. 33.5 GJ (9 300 kWh).

It can be seen that certain standard consumers have the same load factor for different volumes of consumption or, conversely, different load factors for the same volume of consumption; the reason for this is to enable the effect of these conditions of supply on the level of prices to be observed. The higher the load factor (in days or hours) the more regular the offtake of gas, thus in some cases, enabling the consumer to obtain favourable prices.

Moreover, the load factor gives some idea of the use made of installations consuming gas. Thus, a very high load factor, e.g. of 8 000 hours, is obviously equivalent to an installation functioning practically non-stop, day and night, throughout the 8 760 hours in the year.

All the prices recorded in this study for standard industrial consumers normally relate to non-interruptible supplies, i.e. the seller of gas must supply the quantities demanded by the consumer (whose peaks are determined by the modulation laid down for standard consumers). In some cases there are interruptible contracts, under which the seller of gas can reduce the quantities supplied to the consumer at certain peak times when the network is overloaded. In return for this reduction of supply, the customer pays a reduced price.

It should be noted finally that the standard industrial consumers referred to in this study include neither power stations nor industries using gas for non-energy purposes, e.g. the chemical industry.

#### 4. Definition of the price levels recorded

The prices include meter rental, the standing charge, the commodity rate, etc. They are shown per unit of gas sold, i.e. per Gigajoule (GJ, GCV). This unit price is obtained by dividing the total amount paid by the user for the level of consumption in question by the number of units (GJ) of gas consumed.

In each case, three values are shown :

- the price net of tax
- the price excluding VAT but including all other taxes
- the selling price (inclusive of all taxes).

The taxes referred to above are those levied directly on the sale of gas to the consumer. The taxes levied prior to this, such as direct company tax or income tax (which obviously contribute to the manufacturing costs), are not shown separately in this study.

Further information on taxes is given in chapter IV.

The results for each country are shown in national currencies at current prices, i.e. at face value.

For the purposes of international comparison, it was necessary to use a representative common monetary unit which would create a minimum of distortion in both space and time. Accordingly, the present study uses the purchasing power standard (PPS), which is outlined and explained in the following section.

It was also considered useful to include international comparison tables in European Currency Units (ECU).

### III. UNITS OF VALUE

To enable comparisons between countries, prices expressed in national currencies need to be converted to a common unit. In this study two common units are used : the European Currency Unit (ECU) and the Purchasing Power Standard (PPS).

#### a) The European Currency Unit (ECU)

The ECU is based on a 'basket' of the currencies of nine of the Member States of the Community, converted at market exchange rates. It is defined as the sum of the following fixed amounts :

				DM 0.828
UKL 0.0885	FF 1.15	LIT 109	HFL 0.286	BFR 3.66
LFR 0.14	DKR 0.217	IRL 0.00759.	Greece is due to be introduced into the ECU by the end of 1985.	

The conversion rates for ECU are given in a table in annex.

The ECU reflects fluctuations in exchange rates and is well adapted to measure foreign trade prices and the values of international flows.

A comparison in ECU, therefore, takes the viewpoint of a tourist who buys goods and services in a foreign country, after changing his money at a bank. This differs from the SPA viewpoint which is one of a consumer who buys goods and services in his own country with the national currency.

The ECU also has the inconvenience that its definition changes when a new currency is introduced and that it is not coherent with the Gross Domestic Product price index, which makes it difficult to deflate.

#### b) The Purchasing Power Standard (PPS)

The PPS is a reference unit for which the ratios between the different national currencies are proportional to the purchasing power parities (PPP) between these currencies.

The PPP, which are calculated for all the uses of the GDP, reflect the ratios between price levels in the different countries; they indicate the amount of a national currency required to buy in each country the same basket of goods and services which are included in the uses of the GDP. In this present publication only the PPP at GDP level are used.

The level of the PPS has been arbitrarily fixed so that in 1975 the GDP of EUR 10 expressed in PPS coincides with the same GDP in ECU.

It should be noted that the level at which the PPS is fixed does not influence the comparison between countries. When prices are converted to PPS using the GDP parity the following judgement is possible:

if one Gigajoule of energy costs 10 PPS in country A and 5 PPS in country B, this means that after eliminating the differences between the general level of prices in the two countries, this Gigajoule of energy is twice as expensive in country A than in country B.

This judgement is independant of market exchange rates and therefore, is not influenced by fluctuations in the same, brought about by movements of capital, speculation, political decisions, etc.

The conversion rates for the years covered by this study are given in a table in annex.

### c) Prices in "constant" PPS

When current prices for a given year are converted to PPS with the help of the current PPP for the same year, comparisons between countries have the significance mentioned above (point b); however, the comparison in time which one can derive for each country has little interest.

Firstly, it should be noted that the current parities for each year between each currency and the PPS are the result of an extrapolation obtained by multiplying the parities for the base year by the GDP price index for each country and dividing them by the community GDP index.

The latter being incorporated in the extrapolated parity for each country, it may be eliminated without affecting the result of the comparison between countries.

By eliminating the community index, the application of the extrapolated parities means that for each country the prices for each year are divided by the GDP price index of the country (i.e. the prices are deflated) and are converted to PPS using the parity for the base year.

Therefore the comparison between countries is not affected by eliminating the community GDP index, and comparisons in time have taken on a new and interesting significance.

In effect, when the price of a product in a given year, deflated by the GDP price index for the same country and converted to PPS using the parity for the base year, is divided by the price in the base year also converted to PPS using the same parity, a relative price index is obtained, i.e. the ratio between the index of the price concerned and that of the GDP.

For this reason it is preferable to present a table of deflated prices using the GDP price index and converted to PPS using the PPP of the base year. From this table comparisons may be made between countries, giving the same results as would be obtained using current prices and current PPP; at the same time this table may be used for comparisons in time at national level (corresponding to relative indices).

d) Price series

On the basis of the preceding descriptions, the results of this survey of Community prices are given in three forms :

- 1) a series at current prices in the national currency for each country;
- 2) a series in current ECU using the average conversion rates for January of the year concerned;
- 3) a series in 'constant' PPS (base year 1975) which allows comparisons in time and space to be made.

IV - TAXES LEVIED ON GAS SALES

## 1. VALUE-ADDED TAX (VAT)

In seven of the countries of the Community gas sales are subject to VAT. As can be seen in the following table the rates vary widely from one country to another :

	% of price before VAT		
	Jan. 1980	Jan. 1981	Jan. 1982
F.R. Germany	13	13	13
France	17.6	17.6	17.6
Italy (households)	6	8	8
Italy (industry)	14	15	15
Netherlands	18	18	18
Belgium	6	16	17
Luxembourg	5	5	5
Denmark	20.25	22	22

Gas sales in the United Kingdom and Ireland are zero-rated.

VAT is generally deductible in the case of industrial and commercial consumers.

## 2. OTHER TAXES

a) Italy

Natural gas sold for household uses is subject to a consumption tax. At the beginning of March 1980 the rate of this tax was reduced from LIT 36.50 per m<sup>3</sup> to LIT 30 per m<sup>3</sup>.

This tax is also applied to manufactured gas in proportion to the percentage of natural gas used in its manufacture.

The consumption tax on the manufactured gas included in this study is as follows :

	<u>Milan</u>	<u>Rome</u>	
Jan. 1981	12.17	10.52	LIT/m <sup>3</sup>
Jan. 1982	12.31	10.52	LIT/m <sup>3</sup>

The differing rates are due to the different compositions of the gases.

Since November 1980 (law no. 784) domestic consumers in the south of Italy ("Cassa per il Mezzogiorno" zone) are exempt from this consumption tax.

This tax is included in the price on which VAT is levied.

b) Netherlands

A special environment levy is charged on all consumption at a rate of 0.03 cent per m<sup>3</sup> in 1981 and 0.05 cent per m<sup>3</sup> in 1982.

This tax is also subject to VAT.

c) Denmark

In August 1979 a consumption tax on piped gas with a gross calorific value of less than 23 MJ/m<sup>3</sup>, which is the case in this study, was introduced. The original rate was 20 øre per m<sup>3</sup> but this was reduced to 16 øre per m<sup>3</sup> from 30th June 1980.

This tax is included in the basis of assessment of VAT and is deductible when VAT is deductible.



V. GAS PRICES IN THE VARIOUS COUNTRIES

1. FR GERMANYa) Situation in the gas industry

Several hundred gas undertakings operate in the FR Germany and may be classified into three categories :

	number
- producers of natural gas	4
- gas transporters (Ferngasgesellschaften)	9
- gas distributors	463

The producers and transporters sell gas to certain large consumers and also supply the distributors.

The latter are therefore mainly retailers, although 90 of them also produce gas.

Gas sales are made up as follows :

%

SELLERS	BUYERS					TOTAL
	Industry and power stations	Households	Commerce and handi-crafts	Government departments	Heating stations and others	
Natural gas producers	7	-	-	-	0	7
Gas transporters	30	-	0	0	0	30
Distributors	26	24	5	4	4	63
TOTAL	63 <sup>(1)</sup>	24	5	4	4	100

(1) Including 30% power stations.

In 1980 the number of gas consumers was as below :

	1 000n	Standard consumers
Households,	7 600	D <sub>1</sub> D <sub>2</sub>
of which: tariffs	(4 500)	D <sub>3</sub> D <sub>4</sub>
special contracts	(3 100)	I <sub>1</sub> I <sub>2</sub>
Commerce, small industries	31	-
Government departments	35	I <sub>3</sub> I <sub>4</sub> I <sub>5</sub>
Industry	17	-
Others	3	-

In addition, more than 500 000 households were heated by heating stations run on gas.

The majority of customers receive gas via the distributors. The producers and transporters supply only a small number of large consumers directly: 50 power stations, 1 400 industrial companies and around 1 000 government departments.

In 1980 natural gas dominated the market with 97% of consumption, as against 3% for manufactured gas (not including coke-oven and blast-furnace gases, which are used by their manufacturers). This study therefore refers only to natural gas prices.

As regards the sources of supply of natural gas, the following table shows the decline in supplies from the Netherlands to the benefit of imports from third countries :

	1979	1980	1981
domestic production	34%	30.5%	33%
imports from the Netherlands	38%	37%	32%
imports from the USSR	16%	17%	20%
imports from Norway	<u>12%</u>	<u>15.5%</u>	<u>15%</u>
	100%	100%	100%

b) Taxes

Taxes are treated separately in Chapter IV.

c) Household prices - tariffs

In accordance with German law, several two-part tariffs are offered to the smallest household consumers (types D<sub>1</sub> D<sub>2</sub> in this study), with an increasing standing charge and a decreasing commodity rate. These tariffs are published.

By way of example, the tariffs applied in Düsseldorf are as follows :

	Standard consumer	Standing charge DM/year	Commodity rate DM/m <sup>3</sup>
Beginning of 1981	D <sub>1</sub>	54	0.90
	D <sub>2</sub>	150	0.54
Beginning of 1982	D <sub>1</sub>	70.20	1.17
	D <sub>2</sub>	195	0.70

In Düsseldorf the energy content of the gas changed with effect from 1 November 1980, with a slight increase to 1 m<sup>3</sup> = 9.8576 kWh or 0.035487 GJ (GHV). The tariffs were revised at the same date.

The largest household consumers (types D<sub>3</sub> and D<sub>4</sub> in this study) are supplied under the system of special contracts<sup>4</sup> (Sonderverträge). For example, in Düsseldorf these contracts are based on an annual standing charge and a single commodity rate for individual heating (standard consumer D<sub>3</sub>), whereas for collective heating (D<sub>4</sub>) the standing charge is replaced by a charge proportional to the rating<sup>4</sup> of the boiler.

By analogy with the regulations applying to electricity prices, there is a minimum price limit which cuts across the degressivity curve. In Düsseldorf this price limit, which amounted to 69 Pf/m<sup>3</sup> in 1982, applies to standard consumer D<sub>3b</sub>.

The contracts for all household uses are annual ones, renewed by tacit agreement. In Düsseldorf, for example, the meters are read once a year and a final invoice is sent. The customer, who has already made five lump-sum payments - one every two months - then pays the balance.

The tariffs and the terms of the contracts are amended at the instigation of the distribution companies.

As a rule, the changes are made in October or November.

#### d) Household prices - analysis

The prices for Düsseldorf are given in Table 1 in the annex. For various reasons it was not possible for the survey to include all of the towns covered by the previous studies. It is hoped that this shortfall will be made up in the next study.

Domestic consumers in Düsseldorf were subjected to large price rises between 1980 and 1982, ranging from 57.5 % increase for the smallest to 80 % for the largest. This is not surprising as, before 1980, the pre-VAT price of gas in Düsseldorf had not increased since 1976.

These varying price increases have led to a decrease in tariff degression. This degression (reduction in unit price as consumption increases from 8.37 GJ/year to 1 047 GJ/year) was 58 % in 1982, compared with 64 % in 1980.

A comparison between the selling price of gas and the Gross Domestic Product (GDP) price index shows that since 1975 gas prices have risen by considerably more than prices for all goods and services, despite being almost stagnant for 4 years.

1975 = 100

	GDP price index	selling price				
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>3b</sub>	D <sub>4</sub>
1980	121.0	134.9	140.5	142.3	139.2	146.4
1981	126.2 *	163.4	170.4	184.7	185.7	214.8
1982	131.8 *	212.5	212.1	230.2	238.0	263.4

\* estimated

e) Industrial prices - tariffs

Except in the case of the smallest non-domestic consumers (standard consumer I<sub>1</sub> in this study), who have two-part tariffs similar to those for households, there are no published tariffs for industry in the FR Germany. Supplies are made under the contract system.

These contracts are based on three components :

- fixed annual standing charge, independent of consumption (Messpreis);
- offtake charge, which generally depends on the maximum daily offtake (Leistungspreis);
- commodity rate, in most cases a single price per unit consumed (Arbeitspreis).

More than one commodity rate may be charged, depending on the total volume of consumption during the year.

The contracts run for a year and are renewable by tacit agreement. The terms can be modified at the instigation of the gas seller. As a rule, any changes are made in October or November.

There are also "interruptible" contracts for large industrial consumers (type I<sub>4</sub>). The gas supply is interrupted by the seller, who must give prior notice.

To give some idea of the terms of these special contracts, in Düsseldorf supplies may be interrupted for between 20 and 30 days a year. In return, the consumer is exempted from paying the offtake charge. For standard consumer I<sub>4-2</sub>, for example, this represents a reduction of around 10% in 1982.

f) Industrial prices - analysis

The prices are given in Table 1 in the annex. In Düsseldorf large price rises are noted between 1980 and 1982, ranging from an increase of around 67 % for the small industrial consumers to over 72 % for the largest consumers. For contract consumers the increases were greater during 1981 than during 1980. Degression has been reduced slightly. The reduction in unit price as consumption increases from 418.6 GJ/year to 418 600 GJ/year i.e. 1 000 times greater, was 31 % in 1980 and 29 % in 1982.

For industrial consumers in Düsseldorf, improving the modulation (reducing the maximum daily offtake) has a better effect on prices than increasing the volume consumed. For example, for a consumer with a consumption of 41 860 GJ per year, an increase in modulation from 200 days to 250 days will result in a 3.6 % price reduction, whereas increasing consumption 10-fold to 418 600 GJ results in a reduction of only 0.5 %.

A comparison between the selling price of gas in Düsseldorf and the Gross Domestic Product (GDP) price index reveals that since 1975 gas prices for industry have risen by considerably more than prices for all goods and services. In real terms therefore gas has become more expensive.

1975 = 100

	G.D.P. Price index	selling price in Düsseldorf					
		I <sub>1</sub>	I <sub>2</sub>	I <sub>3-1</sub>	I <sub>3-2</sub>	I <sub>4-1</sub>	I <sub>4-2</sub>
1980	121.0	119.5	179.1	175.9	173.7	200.2	199.2
1981	126.2 *	158.7	218.0	215.4	214.9	247.6	248.8
1982	131.8 *	200.4	299.5	299.5	297.4	343.6	343.8

\* estimated

FRANCEa) Situation in the gas industry

In France gasworks gas has virtually disappeared from the market and this study therefore covers only natural gas.

The breakdown of natural gas sales in 1980 and 1981 is as follows:

%

CUSTOMERS	SELLERS					TOTAL
	(1) Gaz de France	(2) Private companies and 'regies'	(3) Société Gaz du Sud- Ouest	(4) CEFFM CEFEM	(5) SNRA (P)	
Domestic uses (individual and collective)	33.2	1.2	-	-	-	34.4
Industry	36.9	0.4	5.7	5.1	1.5	49.6
Public power stations (EDF)	0	-	0	0	3.2	3.2
Commercial uses and other uses	12.0	0.8	-	-	-	12.8
TOTAL	82.1	2.4	5.7	5.1	4.7	100

(1) Represented in this study by Toulouse (except I<sub>4</sub> I<sub>5</sub>), Lille, Paris, Lyon and Marseille

(2) Represented in this study by Strasbourg

(3) Represented in this study by Toulouse (I<sub>4</sub> I<sub>5</sub>)

(4) CEFEM = Compagnie française du méthane

(5) SNEA (P) = Société nationale Elf Aquitaine-Production.

The national enterprise Gaz de France thus dominates the domestic and industrial market. Its direct sales of gas are broken down as follows:

	1980	1981	%	
			Standard consumers	
Domestic uses: heating tariffs	26.8	26.0	D <sub>3</sub>	D <sub>3b</sub>
Domestic uses: other tariffs	4.9	3.6	D <sub>1</sub>	D <sub>2</sub>
Collective heating	9.9	10.2	D <sub>4</sub>	
Commercial and similar uses	15.0	14.6	I <sub>1</sub>	I <sub>2</sub>
Industry	43.4	45.6	I <sub>3</sub>	I <sub>4</sub> I <sub>5</sub>
	100	100		

The total number of customers is 8 200 000, broken down as follows:

{ households: heating tariffs	3 200 000
{ households: other tariffs	4 650 000
{ commercial and similar uses	300 000
{ industry	16 000

Supplies of natural gas are diversifying as regards both origin and point of entry:

	<u>1980</u>	<u>1981</u>
	%	%
National production (Sud-Ouest	28.1	25.5
{ Netherlands	37.5	31.0
{ FR of Germany	3.9	3.8
Imports { USSR	13.2	15.0
{ Norway	9.3	9.8
{ Algeria	7.9	14.9
	<u>100</u>	<u>100</u>

#### b) Taxes

Taxes are dealt with in Chapter IV.



c) Household prices - tariffs

The tariffs for 'retail' or 'semi-wholesale' sales are of the simple two/part type with a standing charge and a rate for the gas consumed. The standing charges are standardized throughout the country. The commodity rate is uniform for the smallest household consumers (cooking and hot water) and has a limited number of levels for larger consumers (heating), depending on the region. As an example, the table below shows the tariff components applicable in January 1982 in the cities chosen for the survey (Paris, Lille, Lyons, Marseilles, Toulouse) which are supplied by Gaz de France:

Standard consumer		Tariff	Standing charge FF/year	Commodity rate	
				C/kWh	FF/GJ
D <sub>1</sub>	D <sub>2</sub>	B <sub>0</sub>	168.12	20.57	57.14
D <sub>3</sub>	D <sub>3b</sub>	3 Gb	959.40	12.97	36.03
D <sub>4</sub>		B <sub>2</sub> heating	1 936.08	12.59	34.97

For the tariffs 3Gb and B<sub>2</sub> - heating higher commodity rate levels are applied in certain regions which are some distance away from the transport grid connecting the country's natural gas supply points:

	Tariff 3 Gb (FF/GJ)	Tariff B <sub>2</sub> - heating (FF/GJ)
Clermont-Ferrand, Limoges, Montpellier	36.64	35.75
Besançon	37.58	36.53

Tariff B<sub>2</sub> applies to collective domestic heating (block central heating of apartments) and also to commercial and similar uses (standard consumers I<sub>1</sub> and I<sub>2</sub> in this study).

d) Household prices - analysis

The prices are given in tables 2 - 4 in the Annex. Between 1980 and 1982 Gaz de France domestic prices increased by between 34 % for the smallest consumers and 57 % for the largest consumers. Strasbourg suffered larger increases, from 48 % for the smallest consumers to 79 % for the largest, which has left Strasbourg more expensive than the rest of France, for all standard consumers. Tariff degression for Gaz de France has decreased from - 59.4 % in 1980 to - 52.3 % in 1982.

A comparison between the selling price of gas, and the Gross Domestic Product (GDP) price index gives the following results:

1975 = 100

	GDP price index	Selling price - Paris				
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>3b</sub>	D <sub>4</sub>
1980	162.4	158.6	160.1	220.1	181.6	166.6
1981	181.6*	179.4	183.2	259.1	217.3	198.0
1982	204.6*	212.2	219.0	322.4	274.9	261.8

\* estimated

It can be seen that prices for small consumers (D<sub>1</sub>, D<sub>2</sub>) developed more or less in line with the GDP price index, which means<sup>2</sup> that price increases only compensated for monetary devaluation. However this is not the case for those who use gas for heating (standard consumers D<sub>3</sub> and D<sub>4</sub>); their gas prices always increased by more than the GDP price<sup>4</sup> index, which means that gas has become more expensive not only in current terms but also in real terms.

e) Industrial prices - tariffs

For the cities chosen for this study the tariffs differ with the seller:

Lille, Paris, Lyons, Marseilles (I <sub>1</sub> to I <sub>5</sub> ),	
Toulouse (I <sub>1</sub> , I <sub>2</sub> , I <sub>3</sub> ):	Gaz de France
Toulouse (I <sub>1</sub> , I <sub>5</sub> ):	Société du Gaz du Sud-Ouest
Strasbourg: <sup>4</sup>	municipal company
	Gaz de Strasbourg

Gaz de France has two types of tariff, namely type B<sub>2</sub> - heating for 'semi-wholesale' sales (I<sub>1</sub>, I<sub>2</sub>) and type S or subscription tariffs for large industrial consumers (I<sub>3</sub>, I<sub>4</sub>, I<sub>5</sub>).

The B<sub>2</sub> - heating tariff is the same as that which was explained in chapter C.

The tariffs for large industrial consumers ( $I_3, I_4, I_5$ ) have a more complex structure than those described above: they are the subscription tariffs, known as S tariffs.

The S tariffs which are now in force were introduced as from January 1979. They now cover virtually all industrial customers.

These subscription tariffs are made up of three components:

- an identical annual subscription charge for every point on the grid;
- a monthly standing charge based on the daily demand (kWh/day) which the customer has requested;
- a commodity charge per kilowatt hour, with differing rates for two blocks of consumption.

These tariffs have two versions corresponding to the type of network to which the customer's installations are connected, namely the SR tariff for installations connected to the public distribution network and the ST tariff for installations connected directly to the transmission grid.

A single tariff is applied to the major interconnected transmission routes linking the country's sources of gas; prices for the minor routes are obtained by adding the charges specific to each one to this tariff (system of tolls).

The tariffs refer to an index N which applies to all the tariff components.

The index N is given by the formula:

$$N = 50 \frac{F}{F_0} + 50 \frac{C}{C_0}$$

with  $C_0 = 204$ ,  $F_0 = 119.10$  (values of C and F on 31 January 1959).

C represents the wholesale price of French raw coal as published by the Institut National de la Statistique et des Etudes Economiques (INSEE);

F represents the price in Francs per tonne of N° 2 heavy fuel oil calculated as follows:

$$F = 375.32 F_u/283.$$

$F_u$  refers to the index of N° 2 heavy fuel oil prices, published in the Bulletin Officiel du Commerce et de la Concurrence, for the last day of the month to which N applies.

The basic tariff components which appear in the contracts correspond to a value of 426 for the index N.

According to the economic conditions of January 1982, the value of N is 905.5. However, actual prices are not the result of the free application of this index, but result from registered price lists. For example in January 1982, actual prices are obtained by applying to the elements of the tariff (N=426) the applied value  $N_a = 608.6$  plus an increase of 2.417 c/kWh on the commodity rates (i.e. 6.7139 FF/GJ).

The applied price resulting from this must never be greater than the price which would result from the free application of the terms of the contract.

If Pref is defined as the reference price (N = 426), the following inequality must always be observed:

$$\text{Pref} \times \frac{N_a}{426} + \text{increase} \leq \text{Pref} \times \frac{N}{426}$$

This is the "ceiling" system of the subscription tariffs. The prices actually charged depend therefore on the index  $N_a$  and the absolute increase, provided that the ceiling price calculated on the basis of N does not come into play.

The table below shows the basic prices of the tariff components per Gigajoule for the Paris region:

N = 426

Standard consumer	Tariff	Annual subscription charge in FF	Monthly standing charge FF/GJ (1)	Commodity rate	
				First block	remainder
I <sub>3</sub>	SR	24 000	43.39	13.22	12.67
I <sub>4</sub> I <sub>5</sub>	ST	24 000	33.67	13.08	12.53

(1) Per GJ of maximum daily offtake

(2) Limit set at 24 000 kWh/year, i.e. 86 400 GJ/year

By applying the index Na and the commodity rate increase the tariff has following values for January 1982.

Standard consumer	Tariff	Annual subscription charge in FF	Monthly standing charge (see above) FF/GJ	Commodity rate in FF/GJ	
				First block	remainder
I <sub>3</sub>	SR	34 287	61.99	44.49	24.82
I <sub>4</sub> I <sub>5</sub>	ST	34 287	48.10	25.40	24.62

In the other regions, these basic prices may differ as a result of the system of tolls.

Industrial supply contracts, like all contracts are signed for a period of 3 years.

There are also interruptible contracts, likewise signed for three years, which cover approximately 30 % of Gaz de France's sales to industry.

The terms of these contracts are as follows:

- the customers must possess an installation capable of using a type of fuel other than gas;
- as a general rule at least 80 % of the quantities stipulated in the contract must be consumed in this way, except in the case of an interruption of supply;
- the supplies are interrupted by Gaz de France, with prior notice of between 24 hours and 15 days;
- the price charged results, according to the supply conditions, either from the normal registered tariff limited by the price of the alternative fuel. As a rule, it is the actual price of heavy fuel oil used by the consumer, plus one or two percent. In other words, the normal list price for gas only applies when the price of the alternative fuel is higher. This type of contract was not applied to the standard consumers in this study.

f) Industrial prices - analysis

The prices are given in tables 2-4 of the annex. The small industrial consumers  $I_1$  and  $I_2$  are charged under the same tariff system as domestic heating and have evolved along similar lines, i.e. increases of 54 % and 59 % respectively over the reference period.

For Gaz de France's larger industrial consumers ( $I_3, I_4, I_5$ ) increases were fairly uniform throughout the country, from 58% for the  $I_3$  to 62% for  $I_5$ . Industries supplied by Gaz du Sud Ouest suffered smaller increases, from 59% for  $I_3$  to 49% for  $I_5$ .

Tariff degression for Gaz de France customers has therefore not varied much over the two year period, e.g. in Paris -36 % in 1980 compared with -33% in 1982.

The modulation has a small influence on prices, i.e. prices are reduced by around 2.5 when modulation increases from 200 to 250 days ( $I_3$ ) and by around 2 % when it passes from 250 to 330 days ( $I_4$ ).

A comparison between the Gross Domestic Product price index (GDP) and the selling prices of gas gives the following results:

	GDP price index	Selling price - Paris						
		$I_1$	$I_2$	$I_{3-1}$	$I_{3-2}$	$I_{4-1}$	$I_{4-2}$	$I_5$
1980	162.4	163.8	156.4	170.3	188.7	208.3	210.4	224.4
1981	181.6 *	193.9	186.4	204.6	227.0	252.0	255.0	272.1
1982	204.6 *	253.0	248.3	268.4	298.5	334.6	339.4	362.5

\* estimated

Without exception the price of gas increased by more than prices for the whole of goods and services, as measured by the GDP price index. Natural gas has become more expensive not only in current terms, but also in real terms, the more so when it concerns large consumers (see  $I_5$ ).

### 3. ITALY

#### a) Situation in the gas industry

The structure of the gas industry, which has a considerable influence on price formation, has two levels :

- SNAM, a company of the ENI group, which has a virtual monopoly (about 98%) on the transport and wholesale distribution of natural gas. In particular, SNAM supplies gas to industries consuming over 1 000 000 m<sup>3</sup> a year (i.e. approximately 38 TJ/year) and to the distribution companies (1).
- the gas distributors, whose function is to distribute gas to small consumers. They receive natural gas from SNAM and resell it either as it is or mixed with other gases. These distributors (1 335 local networks) are either municipal undertakings, concessionary companies or local authorities.

SNAM applies a standard national tariff. On the other hand, each distributor issues its own tariffs according to a method introduced in 1975 and modified in 1980 by the Interministerial Price Committee (CIP), which takes into account not only the costs of raw materials but also a series of other factors which vary from one local authority to another. This leads to a profusion of tariffs, which would be impossible to describe in this study and which explains the differences in prices for small consumers from one location to another.

In 1981 gas resources comprised 99% natural gas (produced domestically or imported) and 1% works gas (excluding coke-oven gas and blast-furnace gas, which the works retain for their own use).

---

(1) Exceptionally, one or two large industrial consumers may be supplied by local distribution companies and SNAM may also supply industrial consumers whose consumption is lower than the limit stated.

Natural gas sales are made up by the following:

	%	Standard consumers
<b>SNAM direct sales</b>	57	
i.e. { industries	(42)	I <sub>3</sub> I <sub>4</sub> I <sub>5</sub>
power stations	(7)	-
chemical synthesis	(8)	
<b>SNAM sales to distributors</b>	42	
i.e. { household uses	(34)	D <sub>1</sub> D <sub>2</sub> D <sub>3</sub> D <sub>4</sub>
non-household uses	(8)	I <sub>1</sub> I <sub>2</sub>
<b>Sales as motor fuel</b>	1	-

In 1980 the number of consumers was broken down as follows:

<b>Supplied by SNAM</b>	}	industry	2 926
		chemical synthesis	22
		other	325
4 608		distribution companies	1 335
<b>Supplied via distributors</b>	}	household (1)	7 734 004
		commerce	113 440
7 930 890		small industries	83 446

(1) Including collective heating

Over the past few years national production has maintained its share of natural gas resources:

		<u>1980</u>	<u>1981</u>
	National production	47%	47%
Imports	{ Netherlands	24%	26%
	{ URSS	24%	27%
	{ Libya	5%	- %



b) Taxes

This subject is dealt with in chapter IV.

c) Household prices - tariffs

Each distribution undertaking calculates a basic price in accordance with a complex formula, laid down in law by the Interministerial Price Committee (for further details see CIP Regulations N°s 17 and 28/1980, 12/1981 and 8/1982). The prices charged to consumers vary around this basic price, decreasing according to the ratio between fixed costs and commodity costs.

This leads to two part tariff formulae with:

- a standing charge (which includes from now on the meter rental)
- a commodity rate (sometimes in block form).

For individual domestic consumers ( $D_1$ ,  $D_2$ ,  $D_3$ ) the standing charge is LIT 600 per month. For the other small consumers it depends on the number of "flames" which is determined freely by each distribution company, within certain statutory limits. The "flames" represent the user's equipment and, therefore, consumption capacity. For these consumers the standing charge is calculated on the basis of LIT 50 per month and per flame.

The price to the final consumer of natural gas is affected by SNAM's tariff for sales to distributors. The commodity rate in this tariff varies according to the selling price of heating oil (agreement of 5th October 1979<sup>(\*)</sup>), which provides for LIT 0.53 per m<sup>3</sup> to be passed on to the price of natural gas for each lira increase in the free-to-consumer price per kg of heating oil.

d) Household prices - analysis

Tables 5 and 6 in the annex give the prices recorded. No prices are given for Genoa and Naples.

The differing tariff systems throughout the country have lead to different trends in prices. In Turin price increases have been more or less uniform at around 47 % for all standard consumers, over the two year period. In Milan, where manufactured gas is still distributed, the increases were less, ranging from 29 % to 39 %, with the larger consumers bearing the larger increases. In Rome both natural gas and manufactured gas are distributed. Natural gas consumers suffered larger increases (46 % to 85 %) than consumers of manufactured gas (37% to 66%) but natural gas remains considerably cheaper, 20 % less than the price of manufactured gas for the small consumers  $D_1$  and  $D_2$ , and 25 % less for the others. In Rome it is the small consumers who have borne the brunt of price increases, those using gas for heating got away more lightly.

---

(\*) between SNAM and the Associazione delle Aziende Distributrici

Because of this, tariff degression increased in Rome, and decreased in Turin and Milan.

The price differences noted between one location and another are largely due to the different types of gas, although differing overheads obviously play a role.

For the comparison with the Gross Domestic Product (GDP) price index, Rome natural gas prices have been used, these being in the middle of the price range.

	GDP price index	1975 = 100				
		Selling prices				
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>3b</sub>	D <sub>4</sub>
1980	222.9	287.4	366.6	515.2	533.5	553.9
1981	262.1 *	499.7	570.8	695.8	714.0	755.4
1982	303.6 *	532.0	614.4	759.3	780.2	827.2

\* estimated

It can be clearly seen that gas prices have progressed at a rate far exceeding the general rate of inflation as represented by the GDP price index, making natural gas in Rome in real terms much more expensive than it was in 1975.

#### e) Industrial prices - tariffs

A distinction must be made between the two systems of gas supply:

- 1) Small industrial consumers ( $I_1, I_2$ ) who are supplied by the urban networks of the local distribution companies and for whom the tariffs differ from city to city. The tariffs are of the two part type, similar to those applied to households, with a standing charge which depends on the number of flames (around 100 for  $I_1$  and 500 for  $I_2$ ) and a commodity rate, often in block form.
- 2) Other industrial consumers ( $I_3, I_4, I_5$ ) who are supplied almost exclusively by SNAM, which applies a standardized national tariff.

Since 1st January 1981 prices for non-interruptible supplies have been based on a new formula:

Consumption block	Price/ m <sup>3</sup>
≤ 1 000 000 m <sup>3</sup> /year	P <sub>1</sub> = 1.12 x P
1 - 3 000 000 m <sup>3</sup> /year	P <sub>2</sub> = 1.10 x P
3 - 25 000 000 m <sup>3</sup> /year	P <sub>3</sub> = 1.06 x P
< 25.000 000 m <sup>3</sup> /year	P

where  $P = 0.845 \times 1.077 (07 \text{ PATZ} + 0.3 \text{ PBTZ} + T) \text{ LIT/m}^3$

(PATZ = the average ex-internal refinery price (AGIP list prices) of ordinary fuel oil during the preceding month, including fabrication tax and 1/12 of the basic short term interest rate.

PBTZ = idem for low sulphur fuel oil.

T = 6 until 30th April 1982.)

1 m<sup>3</sup> = 38 100 kJ (GCV).

The value of P calculated from this formula is subject to certain reductions, or discounts, as follows

4.70%	for the period	1.1.81 - 30.4.81
3.50%	for the period	1.5.81 - 31.8.81
3.00%	for the period	1.9.81 - 31.12.81
1.00%	for the period	1.1.81 - 30.4.81

The values of P used to calculate the prices given in this study are:

1981:	P = 175.67
1982:	P = 223.47

including the period reduction above.

On an experimental basis an annual "regularity" factor based on R is applied

where  $R = \frac{\text{summer consumption}}{\text{winter consumption}}$

summer being the six month from April to September.

The value of R varies between 0.75 to 1.

The regularity factor varies, linearly, from 0% for R = 0.75 to 6% for R = 1. This factor is applied only to consumption up to 12 million m<sup>3</sup> per year.

In other words if a consumer uses as much gas in summer as in winter, he will receive a rebate of 6% on the price, for the first million m<sup>3</sup>.

The regularity factor was not applied to the standard consumers in this study.

For interruptible supplies the price results from the formula

$$P = \text{PATZ} \times 0.91$$

and had the values

$$P = 172.97 \text{ in } 1981$$

$$P = 213.15 \text{ in } 1982$$

These tariff formulae do not apply to either supplies to power stations (ENEL tariff) or deliveries to local gas distribution undertakings.

The price of gas for chemical synthesis (use for non-energy purposes) is aligned on that of the tariff for non-interruptible types of industrial consumption, except for gas to be used in the manufacture of fertilizer for the domestic market, for which the price was fixed at LIT 78.5/m<sup>3</sup> from June 1980 (as against LIT 58.50 at the beginning of the same year).

#### f) Industrial prices - analysis

The results are given in tables 5 and 6 in the annex. The small industrial consumers I<sub>1</sub> and I<sub>2</sub> are supplied by the local distribution companies and prices vary as for households. In Rome and Turin prices for these consumers rose by around 60% but in Milan by only 44%. For all locations there is very little difference in price between the two standard consumers, although I<sub>2</sub> consumes ten times as much as I<sub>1</sub>.

For the larger consumers, supplied by SNAM, prices are uniform for the whole country. Between 1980 and 1982 SNAM prices increased by between 87% and 96%, the smaller consumers suffering greater price rises than the larger consumers. Load factor or modulation has no effect on prices.

Tariff degression has increased slightly, but is still low. In 1980 when consumption increased one hundred fold from I<sub>3</sub> to I<sub>5</sub> the price reduction was 5%. This has now been increased to 9%.

A comparison between the GDP price index and gas selling prices gives the following results:

	GDP price index	Selling prices Rome		Selling prices - SNAM		
		I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	I <sub>4</sub>	I <sub>5</sub>
1980	222.9	411.1	404.5	403.6	407.8	407.2
1981	262.1 *	605.5	596.9	620.2	614.4	600.0
1982	303.6 *	659.8	651.0	789.0	781.4	763.2

\* estimated

It is immediately apparent that gas prices are increasing by much more than the prices of goods and services as a whole, as represented by the GDP index. Natural gas is thus becoming more expensive not only at current prices but also in constant terms (base 1975).

#### 4. NETHERLANDS

##### a) Situation in the gas industry

The gas industry has three levels :

- 1) natural gas production (NAM)
- 2) transporting, importing and selling to very large consumers connected to the main transmission grid (GASUNIE)
- 3) distribution (local societies or communal enterprises).

Direct sales by GASUNIE represent around 41% of the volume of gas sold (30% of which goes to power stations), the remaining 59% is supplied to the public via the distribution companies.

GASUNIE supplies 136 distribution companies, 29 power stations and 384 large industrial enterprises.

For the distribution companies the number of customers and gas sales may be broken down as follows :

	Customers 1 000 n	Sales %	Standard consumers
- Small Consumers	<u>4 578</u>	<u>66</u>	
≤ 21 GJ/year	596	1	D <sub>1</sub> D <sub>2</sub>
i.e. 21-6000 GJ/year	3 979	64	D <sub>3</sub> D <sub>4</sub> I <sub>1</sub> I <sub>2</sub>
reduced tariffs	3	1	-
(of which domestic consumers)	(4 366)	(56)	D <sub>1</sub> → D <sub>4</sub>
- Large Consumers (≥ 6000 GJ/year)	<u>19</u>	<u>34</u>	I <sub>3</sub> I <sub>4</sub> I <sub>5</sub>
<b>TOTAL</b>	<u>4 597</u>	<u>100</u>	

Although the distribution system is decentralised, the tariff system is uniform (with reductions, however, in the areas close to the Groningen gas fields) and prices indicated for Rotterdam are representative for the whole country.

The Groningen gas fields remain the principal source of natural gas consumed in the country. However, during recent years gas has been imported from Norway as part of the policy to conserve national resources.

These imports from Norway reached :

in 1980 - 133 000 TJ }  
 in 1981 - 118 000 TJ } 9% of inland consumption.

b) Taxes

Taxes are treated separately in chapter IV.

c) Household prices - tariffs

All small consumers (domestic, commercial, industrial, etc.) with an annual consumption of up to 170 000 m<sup>3</sup> are charged according to a simple two-part tariff system, the rates of which are revised periodically. The general tariff, which applies to standard consumers D<sub>1</sub>, D<sub>2</sub> and D<sub>3</sub>, is as follows :

Date	Standing Charge HFL/year	Commodity Rate cents/m <sup>3</sup>
January 1981	48	39.9
January 1982	48	46.9

There is also a tariff for collective central heating (Blokverwarmings-tarief), which applies to standard consumer D<sub>4</sub> :

Date	Standing Charge HFL/year	Commodity Rate cents/m <sup>3</sup>
January 1981	15 n (minimum 180 HFL)	39.9
January 1982	15 n (minimum 180 HFL)	46.9

n = number of appartments

These tariffs are based on a standard m<sup>3</sup> of 35.17 MJ (GCV).

d) Household prices - analysis

The prices are given in table 7 in the annex.

Domestic gas prices in the Netherlands increased by between 36 % and 60 % during the period 1980 to 1982, the major part of which occurred during 1980. The larger increases are borne by the larger standard consumers, resulting in a reduction in tariff depression. In fact, the reduction in unit price as consumption increases from 8.37 GJ per year to 1 047 GJ per year was - 29 % in 1982, compared with - 40 % in 1980.

A comparison between the selling price of gas and the Gross Domestic Product (GDP) price index gives the following results :

1975 = 100

	GDP price index	Selling price				
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>3b</sub>	D <sub>4</sub>
1980	133.6	135.7	132.1	175.7	184.1	205.6
1981	141.6 *	165.7	169.0	237.4	250.0	281.0
1982	150.4 *	185.0	192.6	277.1	292.4	329.8

\* estimated

It can be clearly seen that gas prices have risen by more than the price of goods and services in the Netherlands as represented by the GDP index, i.e. domestic gas is now more expensive in real terms.

e) Industrial prices - tariffs

The tariff system introduced on 1 January 1978 is still in force, with a number of minor changes. The tariff is based on blocks of consumption and indexed to fuel oil prices.

Blocks of annual consumption	Price in cents/m <sup>3</sup> 1981 and 1982
0 - 170 000 m <sup>3</sup>	= household tariff
170 000 - 1 million m <sup>3</sup>	2.8 + C
1 - 10 " m <sup>3</sup>	2.2 + C
10 - 50 " m <sup>3</sup>	1.4 + C
> 50 " m <sup>3</sup>	0.0 + C

These tariffs are based on a standard m<sup>3</sup> of 35.17 MJ (GCV).



C is the coefficient of adjustment which is linked to the price of fuel oil :

$$C = 40 \times \frac{P}{500}$$

P is the average price per quarter of fuel oil with a viscosity greater than 65 Cst at 50° C and a net calorific value of 41.45 MJ/kg, for deliveries of at least 2 000 tonnes per quarter.

P is calculated by the Central Statistical Office (CBS), and is published during the second month of the following quarter.

As from the first quarter of 1981 gas prices are calculated on the basis of the average of the definite values of P for the two previous quarters.

All contracts are concluded on the basis of these tariff formulae, which result in a degressive price depending on the volume of consumption and do not include a component based on the regularity of offtake.

#### f) Industrial prices - analysis

The prices are given in table 7 in the annex.

As taxes have not changed significantly during the period 1980 to 1982 the evolution of prices before and after tax has been the same.

Prices for the smaller industrial consumers I<sub>1</sub> and I<sub>2</sub>, developed along the lines of domestic prices (same tariff) with an overall rise of around 61 %, 38 % of which was during 1980 and 17 % during 1981.

For larger consumers I<sub>3</sub>, I<sub>4</sub> and I<sub>5</sub>, prices are linked to fuel oil prices and developed accordingly. The overall increases for these consumers were around 70 % with slightly larger increases for January 1982 than for January 1981. The 1981 price would have been higher but for a rebate of 1 cent per m<sup>3</sup>, a result of market forces at that time.

Modulation (maximum daily offtake) does not affect prices.

A comparison between the selling price of gas and the GDP price index shows that gas prices to industry have increased by much more than prices for all goods and services. In fact, in real terms gas prices have doubled since 1975.

1975 = 100

	GDP price index	Selling price				
		I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	I <sub>4</sub>	I <sub>5</sub>
1980	133.6	198.6	204.6	196.3	196.4	227.4
1981	141.6 *	272.2	281.9	252.9	251.4	294.4
1982	150.4 *	319.5	331.1	340.1	333.6	386.9

\* estimated.

## 5. BELGIUM

### a) Situation in the gas industry

The general structure of the gas industry has two levels:

- Import, transmission, deliveries to general distribution organizations and to large industrial consumers (> 33 500 GJ/year) by the company Distrigaz;
- general distribution (households and non-domestic consumers up to 33 500 GJ/year - and even up to 140 700 GJ/year by agreement with Distrigaz) by municipal undertakings, either individually or grouped together to form associations, with or without the participation of private companies, to manage operations.

The breakdown of natural gas deliveries is as follows:

	1979	1980	1981	% standard consumer
- DISTRIGAZ	<u>62</u>	<u>58.8</u>	<u>55.3</u>	
Industry, firm and erasable supplies	34.5	34.0	34.8	I <sub>3</sub> I <sub>4</sub> I <sub>5</sub>
Industry, interruptible supplies	12.8	13.3	10.2	
Public power stations	14.6	11.5	10.3	
- PUBLIC DISTRIBUTION	<u>38</u>	<u>41.2</u>	<u>44.7</u>	
Household uses	26.7	28.5	30.5	
(heating tariffs)	(24.9)	(26.8)	(28.6)	D <sub>3</sub> D <sub>4</sub>
(other tariffs)	( 1.8)	( 1.7)	( 1.9)	D <sub>1</sub> D <sub>2</sub>
Non domestic uses	11.3	12.8	14.2	
TOTAL	100	100	100	

Natural gas is supplied from several Dutch and Norwegian fields.

Imports intended for the Belgian market are broken down as follows:

	1979	1980	1981
Netherlands	82.5%	78.3%	76.9%
Norway (North Sea)	17.5%	21.7%	23.1%

b) Taxes

Taxes are treated separately in chapter IV.

c) Household prices-tariffs

Gas prices for deliveries to households vary according to two indices: Iga, which takes into account the frontier price of natural gas; and Igd which takes into account the average wages of workers in the private gas and electricity industry. The values of these indices are as follows:

	<u>Iga</u>	<u>Igd</u>
January 1981	1.9796	1.0490
January 1982	3.2293	1.0947

The tariffs applicable in 1981 and 1982 are as follows:

Standard consumer	Tariff	Standing charge BFR	Commodity rate centimes/MJ
D <sub>1</sub> D <sub>2</sub>	A	35.2 x Igd/month	- 1st block (1)  Brussels/Liège (2) Antwerp 5.9524 Iga + 24.5290 Igd - Remainder 5.9524 Iga + 23.0866 Igd 5.9524 Iga + 16.4070 Igd
D <sub>3</sub>	B	2718 x Igd/year	5.9524 Iga + 7.2670 Igd
D <sub>4</sub>	C	n x 139 x Igd/month	5.9524 Iga + 4.3739 Igd

n = number of dwellings, minimum 10

(1) Size of first block: Brussels, Liège = 15 474 MJ/year  
Antwerp = 17 936 MJ/year

(2) Following a recommendation of the Gas and Electricity Control Committee this was reduced to 23.0866 from 1st January 1982.

If the meters are read annually (as is the case in Bruxelles and Liège) the size of the first block is 15 474 MJ/year; if the meters are read monthly (as in Antwerp) the size of the first block is 17 936 MJ/year.

d) Household prices - analysis

Tables 8 and 9 in the annex contain the results.

Since 1st January 1982 tariffs have been the same for all three locations, the only difference being that in Antwerp the size of the first tariff block is larger than in Liège and Brussels, to compensate for the extra cost involved in reading gas meters at monthly intervals instead of annually. This leads to small price differences for standard consumer D<sub>2</sub> only, differences of the order of 1 %.

Between 1980 and 1982 prices for domestic small consumers rose by around 40 %, whereas customers using gas for heating suffered much larger increases, of the order of 80 % for D<sub>3</sub> and even 100 % for D<sub>4</sub>. Part of these large increases is due to the increase in the rate of VAT, from 6 % to 16 % during 1980, and to 17 % during 1981.

Tariff degression has decreased sharply; standard consumer D<sub>4</sub>, who in 1980 paid per unit only 36 % of the price paid by D<sub>1</sub>, now pays just over half the price paid by D<sub>1</sub> per unit.

A comparison may be made between selling prices and the Gross Domestic Product (GDP) price index.

1975 = 100

	GDP price index	Selling price - Brussels				
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>3b</sub>	D <sub>4</sub>
1980	130.3	126.0	127.6	130.0	144.4	167.0
1981	136.8 *	149.7	152.5	172.3	193.2	231.8
1982	147.9 *	176.3	181.8	234.2	265.3	333.7

\* estimated

Prices for the smaller consumers D<sub>1</sub>, D<sub>2</sub> and D<sub>3</sub> were more or less in line with inflation in 1980, but since they have risen by more than the general cost of living, making gas for these small consumers more expensive in real terms in 1982 than it was in 1975. For the larger consumers D<sub>3b</sub> and D<sub>4</sub> prices have risen much more sharply so that for D<sub>4</sub> prices in real terms are now more than twice as expensive as they were in 1975.

e) Industrial prices - tariffs

For non-domestic consumers who take less than 33 500 GJ per year ( $I_1$ ,  $I_2$ ) the tariffs are linked to the same system of indexing ( $I_{ga}$  and  $I_{gd}$ )<sup>1</sup> as for household uses (see above). The tariffs, which are valid for the whole country, are as follows :

Standard consumer	Tariff	Standing charge BFR/year	Commodity rate centimes/MJ
$I_1$ (1)	35-879 GJ/year	5500 x $I_{gd}$	Load factor $\geq 115$ days 5.9524 $I_{ga}$ + 6.6695 $I_{gd}$ $< 115$ days 5.9524 $I_{ga}$ + 8.1677 $I_{gd}$
-	879-3517 GJ/year	6497 $I_{gd}$	March-November 5.9524 $I_{ga}$ + 4.9837 $I_{gd}$ December-February 5.9524 $I_{ga}$ + 8.1343 $I_{gd}$
$I_2$	$> 3517$ GJ/year	46401 $I_{gd}$ + 4.003 $I_{gd}/MJ$ (2)	5.9524 $I_{ga}$ + 2.2046 $I_{gd}$

- (1) Standard consumer  $I_1$  is regarded as having a load factor of more than 115 days.  
 (2) per Megajoule of daily maximum offtake.

Industrial consumers who take more than 33 500 GJ a year ( $I_3$ ,  $I_4$ ,  $I_5$ ) are subject to the DISTRIGAZ tariff system.

This tariff system covers three types of supply, defined below, from which the consumer chooses :

- Firm supply** : it is not possible for Distrigaz to interrupt supply except in case of "force majeure".
- Erasable** : supply may be interrupted by Distrigaz in winter between 15th November and 15th March. The total number of days of interruption per winter period may not exceed 35.
- Interruptible** : supply may be interrupted at any time, by either party. There is no limit to the duration of the interruption.

The prices for firm and erasable supplies are based on the following tariff formule :

standing charge :  $(1-R_h) \times 4371 \times RDZ \times S_n \times K$  BFR/month  
 commodity rate :  $1.02 (G-61.35) + 76.26 + 6 \times RDZ \times C_{ne})P.K$  BFR/GJ  
 connection charge:  $R \times L \times RDZ$  BFR/month

The various parameters in these formulae are defined as follows :

$S_n$  : sum of "firm and erasable" subscriptions ( $S_{n_F} + S_{n_E}$ ), i.e. the subscribed maximum hourly offtake in GJ.

$R_h$  : coefficient of hourly regularity assessed on annual consumption ( $Q_a$ ) and the sum of subscriptions ( $S_n$ )

$$R_h = \frac{Q_a}{8\,760 \times S_n}$$

$C_{ne}$  : coefficient of non-interruptibility ranging between 0 and 1 according to the degree of interruptibility of supplies

$$C_{ne} = \frac{S_{n_F}}{S_n}$$

$P$  : coefficient which adjusts the commodity rate according to the use made of the gas.

$P$  can have three values as indicated below.

	Non-specific applications	Specific applications	Raw material
Non-erasable	1	1.1	1
Erasable	0.9	1	0.9

Non-specific applications are those where residual fueloils may be substituted easily, whereas specific applications are in competition with light petroleum products.

$K$  is a reduction coefficient based on the monthly offtake :

- first 41 870 GJ	$K = 1$
- next 41 870 GJ	$K = 0.99$
- next 41 870 GJ	$K = 0.98$
- next 41 870 GJ	$K = 0.97$
- next 41 870 GJ	$K = 0.96$
- remainder	$K = 0.95$

This reduction coefficient applies only to the largest standard consumer,  $I_5$ , for which a weighted  $K$  was calculated.

$G$  : Cost of gas at the frontier in BFR/GJ, valid for the month of supply and calculated monthly to represent the average price of the various gases purchased by DISTRIGAZ during the month.

	January 1980	January 1981	January 1982
$G =$	79.20	108.94	178.053

$RDZ$  : monthly revision index, based on salaries and other costs.

	January 1980	January 1981	January 1982
$RDZ =$	1.146352	1.175864	1.245958

The connection charge depends on the length of the connection in metres ( $L$ ) and on the subscribed maximum hourly offtake ( $R$  a function of  $S_n$ ). This charge is indexed by  $RDZ$ .

The extreme values for this charge are 0 and 5 BFR per GJ and per year. In this study, an average representative value of 0.5 BFR/GJ was taken.

The price for interruptible supplies is :

- either agreed monthly with the client
- or is obtained by applying the national erasable tariff (see above) with the following values for the parameters :

$$\begin{aligned} R_h &= 1 \\ P &= 0.9 \\ C_{ne} &= 0 \\ K &= 1 \end{aligned}$$

Thus the standing charge disappears and the commodity rate becomes

$$1.02 G + 6.06 \text{ BFR/GJ}$$

i.e. a simple tariff indexed to the price of gas at the frontier.

In the present study, four variations have been calculated, covering the range of industry prices, firm and erasable, by applying the following parameters :

firm deliveries	$C_{ne} = 1$	and	$P = 1.1$
firm deliveries	$C_{ne} = 1$	and	$P = 1$
deliveries, half of which are erasable	$C_{ne} = 0.5$	and	$P = 1$
deliveries which are totally erasable	$C_{ne} = 0$	and	$P = 0.9$

#### f) Industrial prices - analysis

The results are given in tables 8 and 9 in the annex.

All non-domestic tariffs are standardized throughout the whole of the country. The small standard consumers  $I_1$  and  $I_2$  have tariffs similar to households, and prices including VAT have evolved along the same lines as domestic heating. However, VAT is generally deductible for industrial and commercial consumers, and prices without VAT show less sharp increases, between 72 % and 85 % instead of the 90 % to 104 % recorded for prices inclusive of VAT.

For the larger standard consumers, the tariff system is different but the effects are the same. Prices including VAT have increased by between 97 % and 123 % between 1980 and 1982, with the largest consumers bearing the largest increases. Again ex-VAT prices show rather smaller increases, of the order of 79 % to 102 %.

Tariff degression for industrial consumers has also decreased. In 1980 standard consumer  $I_5$  paid per unit 61 % of the price paid by  $I_1$ , whereas by 1982 this had been increased to 72 %.

However gas prices depend on more than increased consumption. Variations in load factor or modulation have a greater effect. It is only when consumption exceeds 41 870 GJ per month (i.e. 502 440 per year) that prices are reduced because of quantity. For example, standard consumer  $I_{4-1}$  pays the same as  $I_{3-2}$  because both have the same modulation, even though  $I_{4-1}$  consumes ten times more than  $I_{3-2}$ . On the other hand,  $I_{3-2}$  pays 10 % less than  $I_{3-1}$  even though they both consume 41 860 GJ per year, the improved price per unit being due to the improved load factor.

For the customers charged according to the DISTRIGAZ tariff system, prices also vary according to the use made of the gas, by applying an adjustment coefficient P, see chapter e). The use made of the gas obviously depends on the type of industry using it and is therefore not something the consumer can vary to improve prices. However by opting to have all or part of his gas supply erasable the customer can reduce the value of P as well as the value of Cne, this leading to lower prices. Thus, a consumer using gas for specific applications can decrease the price paid by 5 % or 6 % by opting to have 50 % of his supply erasable.

To conclude this analysis, a comparison may be made between the indices of selling prices and the Gross Domestic Product (GDP) price index.

1975 = 100

GDP price index		$I_1$	$I_2$	$I_{3-1}$	P = 1, Cne = 1		
					$I_{4-1}$	$I_{4-2}$	$I_5$
1980	130.3	143.1	185.8	182.1	225.1	251.6	274.8
1981	136.8 *	193.9	260.2	246.2	315.1	357.2	393.0
1982	147.9 *	271.2	378.6	358.7	479.2	552.5	611.7

\* estimated

For all gas consumers prices increased by more than prices for the whole of goods and services, as represented by the GDP price index. This means that in real terms gas for industrial uses is two, three or even four times more expensive (depending on the standard consumer) than it was in 1975.



6. G.D. OF LUXEMBOURGa) Situation in the gas industry

All natural gas is imported from the Netherland via Belgium under a supply contract with the Belgian company DISTRIGAZ.

A single Luxembourg company (SOTEG) imports the gas, transports it and resells it either to the public distribution companies or directly to large industrial customers with an annual consumption of more than 2 million m<sup>3</sup>.

In 1981 natural gas sales were broken down as follows :

Users	% of sales	Standard consumers
Iron and steel group	60.0	
Other heavy industries	2.5	
Public distribution	37.6	
household tariffs	( 1.5)	D <sub>1</sub> D <sub>2</sub>
household tariffs with heating	(22.0)	D <sub>3</sub> D <sub>3b</sub>
collective heating tariffs	(12.0)	D <sub>4</sub>
small industry and craft trades	( 2.0)	I <sub>1</sub> I <sub>2</sub> I <sub>3</sub>
	100	

An agreement between the public distribution companies and the iron and steel industry stipulates that the latter will reduce its consumption of natural gas during winter peak periods by up to a maximum of 25% of its hourly and daily offtake, so as to allow the distribution companies to supply their peaks in demand. In return, the iron and steel works can take advantage of reductions in the distribution companies' consumption during other periods of the year. This results in a good modulation in the flow of natural gas in the network, which allows the distribution companies to offer particularly favourable terms of sale to their customers.

Since 1980 the network has been adapted to the distribution of 'rich gas'.

b) Taxes

Taxes are discussed separately in Chapter IV.

c) Household prices - tariffs

Domestic gas tariffs are adjusted every six months by applying two indices  $E_1$  and  $E_2$  which are linked to the cost of living and the purchase price of natural gas.

The values of these indices are given below.

	<u>1st half 1981</u>	<u>1st half 1982</u>
$E_1$	1.855253	2.707665
$E_2$	3.147670	6.33699

The indices are applied to the tariffs below.

in LFR

Standard consumer	Tariff	Monthly meter charge	Monthly standing charge	Price per m <sup>3</sup>
D <sub>1</sub>	TG 1	19	33 x E <sub>1</sub>	10.74 + E <sub>2</sub>
D <sub>2</sub>	TG 2	19	110 x E <sub>1</sub>	8.08 + E <sub>2</sub>
D <sub>3</sub> D <sub>3b</sub>	TMC 1	19	31 x E <sub>1</sub> (1) + 79 x N x E <sub>1</sub>	3.64 + E <sub>2</sub>
-	TMC 2		16 x E <sub>1</sub> (1) + 79 x N x E <sub>1</sub>	3.64 + E <sub>2</sub>
-	TC 1		31 x E <sub>1</sub> (1)	3.64 + E <sub>2</sub>
D <sub>4</sub>	TC 2	85	16 x E <sub>1</sub> (1)	3.64 + E <sub>2</sub>

N = number of households (N ≥ 10 for TMC 2)

Since November 1980 the gross calorific value of one cubic meter of gas is 41 868 kJ (rich gas).

(1) per whole block of 21 000 kJ/h of installed useful output, which depends on the customer's maximum offtake of gas. For the purposes of this study the following were considered :

- 3 blocks for D<sub>3</sub>
- 4 blocks for D<sub>3b</sub>
- 30 blocks for D<sub>4</sub>

d) Household prices - analysis

The prices can be found in table 1 in the annex. 1980 to 1982 was a period of large price increases in Luxembourg, from 44 % for the smallest consumer to 117 % for D<sub>3</sub>. This follows on from a period of calm during 1978-1980 when prices rose by less than 10 %.

The main reason for these large increases has been the increase in the purchase price of natural gas, which increased by more than 140 % since the beginning of 1980.

The reduction in unit price as consumption increases has changed significantly during the reference period. In 1980 D<sub>1</sub> paid over three times more than D<sub>4</sub> per unit, whereas at the beginning of 1982 D<sub>1</sub> paid only twice the price for D<sub>4</sub>.

A comparison between the GDP price index and selling prices shows in all cases gas prices have increased by more than prices for all goods and services, and, in the case of heating, gas in real terms is now more than twice as expensive as in 1975.

1975 = 100

	GDP price index	selling price				
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>3b</sub>	D <sub>4</sub>
1980	137.6	139.0	141.2	171.9	173.6	174.9
1981	144.5 *	159.3	178.9	253.7	255.4	253.7
1982	158.1 *	200.8	238.8	373.2	373.8	372.1

\* estimated

e) Industrial prices - tariffs

The following tariffs are applied to industrial consumers :

in LFR

Standard consumer	Tariff	Monthly meter charge	Subscription standing charge (monthly)	Monthly standing charge per m <sup>3</sup> of maximum offtake		Commodity charge per m <sup>3</sup>
				hourly	daily	
I <sub>1</sub>	Ti	85	31 x E <sub>1</sub> (1)	-	-	3.64 + E <sub>2</sub>
I <sub>2</sub>	TS 1	-	2500	48.552 x E <sub>1</sub>	5.069 x E <sub>1</sub>	2.401 + E <sub>2</sub>
-	TS 2	-	5000	46.684 x E <sub>1</sub>	4.882 x E <sub>1</sub>	2.304 + E <sub>2</sub>
I <sub>3-1</sub> I <sub>3-2</sub>	TS 3	-	8000	44.817 x E <sub>1</sub>	4.685 x E <sub>1</sub>	2.207 + E <sub>2</sub>

(1) per whole block of 21 000 kJ/h of installed useful output which depends on the maximum gas offtake. 12 blocks were taken for this consumer.

The indices E<sub>1</sub> and E<sub>2</sub> are the same as for household uses (see above).

Gross calorific value of one m<sup>3</sup> = 41 868 kJ (rich gas).

The special tariffs (TS 1, 2, 3) do not have a meter charge but an annual subscription amounting to 10% of the actual cost of delivery, payable in twelve monthly instalments. "Delivery" includes the provision of meters and the pressure reducer, maintenance, annual overhaul and related wage costs. The monthly subscriptions shown in the table are calculated from the normal average bills charged to subscribers who correspond to the standard consumers covered by this study.

All this tariffs require subscription for a whole year.

f) Industrial prices - analysis

Table 1 in the annex gives the prices calculated. Prices are given for I<sub>1</sub> to I<sub>3-2</sub> only. The few larger consumers which exist are supplied directly by SOTEG.

Gas prices for industry increased by between 113 % (for I<sub>1</sub>) and 164 % (for I<sub>3-2</sub>) during the period under consideration, due to the large increase (> 140 %) in the purchase price of gas at the frontier.

This followed a period of calm during the previous two years when prices rose by only 9 to 16 %.

Tariff degression has been reduced; standard consumer  $I_1$  now pays only 15 % less than  $I_1$ , compared with 32 % less in 1980.<sup>3-2</sup> Modulation also affects industrial prices. When standard consumer  $I_1$  improves his modulation from 1600 hours to 4 000 hours (i.e. reduces his maximum hourly offtake) his unit price goes down by almost 7 %.

1975 = 100

	GDP price index	selling price			
		$I_1$	$I_2$	$I_{3-1}$	$I_{3-2}$
1980	137.6	174.5	190.3	191.5	191.7
1981	144.5 *	253.8	291.1	315.9	320.6
1982	158.1 *	371.4	452.3	496.5	506.8

\* estimated

If the GDP price index is compared with the selling prices it can be seen that the price of gas to industry has accelerated far ahead of prices for all goods and services, as represented by the GDP price index.

## 7. UNITED KINGDOM

### a) Situation in the gas industry

This study relates only to Great Britain, as the gas industry in Ulster is organised on a separate basis.

Most of the natural gas distributed in Great Britain comes from the North Sea (in 1981 76.4% from British fields and 22.6% from Norwegian fields). The remainder is imported as LNG from Algeria.

British Gas' sales in 1980/81 may be broken down as follows :

	Consumers %	Sales %	Standard consumers
Domestic sales :			
( Prepayment tariff	12.5	2.4	D <sub>1</sub>
( Credit tariff	83.8	48.7	D <sub>2</sub> D <sub>2b</sub> D <sub>3</sub> D <sub>3b</sub> D <sub>4</sub>
Commercial sales :	3.0	11.4	} I <sub>1</sub> I <sub>2</sub> I <sub>3</sub> I <sub>4</sub> I <sub>5</sub>
Industrial sales :	0.5	35.8	
National and Local Government :	0.2	1.7	
TOTAL number	15 506 000	16 386 M ths.	

Tariffs are the responsibility of the British Gas Corporation within the framework of financial targets laid down by Government.

### b) Taxes

There are no taxes levied directly on gas sales.

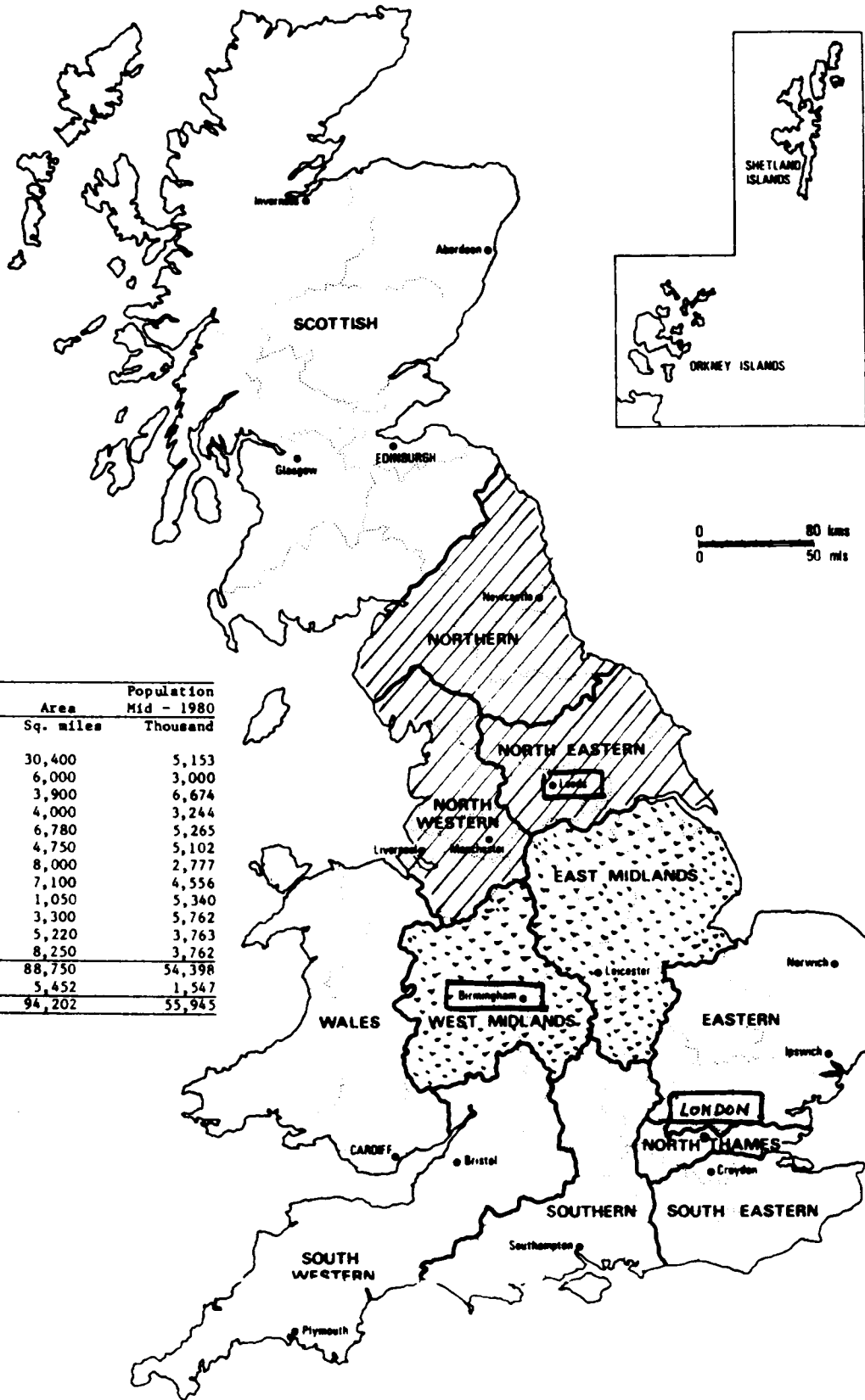
### c) Household prices - tariffs

There are three gas tariff zones in Great Britain; i.e. the General Zone, represented in this study by London, the Northern Zone, represented by Leeds, and the Midlands, represented by Birmingham.




The map shows the boundaries of these three zones.

Each zone has two tariffs on offer to domestic consumers : the Domestic Credit tariff and the Prepayment tariff.

# BOUNDARIES OF GAS REGIONS



Gas Region	Area Sq. miles	Population Mid - 1980 Thousand
Scotland	30,400	5,153
Northern	6,000	3,000
North Western	3,900	6,674
North Eastern	4,000	3,244
East Midlands	6,780	5,265
West Midlands	4,750	5,102
Wales	8,000	2,777
Eastern	7,100	4,556
North Thames	1,050	5,340
South Eastern	3,300	5,762
Southern	5,220	3,763
South Western	8,250	3,762
Great Britain	88,750	54,398
Northern Ireland	5,452	1,547
United Kingdom	94,202	55,945

-  NORTHERN PRICE ZONE
-  MIDLANDS PRICE ZONE
-  GENERAL ZONE : SCOTLAND, WALES AND THE REST OF ENGLAND

The Domestic Credit tariff was altered in April 1980. It is now a simple two part tariff which consists of a quarterly standing charge and a single commodity rate for the gas consumed. The standing charge varies from one zone to another, but the commodity rate is the same for all zones.

In January 1982 the rates were as follows :

Zone	Standing charge per quarter	Commodity rate
General	£ 8.00	)
Northern	£ 7.50	) 27.2 p/therm
Midlands	£ 7.00	)

The prepayment tariff, where customers insert coins directly into a meter, is cheaper only for small consumers using less than about 31 - 39 therms per quarter (approximately 3.7 GJ). The prepayment tariff is used by 13% of domestic customers but accounts for only 5% of total domestic sales.

In April 1981 a standing charge was introduced into this tariff. In January 1982 the rates for the prepayment tariff were as follows :

Zone	Standing charge per quarter	First 39 therms per quarter	Remainder
General	£ 3.00	43 p/therm	)
Northern	£ 2.70	41 p/therm	) 29.2 p/therm
Midlands	£ 2.40	39 p/therm	)

Block central heating by gas is rare in Great Britain and no special tariff exists. So no prices have been given for D<sub>4</sub>. The additional standard consumer D<sub>2b</sub> corresponds to a consumer with one gas fire as well as a gas cooker and water heater. This category represents a large number of consumers in Great Britain.

#### d) Household Prices - analysis

Tables 10 and 11 in the annex give the prices recorded.

In January 1980 the Secretary of State for Energy announced a new financial target for British Gas over the three year period 1980/81 to 1982/83. In connection with this target the Government said that as a result domestic gas tariffs would be increased by 10% per annum above the rate of general price increases over these three years. Consequently domestic tariffs have been increased on average as follows :



	1980	1981	1982
April	+ 17%	+ 15%	+ 12%
October	+ 10%	+ 10%	+ 10%

These tariff increases result in a more reasonable relationship between the prices paid by domestic and industrial customers by 1982.

Between January 1980 and January 1982 prices for the chosen standard consumers rose by between 52% and 99% depending on location and standard consumer. For the typical central heating customer ( $D_2$ ) the increase was 58 %. Further increases occurred during the year 1982 (about + 23 % on average).

For customers on the Domestic Credit Tariff there are only small differences in prices between zones because the commodity rate is uniform for the whole of Great Britain.

#### ●) Industrial prices - tariffs

All consumers with an annual consumption of less than 25 000 therms ( $< 2\ 638\ GJ$ ) are charged according to the General Credit tariff, the rates of which are identical to those of the Domestic Credit tariff since 1st October 1981 and are given in the section on household tariffs.

This tariff applies to standard consumer  $I_1$ .

Standard consumer  $I_2$  represents a level of consumption which changed from being based on tariffs to one based on negotiated contracts for the majority of customers during 1981. Therefore for January 1980 and January 1981 prices shown for this consumer are based on tariffs, but for January 1982 the price is based on the appropriate contract.

The larger industrial and commercial consumers ( $I_3, I_4, I_5$ ) are always supplied under contract, the terms of which are not published. These contract prices are mainly influenced by the conditions of delivery, the most important of which is the nature of the supply, i.e. firm or interruptible.

Since 1980 the pattern of contracts has changed. Fewer new contracts have been entered into and renewed contracts now form the bulk of British Gas deliveries to industry with the result that the range of prices has narrowed considerably.

Before 1980 the price range depended mainly on the date of subscription of contracts. Now it depends mainly on the conditions of delivery of gas.

The prices quoted in this study for 1981 and 1982 are representative of renewed contracts. They differ from the prices given up to 1980, which showed the price level of new contracts. This means there is an unavoidable break in the price series between 1980 and 1981.

Although gas may be supplied on a firm basis at any level, interruptible contracts are more common for larger industrial consumers ( $I_5$ ) normally using gas for steam raising. Prices given for  $I_5$  are therefore for interruptible contracts.

Geographical location does not at present influence gas prices for industry.

f) Industrial prices - analysis

Prices are given in tables 10 and 11 in the annex.

For the tariff customer  $I_1$  prices rose by 14% between 1980 and 1982, a smaller rise than for domestic consumers, bringing the General Credit tariff in line with the Domestic Credit tariff. Standard consumer  $I_2$  changed from being a tariff customer to a contract customer and suffered price increases of around 22% over the same period.

Because of the break in the price series between 1980 and subsequent years it is not possible to calculate a meaningful percentage price increase for the standard consumers  $I_3$ ,  $I_4$  and  $I_5$  for the period 1980 to 1982. In early 1981, renewal prices were pegged at Government request and later the dates for price changes in all contracts were brought into line. As a result, by 1982, the range of contract prices had been greatly reduced.

The following table illustrates this to some extent :

UKL/GJ

Quarter	Average price for large (1) consumers	New and renewed contracts (2)	Tariffs		Contracts			
			$I_1$	$I_2$	$I_3$	$I_4$	$I_5$	
1980	1	1.51	2.09	2.32	2.28	2.83	2.45	1.89
	2	1.62	2.26					
	3	1.69	2.54					
	4	1.87	2.59					
1981	1	1.98	2.59	2.55	2.47	2.68	2.68	2.32
	2	2.03	2.61					
	3	2.03	2.61					
	4	2.14	2.61					
1982	1	2.20	2.61	2.65	2.78	2.78	2.78	2.42

- (1) Average prices paid by respondents to a Department of Energy survey covering some 900 establishments.
- (2) British Gas Corporation estimates of the average price of new and renewed contracts in the quarter, both firm and interruptible supplies.

The Department of Energy's panel of 900 consumers was selected so as to cover a high proportion of consumption with a relatively small number of returns. It is therefore biased towards large consumers who quite often have interruptible contracts, and must also contain some of the customers whose long term contracts expired in 1980 and who still have some catching up to do. The figures are the average unit values of gas invoiced to the consumers during that period and will often relate to contracts in force for some time. This is why the prices are seen to be lower than in the other columns. However, it is clear that the average price for these consumers is rising more quickly than the prices for new and renewed contracts (column 2), evidence of the catching up of the prices to long term customers.

## 8. DENMARK

### a) Situation in the gas industry

The prices recorded relate to the Copenhagen gas works owned by KØBENHAVNS BELYSNINGSVÆSEN), which is the largest in the country, with 256 000 customers including 1 500 industrial consumers. This company makes and distributes gas manufactured from LPG (33 %) and naphtha (67 %). Its volume of production accounts for approximately 60 % of the works gas produced in the whole country.

So far, natural gas is not yet available on the Danish market.

In 1980, the consumption of gasworks gas in the whole country was as follows:

	TJ (NCV)	%	Standard consumers
Households-heating	1 812	38	D <sub>3</sub> D <sub>4</sub>
Household - other uses	1 672	35	D <sub>1</sub> D <sub>2</sub>
Commerce and administrations	303	6	) I <sub>1</sub> I <sub>2</sub>
Industry	1 028	21	
	<u>4 815</u>	<u>100</u>	

(Source: Energy input-output tables, drawn up by Danmarks Statistik).

### b) Taxes

Taxes are treated separately in chapter IV.

### c) Household prices - tariffs

The tariff structure introduced in March 1977 is still in force. It comprises a standard tariff and a heating tariff.

The standard tariff has three components: meter rental, commodity rate and surcharge for raw materials.

- 1) The annual meter rental remains unchanged since the last study: DKR 72/year for D<sub>1</sub> D<sub>2</sub> D<sub>3</sub>, DKR 180/year for D<sub>4</sub>.

- 2) The commodity rate is degressive according to blocks of annual consumption

		<u>1980</u>	<u>1981</u>	<u>1982</u>	
1st block	12 000 m <sup>3</sup> /year	59	69	69	øre/m <sup>3</sup>
2nd block	108 000 m <sup>3</sup> /year	35	41	41	øre/m <sup>3</sup>
3rd block	600 000 m <sup>3</sup> /year	28	32	32	øre/m <sup>3</sup>
4th block	1 080 000 m <sup>3</sup> /year	25	29	29	øre/m <sup>3</sup>
	excess	20	24	24	øre/m <sup>3</sup>

- 3) The raw materials surcharge is added to the commodity rate per m<sup>3</sup> and is calculated monthly on the basis of the cost of the products used to manufacture the gas (petroleum products in Copenhagen).

At the beginning of each of the years under review, the following rates applied:

<u>1980</u>	<u>1981</u>	<u>1982</u>	
68.6	92.2	104.1	øre/m <sup>3</sup>

For meters which are read quarterly the surcharge is the average of the preceding three months, and thus becomes

<u>1980</u>	<u>1981</u>	<u>1982</u>	
68.6	89.43	103.73	øre/m <sup>3</sup>

When the gas is used mainly for heating, a heating tariff is applied on request. It has four components:

- 1) a meter rental as given in the standard tariff;
- 2) a standing charge of DKR 180 a year;
- 3) a single commodity rate per m<sup>3</sup> consumed; i.e.

<u>1980</u>	<u>1981</u>	<u>1982</u>	
29.0	34.0	34.0	øre/m <sup>3</sup>

- 4) a raw materials surcharge identical to that of the standard tariff.

In Copenhagen, the gas has an energy content of 16 745 kilojoules (GCV) per m<sup>3</sup>.

#### d) Household prices - analyses

The results are given in table 7 in the annex. Between 1980 and 1982 prices increased by between 27 % and 33 %, the larger part of the increase occurring during 1980. The increase in VAT was more than

compensated for by the reduction in the special consumption tax, but as prices continue to rise this is only temporary, VAT being a percentage tax whereas the consumption tax is a fixed amount.

Although the basic tariff was increased (by around 17 % for the consumers in this survey) the main cause of the price rises was the 52 % increase in the raw materials surcharge.

Tariff depression has decreased slightly, from - 27 % in 1980 to - 24 % in 1982. The average consumption per domestic consumer is around 9 GJ per year, consumption is low because of the high prices and the tariff structure.

A comparison between selling prices and the Gross Domestic Product (GDP) price index gives the following results:

1975 = 100

	GDP price index	Selling price				
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>3b</sub>	D <sub>4</sub>
1980	152.4	221.5	256.6	267.0	278.0	271.5
1981	167.0 *	265.8	310.2	325.3	339.4	332.4
1982	184.7 *	282.4	330.2	351.6	367.1	360.1

\* estimated

In all cases selling prices for gas have increased by more than prices for all goods and services, and gas heating in real terms is now almost twice as expensive as in 1975.

#### e) Industrial prices - tariffs

The tariff for industrial uses, which in fact applies to only fairly modest levels of consumption, is calculated from that for domestic consumers.

It has three components:

- 1) a meter rental, similar to that of the standard household tariff (DKR 180/year for I<sub>1</sub> and DKR 516/year for I<sub>2</sub>);
- 2) a degressive commodity rate for blocks of consumption, identical to the standard household tariff;
- 3) a raw materials surcharge which is added to the commodity rate per m<sup>3</sup> and applied monthly, as industrial consumers are billed every month. Accordingly, in January in each of the years under review this surcharge amounted to:

<u>1980</u>	<u>1981</u>	<u>1982</u>	
68.6	92.2	104.1	øre/m <sup>3</sup>

f) Industrial prices - analysis

The prices are given in table 7 of the annex. Prices are given only for I<sub>1</sub> and I<sub>2</sub> as industrial consumers with higher consumptions are rare.

The trends in selling prices are similar to those for domestic consumers, for the same reasons. Between 1980 and 1982 selling prices rose by around 31 %, much less than the previous two year period.

However, if we consider prices without taxes the increases are greater, 37 % and 40 % for I<sub>1</sub> and I<sub>2</sub> respectively.

Comparison with the GDP price index shows that gas prices to industry have risen by more than prices for all goods and services; i.e. in real terms gas has become much more expensive.

	1975 = 100		
	GDP price index	I <sub>1</sub>	Selling price I <sub>2</sub>
1980	152.4	223.3	244.4
1981	167.0 *	272.4	298.6
1982	184.7 *	292.3	322.9

\* estimated

## VI. CONCLUSIONS

As explained in Chapter III, the international comparison tables (No. 13 and 14) are drawn up in both Purchasing Power Standards (PPS) and European Currency Units (ECU). Table 12 gives the conversion rates between PPS and ECU and national currencies.

The difficulties involved in comparing price levels internationally mean that possible interpretations and conclusions drawn from these tables should be regarded with caution, especially as it has been necessary to use estimated values for the GDP price indices 1981 and 1982.

The locations chosen for the Community comparison are as in the previous study, **except for Dublin which is missing.**

### 1. OVERALL IMPRESSIONS

Although analysis of the evolution in prices over a period of only two years is difficult, it is clearly seen that the general trend in prices is still upwards, as gas prices continue to rise in real terms (after inflation has been taken into account) as well as in current terms. The percentage increases vary largely from one country to another, and in general industry suffered larger increases than households.

### 2. HOUSEHOLD PRICES

Generally consumers using gas for heating suffered larger price increases than smaller consumers, with the exception of London where consumers using the Prepayment Tariff (coins in the meter) (D1) were subject to much larger increases than other domestic consumers. This is because the Prepayment system is expensive for the gas boards to run.

The smallest increases were in Milan and the largest in Luxembourg. However, Copenhagen remains the most expensive location, in spite of moderate price increases between 1980 and 1982, because the town is still supplied with gasworks gas. London and Rotterdam remain the cheapest locations, which one would expect from natural gas-producing countries.

In all locations prices in real terms are higher in 1982 than they were in 1975 or 1980.



### 3. INDUSTRY PRICES

Again price increases varied widely from one location to another, with the larger consumers generally suffering the larger increases. (The break in the series of United Kingdom industry prices makes such judgement impossible for the U.K.).

Paris had the smallest price increases, except for  $I_1$  and  $I_2$ . The largest increases were in Luxembourg.

Rotterdam and London remain the cheapest locations for the small industrial consumers,  $I_1$  and  $I_2$ , but the larger industrial consumers in Paris and London are now generally paying less than their counterparts in the other locations.

Copenhagen is the most expensive for small consumers and Düsseldorf the most expensive for standard consumers  $I_3$ ,  $I_4$  and  $I_5$ .

In all locations real prices (i.e. taking inflation into account) in 1982 are higher than they were in 1975 and 1980, with a few exceptions.



## GAS PRICES

1

## PRIX DU GAZ

in national currencies

en monnaie nationale

DM/GJ

LFR /GJ

B.R. DEUTSCHLAND

G.D. LUXEMBOURG

			DÜSSELDORF			LUXEMBOURG		
			Price incl. all taxes	Price excl. VAT	Price without taxes	Price incl. all taxes	Price excl. VAT	Price without taxes
January			Prix TTC	Prix hors TVA	Prix hors taxes	Prix TTC	Prix hors TVA	Prix hors taxes
Janvier								
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980	29,69	26,27	26,27	409,5	390,0	390,0
		1981	35,97	31,83	31,83	469,2	446,9	446,9
		1982	46,76	41,38	41,38	591,6	563,4	563,4
D <sub>2</sub>	16,74 GJ	1980	22,53	19,94	19,94	354,9	338,0	338,0
		1981	27,33	24,19	24,19	449,6	428,2	428,2
		1982	35,47	31,39	31,39	600,2	571,6	571,6
D <sub>3</sub>	83,7 GJ	1980	14,41	12,75	12,75	149,9	142,8	142,8
		1981	18,71	16,56	16,56	221,2	210,7	210,7
		1982	23,32	20,64	20,64	325,4	307,9	307,9
D <sub>3b</sub>	125,6 GJ	1980	12,85	11,37	11,37	142,7	135,9	135,9
		1981	17,14	15,17	15,17	209,9	199,9	199,9
		1982	21,97	19,44	19,44	307,3	292,6	292,6
D <sub>4</sub>	1047 GJ	1980	10,79	9,55	9,55	125,4	119,4	119,4
		1981	15,83	14,01	14,01	181,9	173,3	173,3
		1982	19,41	17,18	17,18	266,8	254,1	254,1
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ	1980	14,58	12,90	12,90	133,0	126,7	126,7
		1981	19,36	17,13	17,13	193,4	184,2	184,2
		1982	24,45	21,64	21,64	283,0	269,5	269,5
I <sub>2</sub>	4186 GJ 200 days-jours	1980	11,91	10,54	10,54	111,3	106,0	106,0
		1981	14,50	12,83	12,83	170,3	162,2	162,2
		1982	19,92	17,63	17,63	264,6	252,0	252,0
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980	10,96	9,70	9,70	98,8	94,1	94,1
		1981	13,42	11,88	11,88	163,0	155,3	155,3
		1982	18,66	16,51	16,51	256,2	244,0	244,0
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980	10,51	9,30	9,30	90,3	86,0	85,0
		1981	13,00	11,50	11,50	151,0	143,8	143,8
		1982	17,99	15,92	15,92	238,7	227,3	227,3
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980	10,43	9,23	9,23			
		1981	12,90	11,42	11,42			
		1982	17,90	15,84	15,84			
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1980	10,00	8,85	8,85			
		1981	12,49	11,05	11,05			
		1982	17,26	15,27	15,27			
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1980						
		1981						
		1982						

## GAS PRICES

2

## PRIX DU GAZ

in national currencies

en monnaie nationale

## FRANCE

FF/GJ

			REGION PARISIENNE			LILLE		
			Price incl. all taxes	Price excl. VAT	Price without taxes	Price incl. all taxes	Price excl. VAT	Price without taxes
January			Prix TTC	Prix hors TVA	Prix hors taxes	Prix TTC	Prix hors TVA	Prix hors taxes
Janvier								
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980 1981 1982	67,88 76,75 90,81	57,73 65,27 77,22	57,73 65,27 77,22	- Région Parisienne		
D <sub>2</sub>	16,74 GJ	1980 1981 1982	57,77 66,11 79,00	49,13 56,22 67,18	49,13 56,22 67,18	- Région Parisienne		
D <sub>3</sub>	83,7 GJ	1980 1981 1982	38,12 44,88 55,84	32,42 38,16 47,49	32,42 38,16 47,49	- Région Parisienne		
D <sub>3b</sub>	125,6 GJ	1980 1981 1982	33,92 40,60 51,35	28,84 34,53 43,67	28,84 34,53 43,67	- Région Parisienne		
D <sub>4</sub>	1047 GJ	1980 1981 1982	27,55 32,75 43,30	23,42 27,85 36,82	23,42 27,85 36,82	- Région Parisienne		
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ	1980 1981 1982	30,15 35,70 46,57	25,64 30,36 39,60	25,64 30,36 39,60	30,15 35,70 46,57	25,64 30,36 39,60	25,64 30,36 39,60
I <sub>2</sub>	4186 GJ 200 days-jours	1980 1981 1982	26,24 31,27 41,67	22,32 26,59 35,44	22,32 26,59 35,44	26,24 31,27 41,67	22,32 26,59 35,44	22,32 26,59 35,44
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980 1981 1982	22,50 27,03 35,45	19,13 22,98 30,14	19,13 22,98 30,14	22,43 26,95 35,35	19,07 22,91 30,06	19,07 22,91 30,06
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980 1981 1982	21,85 26,29 34,57	18,58 22,35 29,40	18,58 22,35 29,40	21,77 26,20 34,47	18,51 22,28 29,31	18,51 22,28 29,31
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980 1981 1982	19,89 24,07 31,95	16,91 20,47 27,17	16,91 20,47 27,17	19,81 23,98 31,84	16,85 20,39 27,08	16,85 20,39 27,08
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1980 1981 1982	19,40 23,51 31,29	16,50 19,99 26,61	16,50 19,99 26,61	19,32 23,41 31,18	16,43 19,91 26,51	16,43 19,91 26,51
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1980 1981 1982	19,21 23,29 31,03	16,33 19,80 26,39	16,33 19,80 26,39	19,12 23,19 30,92	16,26 19,72 26,29	16,26 19,72 26,29

## GAS PRICES

3

PRIX DU GAZ

in national currencies

en monnaie nationale

FRANCE

FF/GJ

			LYON			TOULOUSE		
			Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes	Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes
January Janvier								
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980 1981 1982	= Région Parisienne			= Région Parisienne		
U <sub>2</sub>	16,74 GJ	1980 1981 1982	= Région Parisienne			= Région Parisienne		
D <sub>3</sub>	83,7 GJ	1980 1981 1982	= Région Parisienne			= Région Parisienne		
D <sub>3b</sub>	125,6 GJ	1980 1981 1982	= Région Parisienne			= Région Parisienne		
D <sub>4</sub>	1047 GJ	1980 1981 1982	= Région Parisienne			= Région Parisienne		
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ	1980 1981 1982	30,15 35,70 46,57	25,64 30,36 39,60	25,64 30,36 39,60	30,15 35,70 46,57	25,64 30,36 39,60	25,64 30,36 39,60
I <sub>2</sub>	4186 GJ 200 days-jours	1980 1981 1982	26,24 31,27 41,67	22,32 26,59 35,44	22,32 26,59 35,44	26,24 31,27 41,67	22,32 26,59 35,44	22,32 26,59 35,44
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980 1981 1982	22,17 26,65 35,00	18,85 22,66 29,77	18,85 22,66 29,77	21,60 26,01 34,25	18,37 22,12 29,12	18,37 22,12 29,12
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980 1981 1982	21,56 25,96 34,19	18,34 22,08 29,08	18,34 22,08 29,08	20,63 24,91 32,95	17,55 21,18 28,02	17,55 21,18 28,02
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980 1981 1982	19,61 23,74 31,57	16,67 20,19 26,84	16,67 20,19 26,84	18,87 22,92 29,49	16,05 19,49 25,08	16,05 19,49 25,08
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1980 1981 1982	19,16 23,24 30,97	16,29 19,76 26,33	16,29 19,76 26,33	18,38 22,36 27,68	15,63 19,01 23,54	15,63 19,01 23,54
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1980 1981 1982	18,96 23,02 30,71	16,13 19,57 26,11	16,13 19,57 26,11	18,26 22,21 27,24	15,53 18,89 23,16	15,53 18,89 23,16

## FRANCE

FF/GJ

			STRASBOURG			MARSEILLE		
			Price incl. all taxes	Price excl. VAT	Price without taxes	Price incl. all taxes	Price excl. VAT	Price without taxes
January			Price incl. all taxes	Price excl. VAT	Price without taxes	Price incl. all taxes	Price excl. VAT	Price without taxes
Janvier			Prix TTC	Prix hors TVA	Prix hors taxes	Prix TTC	Prix hors TVA	Prix hors taxes
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980 1981 1982	86,48 106,72 127,88	73,54 90,75 108,74	73,54 90,75 108,74	- Région Parisienne		
D <sub>2</sub>	16,74 GJ	1980 1981 1982	63,68 79,73 96,07	54,15 67,80 81,69	54,15 67,80 81,69	- Région Parisienne		
D <sub>3</sub>	83,7 GJ	1980 1981 1982	34,46 46,49 59,59	29,30 39,53 50,67	29,30 39,53 50,67	- Région Parisienne		
D <sub>3b</sub>	125,6 GJ	1980 1981 1982	32,48 44,35 53,37	27,62 37,71 45,38	27,62 37,71 45,38	- Région Parisienne		
D <sub>4</sub>	1047 GJ	1980 1981 1982	27,04 36,39 48,43	22,99 30,94 41,18	22,99 30,94 41,18	- Région Parisienne		
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ	1980 1981 1982	32,99 43,91 55,77	28,05 37,34 47,42	28,05 37,34 47,42	30,15 35,70 46,57	25,64 30,36 39,60	25,64 30,36 39,60
I <sub>2</sub>	4186 GJ 200 days-jours	1980 1981 1982	27,47 36,95 46,72	23,36 31,42 39,73	23,36 31,42 39,73	26,24 31,27 41,67	22,32 26,59 35,44	22,32 26,59 35,44
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980 1981 1982				22,48 27,00 35,42	19,11 22,96 30,12	19,11 22,96 30,12
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980 1981 1982	20,13 28,05 36,66	17,12 23,85 31,17	17,12 23,85 31,17	21,82 26,25 34,53	18,55 22,32 29,36	18,55 22,32 29,36
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980 1981 1982				19,86 24,03 31,91	16,89 20,44 27,13	16,89 20,44 27,13
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1980 1981 1982				19,36 23,46 31,23	16,46 19,95 26,56	16,46 19,95 26,56
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1980 1981 1982				19,17 23,24 30,97	16,30 19,77 26,34	16,30 19,77 26,34

in national currencies

en monnaie nationale

## ITALIA

LIT/GJ

			TORINO			MILANO *		
			Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes	Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980	5 996	5 657	4 697	8 599	8 113	7 410
		1981	8 083	7 484	6 696	10 360	9 593	9 003
		1982	8 835	8 181	7 392	11 098	10 276	9 679
D <sub>2</sub>	16,74 GJ	1980	5 660	5 340	4 381	8 068	7 612	6 909
		1981	7 577	7 016	6 228	10 050	9 306	8 716
		1982	8 330	7 713	6 924	10 788	9 989	9 392
D <sub>3</sub>	83,7 GJ	1980	5 370	5 066	4 106	7 636	7 204	6 501
		1981	7 072	6 548	5 760	9 804	9 078	8 488
		1982	7 824	7 244	6 456	10 542	9 761	9 164
D <sub>3b</sub>	125,6 GJ	1980	5 321	5 020	4 061	7 642	7 210	6 507
		1981	7 048	6 526	5 738	9 778	9 053	8 464
		1982	7 800	7 222	6 434	10 515	9 737	9 140
D <sub>4</sub>	1047 GJ	1980	5 293	4 993	4 036	7 548	7 121	6 418
		1981	7 089	6 564	5 776	9 771	9 048	8 458
		1982	7 840	7 259	6 472	10 508	9 730	9 133
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ	1980	5 078	4 454	4 454	7 343	6 441	6 441
		1981	7 297	6 345	6 345	9 790	8 513	8 513
		1982	8 098	7 042	7 042	10 568	9 190	9 190
I <sub>2</sub>	4186 GJ 200 days-jours	1980	4 999	4 385	4 385	7 321	6 422	6 422
		1981	7 198	6 259	6 259	9 741	8 470	8 470
		1982	7 999	6 956	6 956	10 518	9 146	9 146
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980	3 858	3 384	3 384	= Torino		
		1981	5 929	5 156	5 156	= Torino		
		1982	7 543	6 559	6 559	= Torino		
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980	3 858	3 384	3 384	= Torino		
		1981	5 929	5 156	5 156	= Torino		
		1982	7 543	6 559	6 559	= Torino		
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980	3 776	3 312	3 312	= Torino		
		1981	5 689	4 947	4 947	= Torino		
		1982	7 236	6 292	6 292	= Torino		
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1980	3 776	3 312	3 312	= Torino		
		1981	5 689	4 947	4 947	= Torino		
		1982	7 236	6 292	6 292	= Torino		
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1980	3 653	3 204	3 204	= Torino		
		1981	5 382	4 680	4 680	= Torino		
		1982	6 846	5 953	5 953	= Torino		

\* Gasworks gas for households, I<sub>1</sub> and I<sub>2</sub>\* Gaz d'usines pour usages domestiques, I<sub>1</sub> et I<sub>2</sub>

## ITALIA

LIT/GJ

			ROMA +			ROMA *		
			Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes	Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes
January Janvier								
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980 1981 1982	6 763 11 759 12 519	6 380 10 888 11 592	5 421 10 099 10 804	9 470 14 915 15 742	8 934 13 810 14 576	8 168 13 182 13 947
D <sub>2</sub>	16,74 GJ	1980 1981 1982	6 408 9 978 10 739	6 045 9 239 9 944	5 086 8 451 9 155	9 040 12 870 13 697	8 528 11 917 12 682	7 762 11 288 12 054
D <sub>3</sub>	83,7 GJ	1980 1981 1982	6 177 8 343 9 104	5 827 7 725 8 430	4 868 6 937 7 641	8 756 11 234 12 061	8 260 10 402 11 168	7 494 9 773 10 539
D <sub>3b</sub>	125,6 GJ	1980 1981 1982	6 130 8 204 8 964	5 783 7 596 8 300	4 824 6 808 7 512	8 704 11 093 11 920	8 211 10 271 11 037	7 445 9 643 10 408
D <sub>4</sub>	1047 GJ	1980 1981 1982	5 855 7 985 8 744	5 524 7 394 8 096	4 566 6 606 7 309	8 139 10 987 11 817	7 678 10 173 10 942	6 909 9 542 10 311
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ	1980 1981 1982	6 134 9 034 9 844	5 381 7 856 8 560	5 381 7 856 8 560	9 350 13 916 14 800	8 202 12 101 12 870	8 202 12 101 12 870
I <sub>2</sub>	4186 GJ 200 days-jours	1980 1981 1982	6 056 8 935 9 745	5 312 7 770 8 474	5 312 7 770 8 474	8 958 13 422 14 306	7 858 11 671 12 440	7 858 11 671 12 440
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h		= Torino					
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h		= Torino					
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h		= Torino					
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h		= Torino					
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h		= Torino					

+ Natural gas  
\* Gasworks gas

+ Gaz naturel  
\* Gaz d'usines



in national currencies

en monnaie nationale

HFL /GJ

DKR /GJ

## NETHERLANDS

## DANMARK

January Janvier			ROTTERDAM			KOBENHAVN *		
			Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes	Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980 1981 1982	16,51 20,17 22,51	13,99 17,09 19,08	13,98 17,08 19,07	116,37 139,64 148,32	96,77 114,46 121,57	84,83 104,90 112,01
D <sub>2</sub>	16,74 GJ	1980 1981 1982	13,12 16,78 19,13	11,12 14,22 16,21	11,11 14,21 16,20	111,20 134,40 143,06	92,47 110,16 117,26	80,53 100,60 107,71
D <sub>3</sub>	83,7 GJ	1980 1981 1982	10,42 14,08 16,43	8,83 11,93 13,92	8,82 11,92 13,91	88,08 107,31 115,99	73,25 87,96 95,07	61,31 78,40 85,51
D <sub>3b</sub>	125,6 GJ	1980 1981 1982	10,20 13,85 16,20	8,64 11,74 13,73	8,63 11,73 13,72	86,86 106,05 114,72	72,23 86,92 94,02	60,29 77,36 84,47
D <sub>4</sub>	1047 GJ	1980 1981 1982	9,95 13,60 15,96	8,43 11,53 13,52	8,42 11,52 13,51	84,84 103,86 112,52	70,55 85,13 92,23	58,61 75,57 82,68
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ	1980 1981 1982	9,87 13,53 15,88	8,36 11,47 13,46	8,36 11,46 13,45	97,56 119,02 127,70	81,13 97,56 104,67	69,18 88,01 95,11
I <sub>2</sub>	4186 GJ 200 days-jours	1980 1981 1982	9,74 13,42 15,76	8,26 11,37 13,36	8,26 11,36 13,35	87,12 106,43 115,09	72,46 87,24 94,34	60,51 77,68 84,79
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980 1981 1982	8,95 11,53 15,51	7,59 9,77 13,14	7,59 9,77 13,14			
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980 1981 1982	8,95 11,53 15,51	7,59 9,77 13,14	7,59 9,77 13,14			
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980 1981 1982	8,64 11,06 14,68	7,32 9,37 12,44	7,32 9,37 12,44			
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1980 1981 1982	8,64 11,06 14,68	7,32 9,37 12,44	7,32 9,37 12,44			
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1980 1981 1982	8,14 10,54 13,85	6,90 8,93 11,74	6,90 8,93 11,74			

\* Gasworks gas  
Gas d'usines

## BELGIQUE

			ANTWERPEN			LIEGE		
			Price incl. all taxes	Price excl. VAT	Price without taxes	Price incl. all taxes	Price excl. VAT	Price without taxes
January			Prix TTC	Prix hors TVA	Prix hors taxes	Prix TTC	Prix hors TVA	Prix hors taxes
Janvier			Prix TTC	Prix hors TVA	Prix hors taxes	Prix TTC	Prix hors TVA	Prix hors taxes
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980	419,3	395,6	395,6	415,1	391,6	391,6
		1981	479,1	413,0	413,0	496,6	428,1	428,1
		1982	585,1	500,1	500,1	585,1	500,1	500,1
D <sub>2</sub>	16,74 GJ	1980	392,2	370,0	370,0	380,5	359,0	359,0
		1981	448,3	386,5	386,5	458,4	395,2	395,2
		1982	552,9	472,6	472,6	546,4	467,0	467,0
D <sub>3</sub>	83,7 GJ	1980	199,7	188,4	188,4	199,7	188,4	188,4
		1981	264,6	228,1	228,1	264,6	228,1	228,1
		1982	359,7	307,4	307,4	359,7	307,4	307,4
D <sub>3b</sub>	125,6 GJ	1980	188,0	177,4	177,4	188,0	177,4	177,4
		1981	251,5	216,8	216,8	251,5	216,8	216,8
		1982	345,7	295,5	295,5	345,7	295,5	295,5
D <sub>4</sub>	1047 GJ	1980	150,8	142,3	142,3	150,8	142,3	142,3
		1981	209,3	180,4	180,4	209,3	180,4	180,4
		1982	301,3	257,5	257,5	301,3	257,5	257,5
FOR INDUSTRY			Cne = 0 ; P = 0,9			POUR USAGES INDUSTRIELS		
			Cne = 0,5; P = 1					
I <sub>1</sub>	418,6 GJ							
I <sub>2</sub>	4186 GJ 200 days-jours							
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h		125,1	118,1	118,1	136,8	129,1	129,1
			173,1	149,2	149,2	185,9	160,3	160,3
			259,3	221,6	221,6	272,5	232,9	232,9
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h		101,2	95,5	95,5	113,0	106,6	106,6
			146,3	126,1	126,1	159,2	137,2	137,2
			230,5	197,0	197,0	243,8	208,4	208,4
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h		101,2	95,5	95,5	113,0	106,6	106,6
			146,3	126,1	126,1	159,2	137,2	137,2
			230,5	197,0	197,0	243,8	208,4	208,4
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h		93,3	88,0	88,0	105,0	99,1	99,1
			137,2	118,3	118,3	150,2	129,5	129,5
			221,0	188,9	188,9	234,2	200,2	200,2
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h		90,9	85,8	85,8	102,3	96,5	96,5
			134,8	116,2	116,2	147,2	126,9	126,9
			218,4	186,7	186,7	231,3	197,7	197,7

## BELGIE

			BRUXELLES					
			Price incl. all taxes	Price excl. VAT	Price without taxes	Price incl. all taxes	Price excl. VAT	Price without taxes
January			Prix TTC	Prix hors TVA	Prix hors taxes	Prix TTC	Prix hors TVA	Prix hors taxes
Janvier								
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980 1981 1982	418.1 496.6 585.1	394.4 428.1 500.1	394.4 428.1 500.1			
D <sub>2</sub>	16,74 GJ	1980 1981 1982	383.4 458.4 546.4	361.7 395.2 467.0	361.7 395.2 467.0			
D <sub>3</sub>	83,7 GJ	1980 1981 1982	199.7 264.6 359.7	188.4 228.1 307.4	188.4 228.1 307.4			
D <sub>3b</sub>	125,6 GJ	1980 1981 1982	188.0 251.5 345.7	177.4 216.8 295.5	177.4 216.8 295.5			
D <sub>4</sub>	1047 GJ	1980 1981 1982	150.8 209.3 301.3	142.3 180.4 257.5	142.3 180.4 257.5			
FOR INDUSTRY			Cne = 1 ; P = 1			POUR USAGES INDUSTRIELS Cne = 1 ; P = 1,1		
I <sub>1</sub>	418,6 GJ	1980 1981 1982	172,6 233,9 327,1	162,8 201,6 279,6	162,8 201,6 279,6			
I <sub>2</sub>	4186 GJ 200 days-jours	1980 1981 1982	143,8 201,4 293,0	135,7 173,6 250,4	135,7 173,6 250,4			
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980 1981 1982	140,6 190,1 276,9	132,6 163,9 236,7	132,6 163,9 236,7	149.4 199.8 286.7	140.9 172.2 245.0	140.9 172.2 245.0
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980 1981 1982	116,6 163,2 248,2	110,0 140,7 212,1	110,0 140,7 212,1	125.4 173.0 258.0	118.3 149.1 220.5	118.3 149.1 220.5
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980 1981 1982	116,6 163,2 248,2	110,0 140,7 212,1	110,0 140,7 212,1	125.4 173.0 258.0	118.3 149.1 220.5	118.3 149.1 220.5
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1980 1981 1982	108,7 154,3 238,7	102,5 133,0 204,0	102,5 133,0 204,0	117.4 164.0 248.5	110.8 141.4 212.4	110.8 141.4 212.4
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1980 1981 1982	105,8 151,3 235,5	99,8 130,4 201,3	99,8 130,4 201,3	114.4 160.5 245.0	107.9 138.4 209.4	107.9 138.4 209.4

## UNITED KINGDOM

UKL /GJ

			LONDON			BIRMINGHAM		
			Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes	Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes
January Janvier								
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980 1981 1982	3,00 3,79 5,51		3,00 3,79 5,51	2,43 3,22 4,84		2,43 3,22 4,84
D <sub>2</sub>	16,74 GJ	1980 1981 1982	2,85 3,77 4,49		2,85 3,77 4,49	2,36 3,15 4,25		2,36 3,15 4,25
D <sub>2b</sub> (1)	33,5 GJ	1980 1981 1982	2,32 2,94 3,53		2,32 2,94 3,53	2,02 2,59 3,41		2,02 2,59 3,41
D <sub>3</sub>	83,7 GJ	1980 1981 1982	1,87 2,38 2,96		1,87 2,38 2,96	1,75 2,24 2,91		1,75 2,24 2,91
D <sub>3b</sub>	125,6 GJ	1980 1981 1982	1,77 2,26 2,83		1,77 2,26 2,83	1,69 2,16 2,80		1,69 2,16 2,80
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ	1980 1981 1982	2,32 2,55 2,65		2,32 2,55 2,65			= LONDON
I <sub>2</sub>	4186 GJ 200 days-jours	1980 1981 1982	2,28 2,47 2,78		2,28 2,47 2,78			= LONDON
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980 1981 1982	2,83 2,68 2,78		2,83 2,68 2,78			= LONDON
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980 1981 1982	2,83 2,68 2,78		2,83 2,68 2,78			= LONDON
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980 1981 1982	2,45 2,68 2,78		2,45 2,68 2,78			= LONDON
I <sub>4-2</sub>	418600 GJ 330 days jours 8000 h	1980 1981 1982	2,45 2,68 2,78		2,45 2,68 2,78			= LONDON
I <sub>5</sub>	4186000 GJ 330 days jours 8000 h	1980 1981 1982	1,89 2,32 2,42		1,89 2,32 2,42			= LONDON

(1) Extra standard consumer for UK only

(1) Consommateur-type supplémentaire, RU seulement

## UNITED KINGDOM

UKL/GJ

## IRELAND

IRL/GJ

			LEEDS					
			Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes	Price incl. all taxes Prix TTC	Price excl. VAT Prix hors TVA	Price without taxes Prix hors taxes
January Janvier								
FOR HOUSEHOLDS			POUR USAGES DOMESTIQUES					
D <sub>1</sub>	8,37 GJ	1980 1981 1982	2,64 3,51 5,17		2,64 3,51 5,17			
D <sub>2</sub>	16,74 GJ	1980 1981 1982	2,46 3,34 4,37		2,46 3,34 4,37			
D <sub>2b</sub> (1)	33,5 GJ	1980 1981 1982	2,09 2,69 3,47		2,09 2,69 3,47			
D <sub>3</sub>	83,7 GJ	1980 1981 1982	1,78 2,28 2,94		1,78 2,28 2,94			
D <sub>3b</sub>	125,6 GJ	1980 1981 1982	1,70 2,19 2,82		1,70 2,19 2,82			
FOR INDUSTRY			POUR USAGES INDUSTRIELS					
I <sub>1</sub>	418,6 GJ		= LONDON					
I <sub>2</sub>	4186 GJ 200 days-jours		= LONDON					
I <sub>3 1</sub>	41860 GJ 200 days-jours 1600 h		= LONDON					
I <sub>3 2</sub>	41860 GJ 250 days-jours 4000 h		= LONDON					
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h		= LONDON					
I <sub>4 2</sub>	418600 GJ 330 days-jours 8000 h		= LONDON					
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h		= LONDON					

(1) Extra standard consumer for UK only

(1) Consommateur-type supplémentaire, RU seulement

CONVERSION TABLE FOR THE PURCHASING  
POWER STANDARD (PPS)

TABLE DE CONVERSION DU STANDARD  
DE POUVOIR D'ACHAT (SPA)

	BR Deutschland	France	Italia	Nederland	Belgique Belgie	Luxembourg	United Kingdom	Ireland	Danmark	Ellas
	1 PPS =					1 SPA =				
	DM	FF	100 LIT	HFL	BFR	LFR	UKL	IRL	DKR	DRA
1975	3,43	5,77	6,72	3,37	50,37	47,94	0,467	0,459	8,50	31,41
1980 (1)	2,74	6,05	8,76	2,92	42,26	39,93	0,562	0,532	8,57	40,88
1981 (2)	2,60	6,16	9,38	2,82	40,41	38,19	0,572	0,572	8,55	44,57
1982 (2)	2,48	6,33	9,91	2,99	39,86	38,12	0,567	0,619	8,63	50,00

CONVERSION TABLE FOR  
EUROPEAN CURRENCY UNITS (ECU)

TABLE DE CONVERSION DE  
L'UNITE MONETAIRE EUROPEENNE (ECU)

	1 ECU =					1 ECU =				
	DM	FF	100 LIT	HFL	BFR	LFR	UKL	IRL	DKR	DRA
JAN 1980	2,49	5,83	11,61	2,75	40,43	40,43	0,637	0,673	7,77	55,59
JAN 1981	2,58	5,97	12,26	2,81	41,49	41,49	0,535	0,692	7,94	60,88
JAN 1982	2,44	6,21	13,09	2,68	41,61	41,61	0,565	0,692	7,99	62,69

GDP PRICE INDICES

INDICES DE PRIX DU PIB

1975 = 100

	BR Deutschland	France	Italia	Nederland	Belgique Belgie	Luxembourg	United Kingdom	Ireland	Danmark	Ellas
1980 (1)	121,0	162,4	222,9	133,6	130,3	137,6	198,5	191,4	152,4	206,9
1981 (2)	126,2	181,6	262,1	141,6	136,8	144,5	221,9	226,0	167,0	247,7
1982 (2)	131,8	204,6	303,6	150,4	147,9	158,1	240,8	268,1	184,7	304,6

(1) 1980 revised  
(2) 1981 and 1982 estimated

(1) 1980 révisé  
(2) 1981 et 1982 estimés

## GAS PRICES

in European Currency Units (ECU)  
at current prices

13

## PRIX DU GAZ

en Unités Monétaires Européennes (ECU)  
aux prix courants

EUR 9

ECU/GJ

ECU/GJ

	Dusseldorf	Paris	Milano	Rotterdam	Bruxelles	Luxembourg	London	Dublin	København
--	------------	-------	--------	-----------	-----------	------------	--------	--------	-----------

SELLING PRICE  
FOR HOUSEHOLDS

PRIX DE VENTE  
POUR USAGES DOMESTIQUES

D <sub>1</sub>	8,37 GJ	1980	11,92	11,64	7,41	6,00	10,34	10,13	4,71	14,98
		1981	13,94	13,16	8,45	7,18	11,97	11,31	7,08	17,59
		1982	19,16	14,62	8,48	8,40	14,06	14,22	9,75	18,56
D <sub>2</sub>	16,74 GJ	1980	9,05	9,91	6,95	4,77	9,48	8,78	4,47	14,31
		1981	10,59	11,34	8,20	5,97	11,05	10,84	7,05	16,93
		1982	14,54	12,72	8,24	7,14	13,13	14,42	7,95	17,90
D <sub>3</sub>	83,7 GJ	1980	5,79	6,54	6,58	3,79	4,94	3,71	3,64	11,34
		1981	7,25	7,70	8,00	5,01	6,38	5,33	5,50	13,52
		1982	9,56	8,99	8,05	6,13	8,64	7,82	6,25	14,52
D <sub>3b</sub>	125,6 GJ	1980	5,16	5,82	6,58	3,71	4,65	3,53	2,94	11,18
		1981	6,64	6,96	7,98	4,93	6,06	5,06	4,45	13,36
		1982	9,00	8,27	8,03	6,04	8,31	7,39	5,24	14,36
D <sub>4</sub>	1047 GJ	1980	4,33	4,73	6,50	3,62	3,73	3,10	2,78	10,92
		1981	6,14	5,62	7,97	4,84	5,04	4,38	4,22	13,08
		1982	7,95	6,97	8,03	5,96	7,24	6,41	5,01	14,08

PRICE WITHOUT VAT  
FOR INDUSTRY

PRIX HORS TVA  
POUR USAGES INDUSTRIELS

I <sub>1</sub>	418,6 GJ	1980	5,18	4,40	5,55	3,04	4,03	3,13	3,64	10,44
		1981	6,64	5,09	6,94	4,08	4,86	4,44	4,77	12,29
		1982	8,87	6,38	7,02	5,02	6,72	6,48	4,69	13,10
I <sub>2</sub>	4186 GJ 200 days-jours	1980	4,23	3,83	5,53	3,00	3,36	2,62	3,58	9,33
		1981	4,97	4,45	6,91	4,05	4,18	3,91	4,62	10,99
		1982	7,23	5,71	6,99	4,99	6,02	6,06	4,92	11,81
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1980	3,90	3,28	2,91	2,76	3,28	2,33		
		1981	4,60	3,85	4,21	3,48	3,95	3,74	5,01	
		1982	6,77	4,85	5,01	4,90	5,69	5,86	4,92	
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1980	3,73	3,19	2,91	2,76	2,72	2,13		
		1981	4,46	3,74	4,21	3,48	3,39	3,47	5,01	
		1982	6,52	4,73	5,01	4,90	5,10	5,46	4,92	
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1980	3,71	2,90	2,85	2,66	2,72			
		1981	4,43	3,43	4,04	3,33	3,39		5,01	
		1982	6,49	4,38	4,81	4,64	5,10		4,92	
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1980	3,55	2,83	2,85	2,66	2,54			
		1981	4,28	3,35	4,04	3,33	3,21		5,01	
		1982	6,26	4,29	4,81	4,64	4,90		4,92	
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1980		2,80	2,76	2,51	2,47			
		1981		3,32	3,82	3,18	3,14		4,34	
		1982		4,25	4,55	4,38	4,84		4,28	

## GAS PRICES

in Purchasing Power Standards  
(at 1975 prices)

14

## PRIX DU GAZ

en Standard de Pouvoir d'Achat  
(aux prix 1975)

Deflated PPS/GJ			EUR 9							SPA déflaté/GJ	
			Düsseldorf	Paris	* Milano	Rotterdam	Bruxelles	Luxembourg	London	* Dublin	* København
SELLING PRICE FOR HOUSEHOLDS			PRIX DE VENTE POUR USAGES DOMESTIQUES								
D <sub>1</sub>	8,37 GJ	1975 1980 1981 1982	6,42 7,15 8,31 10,34	7,42 7,24 7,32 7,69	4,95 5,74 5,88 5,44	3,61 3,67 4,23 4,44	6,59 6,37 7,21 7,85	6,15 6,21 6,77 7,81	4,71 3,23 3,66 4,90	6,18 8,98 9,84 9,45	
D <sub>2</sub>	16,74 GJ	1975 1980 1981 1982	4,68 5,43 6,31 7,85	6,25 6,16 6,31 6,69	4,67 5,39 5,71 5,29	2,95 2,91 3,52 3,77	5,97 5,84 6,65 7,33	5,24 5,38 6,49 7,92	4,20 3,08 3,64 3,98	5,10 8,58 9,47 9,11	
D <sub>3</sub>	83,7 GJ	1975 1980 1981 1982	2,95 3,47 4,32 5,16	3,86 4,07 4,28 4,73	3,61 5,10 5,57 5,17	1,76 2,31 2,95 3,24	3,05 3,04 3,84 4,83	1,82 2,27 3,19 4,29	2,40 2,01 2,29 2,63	3,88 6,80 7,56 9,94	
D <sub>3b</sub>	125,6 GJ	1975 1980 1981 1982	2,69 3,10 3,96 4,86	3,24 3,62 3,88 4,35	3,56 5,10 5,55 5,15	1,64 2,26 2,90 3,20	2,58 2,86 3,65 4,64	1,71 2,16 3,03 4,06	2,25 1,91 2,18 2,53	3,68 6,70 7,47 7,31	
D <sub>4</sub>	1047 GJ	1975 1980 1981 1982	2,15 2,60 3,66 4,29	2,87 2,94 3,12 3,67	3,39 5,04 5,55 5,15	1,44 2,21 2,85 3,15	1,79 2,30 3,04 4,04	1,50 1,90 2,63 3,52		3,32 6,55 7,32 7,17	
PRICE WITHOUT VAT FOR INDUSTRY			PRIX HORS TVA POUR USAGES INDUSTRIELS								
I <sub>1</sub>	418,6 GJ	1975 1980 1981 1982	3,20 3,11 3,96 4,79	2,71 2,74 2,90 3,35	4,15 4,30 4,83 4,50	1,42 1,86 2,40 2,66	2,26 2,48 2,93 3,75	1,51 1,92 2,66 3,56	3,04 2,51 2,46 2,36	4,47 6,26 6,87 6,67	
I <sub>2</sub>	4186 GJ 200 days-jours	1975 1980 1981 1982	1,75 2,54 2,97 3,90	2,47 2,38 2,54 3,00	3,44 4,29 4,81 4,48	1,36 1,83 2,38 2,64	1,45 2,07 2,54 3,36	1,16 1,61 2,34 3,32	2,48 2,46 2,38 2,46	3,65 5,59 6,15 6,01	
I <sub>3-1</sub>	41860 GJ 200 days-jours 1600 h	1975 1980 1981 1982	1,64 2,34 2,74 3,65	1,95 2,04 2,19 2,55	1,27 2,26 2,93 3,21	1,30 1,69 2,05 2,59	1,45 2,02 2,38 3,18	1,03 1,43 2,24 3,22	2,59 2,46		
I <sub>3-2</sub>	41860 GJ 250 days-jours 4000 h	1975 1980 1981 1982	1,59 2,24 2,66 3,52	1,71 1,98 2,13 2,49	1,27 2,26 2,93 3,21	1,30 1,69 2,05 2,59	0,87 1,68 2,04 2,85	0,94 1,30 2,08 3,00	2,59 2,46		
I <sub>4-1</sub>	418600 GJ 250 days-jours 4000 h	1975 1980 1981 1982	1,37 2,22 2,64 3,50	1,41 1,80 1,95 2,30	1,23 2,21 2,81 3,08	1,26 1,63 1,96 2,45	0,87 1,68 2,04 2,85		2,59 2,46		
I <sub>4-2</sub>	418600 GJ 330 days-jours 8000 h	1975 1980 1981 1982	1,32 2,13 2,55 3,38	1,36 1,76 1,91 2,25	1,23 2,21 2,81 3,08	1,26 1,63 1,96 2,45	0,81 1,56 1,93 2,74		2,59 2,46		
I <sub>5</sub>	4186000 GJ 330 days-jours 8000 h	1975 1980 1981 1982		1,26 1,74 1,89 2,24	1,19 2,14 2,66 2,92	1,02 1,53 1,87 2,32	0,72 1,52 1,89 2,70		2,25 2,14		

\* Gasworks gas for households, I<sub>1</sub> and I<sub>2</sub>\* Gas d'usines pour usages domestiques, I<sub>1</sub> et I<sub>2</sub>



## GENERAL DATA ON GAS CONSUMPTION 1980 (1)

(Estimation based on the updating of the energy input-output tables)

## DONNEES GENERALES SUR LA CONSOMMATION DE GAZ (ANNEE 1980) (1)

(Estimation sur base de la mise à jour des tableaux entrées-sorties de l'énergie)

	Terajoules (NCV)						Térajoules (PCI)
	Power stations	other energy branches (2)	Agriculture	Industry	Services	Households	TOTAL
B.R. DEUTSCHLAND *	559 481	80 842	1 058	696 640	130 165	383 670	1 851 856
FRANCE *	55 302	32 384	-	424 439	89 226	302 300	903 651
ITALIA *	81 943	27 596	634	501 670	32 253	298 735	942 831
NEDERLAND *	233 970	15 371	60 000	346 841	127 367	477 980	1 261 529
BELGIQUE/BELGIE *	66 420	5 000	1 600	172 000	17 000	103 800	365 820
UNITED KINGDOM *	23 224	12 737	-	606 101	157 918	820 000	1 619 980
+ IRELAND	-	10	-	341	102	2 530	2 983
* IRELAND	16 082	140	-	14 615	-	-	30 837
DANMARK +	-	99	-	1 028	303	3 484	4 914
	Centrales électriques	Autres branches de l'énergie (2)	Agriculture	Industrie	Services	Ménages	TOTAL

\* Natural gas  
+ Gasworks gas

\* Gaz naturel  
+ Gaz d'usine à gaz

(1) For further details see EUROSTAT publications "Energy balance-sheets based on the input-output tables 1975" and "..... 1980".

(1) Pour plus de détail voir publications EUROSTAT "Les bilans d'énergie d'après les tableaux entrées-sorties 1975" et "..... 1980".

(2) Network losses not included.

(2) Sans pertes réseaux.





CA8200002ENC