GAS PRICES

1976 - 1978

1979

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ISTITUTO STATISTICO DELLE COMUNITÀ EUROPEE

BUREAU VOOR DE STATISTIEK DER EUROPESE GEMEENSCHAPPEN

Luxembourg-Kirchberg, Boite postale 1907 — Tél. 43011, Télex: Comeur Lu 3423
1049 Bruxelles, Bâtiment Berlaymont, Rue de la Loi 200 (Bureau de liaison) — Tél. 7358040

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CONTENTS

I. INTRODUCTION

The present publication updates the previous study on gas prices 1970-1976, published by EUROSTAT in 1977[1]. It follows the same definitions, uses identical methods and has the same scope. It is therefore not necessary to repeat in detail all the explanations, to which the reader will be able to refer by reading the above-mentioned publication.

The present version sets out again only the general ouline of the study and indicates any changes made in the last couple of years.

In the chapter of each country, only the changes in regulations, taxation or tariffs have been explained. The absence of any explanation means that there has been no change since the previous study.

Although this publication is only an updating, the work involved proved to be quite considerable and could not have been accomplished without the cooperation of the gas companies which willingly provided information, explanations and calculations. We should like to express particular thanks to them for their understanding and the amount of work they put in on our behalf.

1 - Scope and locations

As in the previous study, the survey covers the nine Member States of the Community and the prices were recorded in 29 town or conurbations:

- FR of Germany	:	Hamburg, Hanover, Düsseldorf, Frankfurt, Stuttgart, Munich;
- France	:	Lille, Paris[2], Strasbourg, Marseilles, Lyons, Toulouse;
- Italy	:	Milan, Turin, Genoa, Rome, Naples;
- Netherlands	:	Rotterdam;
- Belgium	:	Antwerp, Brussels, Liège;
- G.D. of Luxembourg	:	Luxembourg city;
- United-Kingdom	:	London, Cardiff, Glasgow, Leeds, Birmingham;
- Ireland	:	Dublin;
- Denmark	:	Copenhagen.

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Office for Official Publications of the European Communities, BP 1003 Luxembourg

(2) Paris region

Four years are covered by this study :

1973 - 1976 - 1977 - 1978.

The prices are recorded and calculated in accordance with the tariffs, conditions and rules in force at the beginning of each year.

1976 is included as a link with the previous study, and also enabled any necessary corrections to be made to prices.

1973 serves as the base for the time series, since it represents the last year before the oil crisis and its repercussions on prices.

1973 and 1976 are important years because they constitute links with the previous study, which was presented on the basis of Gigacalories, whereas the new statistics are compiled on the basis of Gigajoules, in accordance with legal obligations. This question of the change in unit of measurement of energy is dealt with more fully below.

2 - Units of measurement of energy

The years 1976 - 1978 represent a period of revision of units of measurement, leading to a number of changes and a certain amount of confusion. A Council Directive of 18 October 1971 (No 71/354/EEC) drew up a list of prohibited and authorized scientific units of measurement. The date of application of this directive was deferred to the beginning of 1978, with a number of exceptions for the United Kingdom and Ireland. In the field of energy, this directive prohibits in particular the use of the calorie and its derivatives (thermie, therm, British thermal unit). The units still authorized for the measurement of energy are the Joule and the derivaties of the Watt, together with their decimal multiples.

During the period of transition and adjustment, we came across tariffs expressed in calories, BTU, kilowatt hours, Joules and cubic metres. It was therefore necessary to convert all the resulting prices into a single authorized common unit. In agreement with the United Nations and the International Gas Union, the Joule was chosen in the Community as the basic unit of measurement of energy.

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

The definition of the Joule is as follows :

work produced by 1 newton when its point of application moves 1 metre in the axis of the force (1 newton = force which in 1 second imparts an increase in velocity of 1 m/sec to a mass if 1 kilo).

This gives an 'electrical' definition of the Joule :

1 Joule = 1 Watt/sec.

In the present study, it was decided to express all prices in terms of Gigajoules (GJ), i.e. 10^9 Joules.

In order to give some idea of the size of the Gigajoule and to enable conversions to be made, the following equivalence table was drawn up :

1 GJoule	=	1 000 000	kilojoules
		0.239	Gigacalorie
		239	Thermal units
		278	kWh
		948 000	BTU (British thermal unit)
		35	kg of commercial coal
		25	kg of light fuel oil or heating oil.

The equivalence with coal and oil products is approximate and purely for guidance.

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%. Thus, the gaz prices shown in this study in GJ (GCV) can 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, which is 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_1 to D_4 and defined as follows, have been taken :

	ANNUAL CONSUMPTION	EQUIPMENT
D_1	- 8.37 GJ (i.e. 2 326 kWh or 2 Gcal)	cooking and
D_2(1)	- 16.74 GJ (i.e. 4 652 kWh or 4 Gcal)	water heating.
D_3	- 83.7 GJ (i.e. 23 260 kWh or 20 Gcal)	cooking, water heating
D_{3b}	- 125.6 GJ (i.e. 34 890 kWh or 30 Gcal)	and central heating.
D_4	- 1047 GJ (i.e. 297 500 kWh or 250 Gcal)	block central heating for at least 10 dwellings.

For industrial uses, a key point apart from the annual quantity consumed is the regularity with which the consumer withdraws 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 terms determine the peaks in consumption or the maximum daily and hourly intake acheived by the consumer.

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(1) For U.K. there is an additional standard consumer 33.49 GJ (9 300 kWh or 8 Gcal)

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 intake is 209 GJ (41 860/200), and a load factor of 1 600 hours means that the maximum hourly intake is 26 GJ (41 860/1 600).

Seven standard industrial consumers, coded I_1 to I_5 and with the following characteristics, have been taken :

	ANNUAL CONSUMPTION				MODULATION
I_1	- 418.60 GJ	(i.e. 116 300 kWh	or 100 Gcal)		no modulation laid down
I_2	- 4 186 GJ	(i.e. 1 163 000 kWh	or 1 000 Gcal)		200 days
I_{3-1}	- 41 860 GJ	(i.e. 11.63 kWh	or 10 000 Gcal)		200 days 1 600 h
I_{3-2}	- 41 860 GJ	(i.e. 11.63 kWh	or 10 000 Gcal)		250 days 4 000 h
I_{4-1}	- 418 600 GJ	(i.e. 116.3 kWh	or 100 000 Gcal)		250 days 4 000 h
I_{4-2}	- 418 600 GJ	(i.e. 116.3 kWh	or 100 000 Gcal)		330 days 8 000 h
I_5	- 4 186 000 GJ	(i.e. 1 163 kWh	or 1 000 000 Gcal)		330 days 8 000 h.

It can be seen that certain standard consumers have the same modulation for different volumes of consumption or, conversely, different modulations 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 modulation (in days or hours) the more regular the offtake of gas, thus enabling the consumer to obtain favourable prices.

Moreover, the modulation gives some idea of the use made of installations consuming gas. Thus, a very high modulation, 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.

Finally, the prices recorded in this study for standard industrial consumers 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 certain 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 receives a price rebate.

It should be noted finally that the standard industrial consumers referred to in this study do not include either power stations or 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 standard 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 amount of tax
- the selling price (inclusive of all tax).

The taxes referred to above are those levied directly on the sale of gas. 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. In all but a few cases (which are clearly indicated), the amount of taxes shown in this study corresponds to that of value added tax. With this dual Presentation of prices VAT may thus be either included or excluded (deductibility), depending on the aims of the economic analysis being carried out.

The results for each country are shown in national currency units 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. In this respect, the present study introduces a number of innovations which are outlined and explained in the following chapter.

II. UNITS OF VALUE

Since 1973, there has been a period of monetary instability. National currencies have undergone fluctuations which have distorted both statistics expressed in currencies and international price comparisons. New solutions are required for this new problem and are of particular relevance to this survey of gas prices.

Gas prices were first calculated and presented in national currencies whose real value - or purchasing power - depreciates to a greater or lesser degree in the course of time because of the general trend towards inflation. These price measurement units are therefore not stable, in contrast to scientific quantitative units which have a fixed definition and a constant value. A joule represented exactly the same amount of energy in 1973 as in 1978, whereas the Lira, for example, would not buy the same quantity of goods or energy in 1973 as in 1978. Consequently, the unit price of energy expressed in a national currency conceals a unstable ratio which is gradually eroded in the course of time. There is therefore a problem of comparability in time.

In addition, comparisons between countries of prices expressed in national currencies necessitate conversion into a common unit. There is no doubt that the usefulness of market exchange rates for this conversion is declining, resulting in a problem of comparison between countries.

A solution therefore has to be found to this dual problem in the form of a common unit which will permit comparisons of price levels with the minimum of distortion between countries and periods of time.

In theory a number of different units could be used :

- US dollar
- European Unit of Account (EUA)
- hour of work
- purchasing power unit

US DOLLAR

Since 1973, it has no charger been possible to consider the US Dollar as a stable reference unit as its exchange rates with the major world currencies have been floating since that date. This would not be too serious if the Dollar were not shaken by rapid and violent fluctuations. The use of the Dollar at the market exchange rate leads to large distortions. The fluctuations of the European currencies arre added to the Dollar's own fluctuations which are the result of financial, political, economic and even speculative phenomena outside Europe.

EUA

The European Unit of Account reduces the distortions mentioned above but does not eliminate them. In particular, the use of market rates to calculate the EUA produces fluctuations of the monetary parities which are influenced by international commercial transactions and capital movements. The latter have been particularly noticeable since 1973. The use of a unit influenced by international transactions therefore appears incompatible with the measurement of relative pices on internal markets. Calculations show that comparisons of price levels in EUAs give a picture very similar to that obtained using the Dollar.

Hour of work

The hour is a unit of time which has no intrinsic value. It must therefore be given an 'economic value' defined according to certain criteria. It is at this stage that the difficulties become apparent. From the outset, there are two confliciting viewpoints: an hour of work may be defined either as the average hourly labour cost or as the average hourly earnings of paid workers, sometimes with contradictory results. In both cases, the problems regarding scope and definition are difficult to solve in practice. Without entering into details which would be beyond the scope of this survey, it may be said that the definitions are not comparable because of the differences in the

systems of remuneration, work organization, taxation, social security, etc.

The calculations rapidly become extremely complex and require a large volume of detailed statistics which are not always available. Moreover, the calculations cover only a proportion of wage and salary earners who are not representative of all the consumers aimed at in this survey of gas prices.

To summarize, it may be said that a comparison of price levels expressed in hours of work is in fact equivalent to establishing a ratio between two different structures: the salary structure and the energy price structure (in this case, gas prices). These two structures are independent in time and space and the ratio between them will therefore vary without any correlation. Thus one would not be measuring the relative price levels of energy, but the trend in the ratio between two independant structures.

Purchasing Power Unit

The purchasing power unit is a unit of measurement of values which takes into account the relative purchasing power of the currencies of the countries being compared. Such a unit therefore eliminates under- and overestimates of exchange rates on the international market and is based on the price levels of the countries concerned. It shows the purchasing capacity of each currency in relation to that of other currencies.

Although such a unit is not perfect, it produces minimum distortion in time and between countries. After careful study, this unit was adopted for the international comparison of gas prices and will therefore be described in greater detail below.

Purchasing Power Standard (PPS)

The purchasing power parity is the ratio between two currencies which shows, for example, the number of BFRs equivalent to one DM. A Purchasing Power Standard was defined in order to facilitate comparison between countries and with the European Unit of Account.

It is defined as follows : The purchasing power parity rate between the Purchasing Power Standard and each national currency expresses the number of national currency units required to purchase in each country of the Community the same volume of goods and services as would be obtained with one Purchasing Power Standard in the Community. The PPS is fixed in such a way that the GDP of the European Community expressed in PPSs is identical to that expressed in European Units of Account (EUA). The PPS is therefore defined both:

- in terms of the basket of goods and services which formed the Community GDP for 1975 (economic definition);
- and in terms of the basket of currencies of the Member States fixed by decisions of the Commission and Council and calculated at the average exchange rates for 1975 (monetary definition).

The purchasing power of the PPS, defined using 1975 as the base year, varies from time to time according to the evolution of prices. The current PPS will therefore have a purchasing power equal to that of the PPS of 1975 divided by the GDP price index (base year 1975 = 100). There is therefore a relationship between the PPS and GDP and this is useful for economic analyses and especially for this study. It is possible to establish for any period under consideration the purchasing power parity rates between the currency of each Member State and the current PPS relating to the total flow of goods and services which constitute GDP. The parities have been calculated from the basic parities of some 1 000 goods and services, comprising 700 products included under the final consumption of households, 200 under gross fixed capital formation and 100 under collective consumption of general government. The conversion factors between national currencies and PPS for the years 1973, 1976, 1977 and 1978 which are covered by this study are given in Table No 30 in the Annex.

Prices in "constant" currency units

The table of conversion factors discussed in the previous chapter gives the chronological price series in current PPSs.

These current PPSs are comparable spatially but still contain distortions in time because of inflation in the nine member countries of the Community. Ad adjustment or 'deflator' must be used in order to ensure the stability of the currency unit in time.

This deflator has the effect of compensating for monetary erosion. The deflator chosen is the implicit price index of gross domestic product (GDP). This index is consistent with the definition of the PPS unit and thereby offers a positive advantage.

1973 has been chosen as the base year for this survey. Using the GDP price index it is therefore possible to calculate a new chronological series expressed in the 'constant'currency units of a base year. The GDP price indices for each country in the Community are given in Table No 30 in the Annex.

The calculation is carried out as follows:

(1) The current prices in national currency in the chronological series are divided by 100th of the GDP implicit price index for each year under consideration

(2) This deflated series is converted into PPSs using the conversion factor for the base year 1973.

In this way, one obtains a chronological price series in 'constant' PPSs using the base year 1973 and adjusted for inflation in each country.

Chronological price series

On the basis of the description given above, the results of this survey of gas prices in the Community are presented using three chronological series:

(1) A series at current prices in the national currency of each country (Tables 1 to 29 in the Annex). This seriesallows regional comparisons within a country and comparisons in time at face value (apparent price).

(2) A series in current PPSs (Tables 31,32,33,34 and 35 in the Annex) which allows international comparisons of price levels at a given date.

(3) A series in 'constant' PPSs (tables 33 and 36), using the prices for the base year 1973, which allows comparisons both between countries and in time. It is with this series that it is possible to carry out a comparative analysis of price trends in Community countries.

III. FEDERAL REPUBLIC OF GERMANY

a) Organization

There have been virtually no changes in the general organization of the gas industry over the past few years. It still has a three-level structure (production, importation and transmission, distribution), in which distribution is largely decentralized, being handled by a large number of companies (approximately 475). For the most part, these companies merely resell gas bought from transmission companies. However, four trends are emerging:

- the largest companies are increasing their dominance; thus, Ruhrgas AG, for example, accounted in 1977 for approximately 58 % of direct and indirect supplies of natural gas to the domestic market.

- The proportion of natural gas is continuing to increase, to the detriment of manufactured gases. In 1977, the quantity of natural gas available for the market totalled 1 790 000 TJ, compared with a figure of only 44 500 TJ for works gas. It is for this reason that all the prices recorded in this updated study relate solely to natural gas.

- Imports of natural gas are diversifying, with an increase in supplies from the USSR and the Norwegian zone of the North Sea (in 1978 imports of natural gas were broken down as follows : 59 % from the Netherlands, 24 % from the USSR and 17 % from Norway).

- The interconnection of the natural gas transmission grid has improved still further, thus providing better links between the various sources of supply.

b) Regulations

There have been no changes in legislation. Tariffs have to be drawn up and published for small customers only (standard consumers D_1 and D_2 in this survey). For the remainder, the prices are determined by special contracts or by private treaty; this makes it difficult to obtain the relevant data.

c) Taxes

Gas sales are subject to only one tax, namely value added tax, the initial rate of 11 % being increased to 12 % with effect from 1 January 1978. These rates are levied on the price net of tax. Value added tax is deductible in the case of industrial and commercial consumers.

d) Household prices - tariffs

As a result of the decentralization of gas companies and the freedom accorded to them to set prices, tariffs vary from city to city.

Two examples will serve to illustrate the tariff system applied to small customers, in accordance with the statutory provisions. These are two-part tariffs.

In Hamburg, three basic tariffs are offered :

prices in force in January 1978	tariff for small customers (Kleinverbraucher-tarif)	basic tariff 1 (Grundpreis-tarif 1)	basic tariff 2 (Grundpreis-tarif 2)
monthly standing charge	DM 2.85	DM 8.10	DM 13.60
commodity rate per kWh	Pf 9.80	Pf 5.67	DM 4.30

Basic tariff 1 is the most favourable for standard consumers D_1 and D_2 and has therefore been used in this study.

Above these levels of consumption, there are special or standard contracts (Sonderverträge) covering both individual and block central heating

In Düsseldorf, too, small domestic users have a choice of three tariffs :

Price in force in January 1978	domestic tariff 60 (Haushaltstarif 60)	domestic tariff 68 (Haushaltstarif 68)	domestic tariff 63 (Haushaltstarif 63)
Annual standing charge	DM 54	DM 150	DM 348
Commodity rate per m^3	Pf 67.70	Pf 37.52	Pf 29.37

A cubic metre of natural gas sold in Düsseldorf has an energy content of 9.4869 kWh, i.e. 34 153 kilojoules (or 8 159 kcal).

Tariff No 60 is advantageous up to 319 m^3 (standard consumer D_1).
Tariff No 68 is advantageous between 319 and 2 429 m^2 (standard consumer D_2).
Tariff No 63 is advantageous from 2 430 m^3 (standard consumer D_3).

The dividing line between published basic tariffs and standard contracts varies from location to location, but it is generally around a level of consumption of between 40 and 100 Gigajoules per year. In other words, in most cases standard contracts are better for gas-fired heating.

The results of the previous survey for Munich have been corrected. The 1973 and 1976 prices giver in the present study are amended accordingly.

e) Household prices - analysis

The results, expressed at current prices in DM, are set out in Tables 1-3 in the annex. They are unit prices per Gigajoule. These tables show substantial rises in selling prices between 1973 and 1978, ranging from 30 to 77% depending on the location and the standard consumer.
These increases are not constant over time; they are smaller in 1977 and 1978, following the considerable readjustments introduced as a result of the 1973 'crisis'.

In certain locations (Hanover, Düsseldorf, Munich), it can even be seen that the increase in the selling price between 1976 and 1978 reflects only the increase in the rate of VAT, i.e. + 1%.

This means that in these cities the price net of tax remained unchanged between 1976 and 1978.

In the other cities (Hamburg, Frankfurt, Stuttgart), the increases recorded between 1976 and 1978 ranged from 2 to 14 %.

The increases are not uniform from one city to another, which means that the price movements are not parallel. In Frankfurt and Munich, the increases recorded between 1973 and 1978 do not seem as substantial as in the other cities. Consequently, Munich is now the least expensive location observed in the survey, as a result of the arrival of Russian gas in Bavaria. Stuttgart remains the most expensive location, owing to transmission costs. It is situated in the region which is furthest from the sources of supply (gas fields and points of import).

The classification of the locations on the basis of price levels is changed owing to the differences in the increases. However, Düsseldorf is still classified in a mid-table position, thus providing a further reason for choosing this location for the international comparison.

The geographical dispersion of prices has not diminished to any appreciable extent and the gap between the locations at the opposite ends of the scale remains wide, e.g. a difference of DM 10/GJ between the most expensive and the least expensive location, i.e. + 50% for the smallest consumers (D_1). The dispersion of prices is not so great for larger consumers who use gas for heating (D_3, D_4).

Except in Frankfurt and Munich, the price increases recorded between 1973 and 1978 are more marked for heavy consumers (+ 40 - + 77% for D_4) than for small consumers (+ 30 - + 58% for D_2). As a result, tariff degression is less pronounced. Degression means the reduction in the unit price as consumption increases (effect of the two-part tariff formulae). This degression can be measured by the relative reduction in the unit price between an annual consumption of 8 GJ (D_1) and one of 1 047 GJ (D_4).

Degression of prices (% D_4/D_1)

	1973	1978
Hamburg	- 70	- 64
Hanover	- 63	- 59
Düsseldorf	- 69	- 64
Stuttgart	- 72	- 63
Frankfurt	- 70	- 70
Munich	- 62	- 62

The aforegoing remarks, based on Tables 1-3 in the annex, give a general idea of trends at current prices, i.e. from the consumers' point of view. It is also interesting to note the trends at 'constant' prices, i.e. using a deflator designed to cancel out the effect of monetary devaluation. The deflator used is the implied price index of gross domestic product (GDP). The GDP index for the FR of Germany went up from 100 in 1973 to 125.2 in 1978, whereas the indices of gas selling prices stood at between 130 and 177 in 1978, depending on the location and the standard consumer. In all cases, gas showed an increase not only at current prices but also at constant prices. In other words, gas prices went up by more than the prices for goods and services as a whole during the period 1973-1978.
However, the period in question was characterized by 1) between 1973 and 1975, a fierce upward readjustment of gas prices, both current and constant, 2) between 1976 and 1978 : moderate changes in current gas prices, even resulting in some cases in decreases at constant prices.

For example, in Hanover, Düsseldorf and Munich gas selling prices went up by only 1% between 1976 and 1978, whereas the GDP index went up by 6% during the same period.

The indices of current gas selling prices and the GDP price index are not therefore developing at a parallel rate.

The same is true of the average income of the gas companies and the selling prices to standard consumers. Calculated in the form of an index, the average income (inclusive of VAT) from sales to households developped as follows:

1973 = 100
1976 = 140.7
1977 = 146.1
1978 =

It can thus be seen that the average income increased at a slightly slower rate than selling prices. This lack of alignment is a result of the increase in the volume of gas bought by consumers, who thus benefit from the effect of tariff degression. This is confirmed by the statistics on gas consumers. Out of a total of approximately 7 million domestic consumers, those using gas for heating numbered 4 million at the end of 1977, i.e. 300 000 more than in 1976. The growth of gas-fired heating results in a reduction in the unit price and average income. A consumer who installs gas-fired heating sees his annual consumption increase from 16 to 127 Gigajoules, for example, while the price he has to pay falls from DM 24 to DM 12 per Gigajoule.

Increases in selling prices do not completely offset the effect of tariff degression. The purpose of the slight reduction in tariff degression noted above is to counteract this effect.

f) Industrial prices - tariffs

The system of price setting has not changed. There are no published tariffs apart from a small number for business uses (Gewerbetarif), which apply to the smallest consumers (level I_1). Above this level, the selling prices are determined by special contracts (Sonderverträge, Sondervereinbarungen) which vary according to location and the conditions of supply. Moreover, in the same region or location, industrial consumers may be supplied either directly by a gas transmission company (Ferngasgesellschaft) or by a local distribution undertaking (Ortsgasunternehmen). Transmission companies' direct sales to industry total around 13 thousand million m^3, compared with 7.5. thousand million m^3 sold by local distribution undertakings. The transmission companies' main customers are heavy industries, in particular the chemical industry, the iron and steel industry and the ceramics industry (90% of their sales), while the distribution undertakings serve all industries and reach a market which is much more diversified and therefore more representative.

The prices recorded in the survey represent the latter market. They are normally higher than the prices resulting from the special agreements concluded by the heavy industries connected directly to the transmission grid.

From the point of view of price setting, there are therefore three levels for industry :

- small consumers (I_1 and possibly I_2) = published standard contracts
- medium and large consumers (I_2-I_4) = special contracts with distribution undertakings
- very large consumers (I_4, I_5 and above) = agreements with transmission companies (1)

g) Industrial prices - analysis

The results, expressed at current prices in DM per Gigajoule, are shown in Tables 4-6 in the annex. Although some progress has been achieved in comparison with the previous study, it can be seen that these results contain certain gaps. Some data are missing, in particular for standard consumption level I_5, which still comes under the rules of confidentiality relating to agreements with transmission companies.

The prices for Munich were corrected between 1976 and 1978 and replace the estimates published in the previous study.

In Frankfurt, since 1/1/1977, small industrial consumers I_1, have been able to benefit from special contracts which lead to lower prices than the tariff for professional uses (Gewerbetarif). Now these special contracts are more representative of the market, as the number of customers being supplied under the old tariff is diminishing. This leads to a break in the series. In order to link the new and old price series, the two results are given below :

		tariff for professional use (Gewerbetarif)	new special contracts (Sonderverträge)	DM/GJ
I_1	1977	13.35	10.05	
	1978	14.09	10.45	

Although these few gaps present an obstacle to systematic analysis of the results, a number of general remarks may be made.

In all cases, there is a widening of the price differential between small consumers of type I_1 and other industrial consumers - a widening which reflects the two systems of price setting, namely standard contracts closely related to household tariffs for I_1 and special contractual agreements for the other types of consumers.

(1) Not included in this study

Considering the price trends over the period 1973-1978, the overall conclusions remain the same as in the previous study, namely :

- sharp increase in selling prices, ranging from 30-160% depending on the location and standard consumer ;
- even sharper increases the higher the volume of consumption (for I_4, doubling of prices is not unusual);
- reduction of tariff degression ;
- accentuation of the regional dispersion of prices.

It must be added, however, that the increases were not so pronounced from 1976 onwards. Between 1976 and 1978, the rates of increase were much more moderate, e.g. 1% in Hanover, 6-7% in Stuttgart, 7% in Munich, around 10% in Düsseldorf.

The tariff degression on volume can be expressed by the unit price reduction granted when annual consumption increases. Thus, between I_2(4 186 GJ/year) and I_4(418 600 GJ/year) the price reduction was between 18 and 30% in 1978, compared with about 40% in 1973. The degression curves thus appear much less steep.

Tariff degression for modulation, i.e. the price reduction granted for improved regularity of gas offtake, can be observed by comparing the respective prices for standard consumption levels I_{3-1}, and I_{3-2} and I_{4-1} and I_{4-2}. This reduction is still generally slight, e.g. -3% in Frankfurt and -5% in Düsseldorf in 1978.

The geographical dispersion of natural gas prices is still much wider for industry than for households. In 1978, prices at the most expensive locations were about 70% higher than prices at the cheapest location covered by the survey. The interconnection of the transmission grids has not resulted in harmonization of selling prices. Generally speaking, Hanover and Munich offer lower prices and Stuttgart higher prices for the same reasons as in the case of domestic tariffs. Prices in Düsseldorf are more or less in the middle of the range.

An instructive comparison can be made between the indices of current selling prices (taking Düsseldorf as an example), the index of average income from sales to industrial customers and the price index of gross domestic product (GDP).

	GDP price index	Average income from industrial customers (inclusive of VAT)	Index of selling prices (Düsseldorf) I_2	I_3	I_4
1973	100	100	100	100	100
1976	117.9	215	158	169	207
1977	122.1	224	163	174	219
1978	125.2	.	174	186	230

It can be clearly seen that the upward trend in the prices of gas for industrial uses was much more pronounced than the increase in GDP. This means 1) that gas prices have increased more rapidly than the prices for goods and services as a whole (even after 1976); 2) that gas prices are also increasing in 'constant' terms, i.e. that the price rises more than offset the reduction in the purchasing power of the Deutschmark (monetary devaluation). A further conclusion can be drawn from this comparison of indices. The average revenue seems to be increasing by more than the unit prices for the standard consumers covered by the survey. This can be explained by 1) the distinct reduction in tariff degression; 2) the preponderance of large consumers (who are subject to the highest increases); 3) the stagnation in average consumption per customer.

This last point is confirmed by the quantitative statistics on industrial consumption.

Natural gas consumed by industry (including self-producers' power-stations)

	TJ (GcV)	(n+1)/n
1973	591 888	
1974	653 079	+ 10.3 %
1975	658 973	+ 0.9 %
1976	666 357	+ 1.1 %
1977	671 728	+ 0.8 %

IV. FRANCE

a) Organization

There has been no change in the organization of the gas industry. However, a number of changes in the pattern of supply are to be noted.

- The proportion of imported natural gas is increasing and accounted for two-thirds of supplies in 1978.
- Gasworks gas is disappearing and accounted for only about 2% of total supplies in 1978. This is why this updated study now relates to natural gas only.
- Supplies of natural gas are diversifying as regards both origin and point of entry (in 1978, south-west France 34 %, Netherlands 47 %, Algeria 13 %, Norway 6 %); this may influence the regional structure of prices.

b) Regulations

There has been no change since the last study.

A relaxation of the regulations relating to price setting is currently being studied at government level. Gaz de France is preparing a change of the tariff structure, linked to a liberalization of energy prices and taking account of changes in the pattern of supply.

c) Taxes

Gas sales were subject to 17.6 % value added tax throughout the reference period, based on the price net of tax. VAT is deductible in the case of industrial and commerical consumers.

d) Households prices - tariffs

There has been no change in the tariff system. From 1 January 1978 gas has been metered and invoiced in kWh instead of thermies (1 kWh = 0.86011 thermie = 3 600 kJ).

Price increases have been approved, thus leading to a revision of tariff standing charges. By way of example, the table below gives the tariff components applicable to natural gas in the Paris region at the beginning of 1978 :

Standard consumer	Tariff	Standing charge FF/year	Commodity rate FF/GJ
D_1 D_2	Bo	109.32	28.35
D_3	3G	745.56	12.92
D_4	Heating	1318.02	13.71

e) Household prices - analysis

The results, expressed in current prices, are given Tables Nos 7-9 in the annex. After levelling off in 1975, prices began to move again, with varying increases during 1976 and a flat-rate increase of 6.5% applied on 1 April 1977 to all domestic consumers and in all locations (even Strasbourg).

Over the period covered by this study, the rates of increase were as follows:

	Selling prices in the Paris region				
	D_1	D_2	D_3	D_{3b}	D_4
% 1978/1973	+ 62	+ 62	+ 69	+ 75	+ 120
% 1978/1976	+ 14	+ 14	+ 15	+ 19	+ 6,5

In general, the increases are greater the higher the volume of gas consumed : this leads to a reduction in tariff degression. The reduction in unit price between the two standard consumers at the opposite ends of the scale (% D_4/D_1), which was - 73% in 1973, fell to -64% in 1978 in the Paris region.

As the increases in 1976 were at different rates, there were a number of changes in the ranking order of the locations. Disregarding Strasbourg, which has its own tariff system, prices at the other locations are converging. In other words the tariff system operated by Gaz de France is tending to standardize prices throughout the country. Thus, in 1978, the prices paid by small consumers (D_1 D_2) were almost indentical everywhere, while the geographical differences in prices were reduced to a few % for consumers using gas for heating purposes (D_3 D_4).

The diversification of natural gas supply points and the interconnection of the transmission grid are bringing about a geographical standardization of prices.

A comparison between the indices of gas selling prices, the price index of gross domestic product (GDP) and average income gives the following results :

	GDP Index	Average income(1)	Selling price in the Paris region				
			D_1	D_2	D_3	D_{3b}	D_4
1973	100	100	100	100	100	100	100
1976	138.3	146.8	142.6	142.1	146.6	147.6	206.9
1977	150.5	153.3	152.4	151.8	158.9	164.7	206.9
1978	164.8	.	162.3	161.6	169.2	175.3	220.3

It can be seen that the prices paid by small domestic consumers ($D_1 D_2$) are developing more or less parallel to the GDP price index; this means that the increase in selling prices is merely offsetting monetary devaluation. In other words, these prices are remaining the same in constant terms (base 1973). This is not so in the case of consumers using gas for heating purposes (consumers $D_3 D_4$): the indices of selling prices are going up at a faster rate than GDP. In this case, gas is becoming more expensive not only at current prices but also at constant prices. The trend in average income is parallel to that in selling prices for small domestic consumers ($D_1 D_2$). This can be explained by a number of contradictory factors.

The proportion of small consumers is still fairly high in France. At the beginning of 1978, out of a total of approximately 8 million domestic gas consumers only 2 million had individual gas-fired central heating, while around 800 000 dwellings were served by block gas-fired central heating. Although gas-fired central heating is expanding, the average consumption per customer is increasing at a moderate rate : + 19% between 1973 and 1978, i.e. an annual rate of increase of 3%. A substantial increase in average consumption per customer tends to reduce average income if the tariffs are not modified. In France, the reduction in tariff degression easily counterbalanced the effect of the moderate increase in average consumption per customer.

(1) Gaz de France, domestic consumers, net of tax.

All this shows that the average income from sales to domestic consumers is not declining in constant terms (comparison with GDP, base 1973).

f) Industrial prices - tariffs

The locations chosen for the study still come under three tariff systems :

Lille, Paris, Lyon, Marseille, Toulouse (I_1 I_2 I_3) : Gaz de France
Toulouse (I_4 I_5) : société nationale du gaz du sud-ouest
Strasbourg : municipal company

There has been virtually no change in these tariff structures since the last study. Only the standing charges have been revised.

Gaz de France still has two sets of tariffs, type B for small industrial consumers (I_1 I_2) and type S (under contract) for large industrial consumers (I_3 I_4 I_5).

Tariff B_3 is being phased out and replaced by a tariff of type B_2. At the beginning of January 1978, tariff B_2 for the Paris region was as follows :

standing charge	commodity rate
1 010.40 FF/year	winter 1.608 centimes/MJ
	winter 1.464 centimes/MJ

A typical breakdown of consumption is 55 % in winter and 45 % in summer.

The formulae for the contract tariffs of the S type, with their two variants R ('réseau' = connected to the distribution network) and T ('Transport' = connected to the transmission grid), have remained identical (see previous study). Only the indexes have had an effect on prices). In January 1978, the prices were obtained by applying the value N = 259.9 plus an increase in absolute terms of 0.161 centimes per Megajoule for the 'réseau' variant (S_2R) and N = 216.5 plus an increase in absolute terms of 0.2867 centimes per Megajoule for the 'transport' variant (S_2T).

g) Industrial prices - analysis

The results are shown, at current prices, in Tables No 10, 11 and 12 in the annex. These tables show a general upward trend in prices. This trend is not the same either in time or space or in relation to standard consumption levels.

In time, the trend is characterized by substantial increases during 1974, a levelling off in 1975 and more moderate increases from 1976 onwards.

In space, the increases were at varying rates in order to reduce regional price differences. Thus, the increases were lowest in the Paris region and highest in Toulouse. In 1978, price differences for Gaz de France's contract tariffs ($I_3 I_4 I_5$) between the locations at the opposite ends of the scale were reduced to less than 10%. The diversification of supplies and the interconnection of the transmission grid have allowed progress towards harmonization of prices to take place. Even the prices charged in Toulouse by the Société nationale du gaz du sud-ouest have caught up with those of Gaz de France.

The ranking order of the locations chosen for the survey is modified as a result of the varying increases. However, in 1978, the regional dispersion of prices became very slight and prices were concentrated in an increasingly narrow range.

The higher the volume of consumption, the more marked the increase in prices ; this obviously leads to a reduction in tariff degression. This degression can be expressed as the difference in unit price between the standard consumers at the opposite ends of the scale. The reduction in unit price (% I_5/I_1), which ranged from - 60 to - 70% depending on the city in 1973, was appromately - 50% in 1978 in all the locations.

It should be pointed out that the price increases leave gas in a favourable competitive position vis-à-vis solid and liquid fuels. Consequently, consumption of gas in industry continues to increase despite the economic crisis. Between 1973 and 1978, the increase in consumption was around 55%. This increase does not stem from a rise in the number of customers (which is still fluctuating around 15 000 in the country as a whole) but from an increase in average consumption per consumer.

This should lead to a relative contraction in average income per unit of gas sold. In fact, this is not so. Average income continues to increase as a result of both the rise in selling prices and the reduction in the degression curves.

In France, it is difficult to make a systematic and uniform comparison of gas selling prices and the price index of gross domestic product (GDP), since the development of gas selling prices did not run parallel in all the locations (in order to reduce the geographical dispersion of prices). However, with a few exceptions (in particular I_1 and I_2 in the Paris region), it may be stated that the selling prices of gas to industry are outstripping prices for the whole range of goods and services, as measured by the GDP index. In other words, natural gas is becoming more expensive not only in current but also in constant terms (base 1973). This is in line with the general trend towards readjustment of energy prices.

V. ITALY

a) Organization

There have been no changes since the last study. Gas is still supplied through two channels :

- users consuming over 700 000 m^3 a year (i.e. approximately 27 000 Gigajoules) are supplied with natural gas directly by SNAM, with tariffs standard throughout the country;

- other consumers are supplied, either with natural gas (Genoa, Turin, Rome) or with works gas (Milan, Rome) or with natural gas mixed with air (Naples) by local distribution undertakings with differing tariffs.

However, in certain conurbations, e.g. Genoa and Turin, large industrial consumers ($>$ 700 000 m^3 a year) may be supplied by local distribution companies. For example in Turin, 1/6 of industrial consumption is supplied by ITALGAS and not by SNAM.

The pattern of natural gas supplies changed in 1978: domestic production 48 %, imports from the Netherlands 13 %, from the USSR 30%, for Libya 9 % (in 1973 domestic production accounted for 88 %).

b) Regulations

Several regulations issued by the Interministerial Price Committee (CIP), in particular No 20/1975 and No 32/1977, laid down a new method of determining and revising the tariffs for gas distributed by urban network.

The distribution undertakings are classified in nine categories according to the nature of the gas they sell, in particular natural gas without further processing, natural gas diluted with air, and manufactured gas, which are relevant to this study.

Depending on its category, number of consumers and average sales per consumer, each company has to determine a 'standard cost' which represents the average cost of producing and distributing the gas. Average income from sales must be correlated to the standard cost, which is calculated on the basis of the following components :

raw materials
personnel costs
amortization of capital
operating expenditure
overheads.

The CIP regulation sets out the mathematical formulae to be used for calculating each of these components (for further details, see Gazzetta Ufficiale della Repubblica Italiana No 186 of 9 July 1977).

All the distribution undertakings have to submit to the Provincial Price Committee, before 30 April each year, the figures relating to the standard cost and proposals for the tariff structure together with the corresponding values. The Provincial Price Committee gives its opinion within 30 days, after varifying the figures and checking that the tariff structure does not result in an average income which is higher than the standard cost. The tariffs are approved before 30 June each year.
Special tariffs, e.g. for heating, cannot be lower than the cost of the raw material, plus 20 % for natural gas and 30 % for manufactured gas.

Tariff structures based on minimum guaranteed consumption are not allowed. A maximum charge of LIT 40 per month and per 'flame' is authorized for the meter rental. Consumers who use gas solely for cooking will have to pay a meter rental equivalent to 10 'flames'. Any standing charge (quota di servizio) is subject to a maximum of LIT 50 per month and per 'flame'. This standing charge is justified by the need to reduce the burden on regular consumers by passing on a considerable portion of the fixed costs to irregular consumers, thus spreading these costs more evenly among users.

It is therefore a system based on production costs, designed to cover all costs by average income, but leaving each distribution undertaking a certain measure of freedom in applying the system, in particular as regards spreading the revenue among the various categories of consumers ; in other words, they are free to choose the rate of degression.

c) Taxes

Since the previous study, the most important change has been the introduction of a consumption tax (imposta di consumo) on sales to households. This tax came into force in February 1977 at a rate of LIT 30 per m^3. Being based on a unit of volume, its effect on the price per unit of energy is greater the lower the energy content of the gas. This effect is particularly noticeable in Naples where the gas distributed has a lower calorific value than in the other cities. The consumption tax is included in the basis for calculating value added tax.

On the same date, value added tax was increased from 12 to 14 % for sales to non-domestic consumers. VAT on sales to households remained unchanged at 6%.

These rates are calculated on the price net of VAT. VAT is deductible in the case of commercial and industrial consumers.

d) Household prices - tariffs

A new tariff system has been applied progressively since 1976. It has entailed substantial price changes. It leads to widely differing prices from one city to another, firstly because the 'standard costs' are not identical and secondly because the spread of costs among the various categories of consumers follows variable patterns (effect of standing charge on degression).

The system lead to two- or even three-part tariff formulae, comprising:

meter rental
standing charge (quoti di servizio)
commodity rate (sometimes in block form).

The determination of the number of 'flames' is important for the calculation of the first two components of the formulae. The contractual number of flames taken into account is determined freely by each distribution undertaking, provided the statutory limits are observed. This number may therefore differ from one location to another. It may also differ between the component relating to meter rental and the standing charge (quote di servizio). The standing charge is degressive and not proportional to the number of flames.

For guidance, the number of flames corresponding to the standard consumption levels is roughly as follows :

D_1	10 flames
D_2	10-20 flames
D_3	20-40 flames
D_{3b}	40-50 flames
D_4	100-300 flames.

Finally, it should be noted that a number of corrections have been made to the 1976 prices for Genoa.

e) Household prices - analysis

The results are given, at current prices, in Tables Nos 13-15 in the annex. The decentralization of the decision-making process and the freedom to structure tariffs within the framework of the law lead to wide differences from one location another, as regards both price levels and trends. Moreover, the introduction of the new tariff system was staggered from 1975 onwards and the resulting price adjustments occurred at different times from one location to another. The price trend curves are therefore very irregular and difficult to analyse. However, disregarding the irregularities, the dominant trend is upwards. Contrary to the situation observed in the other countries, this upward movement is, with certain exceptions, as pronounced between 1976 and 1978 as during the period 1973-1976. This is a result of the application of the new tariff system, based on standard costs, pursuant to the statutory provisions. Overall, the increases are more marked for the biggest domestic consumers (heating). In all the locations, the small consumers (D_1 D_2) were protected for social reasons and lower rates of increase were applied to them.

As a result, there was a substantial reduction in tariff degression for volume of consumption. In certain cases, there were even progressive tariffs. For example, in Rome in 1978, the unit price of natural gas was slightly higher for consumption of 16 GJ/year than for 8 GJ/year. Again in Rome, the degression of the price of works gas is more or less nil, i.e. the unit price does not vary much as a function of the volume consumed. In other cities, the degression rates are extremely low (e.g. reduction of 13 % in Turin between D_1 and D_4). This fact is exceptional enough to warrant attention being drawn to it. However, it should be borne in mind that tariff degression calculated on the selling price is distorted by the new consumption tax. This specific tax is levied on the cubic metre and its rate therefore varies as a function not only of the energy content of the gas but also of the structure of the two-part tariff formulae. As a result of its method of calculation, this tax does not in fact have any effect on the fixed components of the tariffs (unlike VAT which is strictly proportional). This has two consequences : 1) variable rates of taxation depending on the consumption level and the city ; 2) varying increases in selling prices form one city to another.
In 1978, in the locations covered by the survey, the rate of taxation ranged from 14 to 44 % of the selling prices, depending on the location and type of standard consumer. The effect of taxation is no longer neutral. Another peculiarity; a modification of the tariff formula is sufficient to change the rate of taxation.

As a result of all these changes, the ranking order of the locations according to price is no longer the same. However, two groups can be distinguished: the cities where natural gas is distributed without further processing (Turin, Genoa, Rome) and which enjoy lower prices, and the cities with manufactured gas where prices are higher (Milan, Naples and part of the Rome conurbation). However, in Italy the dividing line between types of gas is indistinct, since in Naples, for example, natural gas and air are mixed in the gasworks.

The geographical dispersion of prices is still very wide and even tended to increase in 1978. The differences in unit prices for the same standard consumption level can be as much as double between the locations at the opposite ends of the price range.

There are three reasons for this :

1) the different types of gas;

2) the differing tariff formulae based on 'standard costs';

3) the disparity in taxation due to the tax on consumption.

As a result of the decentralization and independence of gas distribution undertakings, it is impossible to spread prices evenly throughout the country.

In view of the wide range of movement in gas selling prices in the various locations, a comparison with the development of the index of gross domestic product (GDP) would prove very difficult. Without going into details, it may be pointed out, however, that the prices paid by the smallest domestic consumers (D_1 D_2) generally went up by a little more than the GDP index, which means that the increases merely offset the devaluation of the lira up to 1977.

From February 1977 onwards, gas selling prices started to go up as a result of changes in taxation. Furthermore, during the period under review (1973-1978) the selling prices of gas for heating (D_3 D_4) went up in all cases by more than the GDP index, thus reflecting an increase not only at current prices but also at constant prices (base 1973).

f) 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 local distribution companies and for whom the tariffs differ from city to city (the tariffs are two- or three-part, with a standing charge, a charge for meter rental and a degressive commodity rate).

2) Other industrial consumers (I_3 I_4 I_5) who are supplied mainly by SNAM, which applies a standardized national tariff.

There was a number of changes in the SNAM's tariff system during the period under review.

Up to the middle of 1976, the non-interruptible industrial tariff consisted solely of a non-indexed price per standard m^3 (38 100 kJ), with different rates for four and, later, three stages of annual consumption. After that and up to the end of 1977, the price was indirectly linked to that of fuel oil by means of an additional mechanism.

Since January 1978 the following tariff structure has been in force for non-interruptible types of consumption :

Consumption block	Price
< 3 000 000 m^3/year	$P_I = P \times 1.03$
3 - 25 000 000 m^3/year	$P_{II} = P$
> 25 000 000 m^3/year	$P_{III} = P \times 0.967$

with $P = 0.845 \times 1.077 \ (0.7\ ATZ + 0.3\ BTZ + 0.8\ T) \times 0.9842$

where

P = price of natural gas in LIT per standard m^3 of 38 100 kJ (GCV) (9 100 kcal GCV)

0.845 = ratio of calorific equivalence, in terms of NCV, between natural gas and fuel oil

1.077 = factor of qualitative advantage of natural gas over fuel oil;

ATZ, BTZ = average price of 1 kg of high- and low-sulphur fuel oil at coastal depot, charged by the Milan branch office of AGIP during the month preceding consumption of the gas ;

T = average value of the transmission price of 1 kg of high-sulphur fuel oil from the coastal depot to the user's premises, taken from the wholesale price lists of the Milan Chamber of Commerce during the month preceding consumption of the gas;

0.9842 = discount factor of 1.58 %.

For interruptible types of industrial consumption, the price is given by the formulae :

$$P = ATZ \times 0.91$$

These tariff formulae do not apply to either supplies to power stations (ENEL tariff) or deliveries to local gas distribution undertakings, which are not included in this study.

Since January 1976 the price of gas for chemical synthesis has been aligned to that of the tariff for non-interruptible industrial uses (except, however, for production of fertilizer for the domestic market, for which the price of natural gas has remained frozen at around 38.2 Lit/standard m^3).

It can be seen that industrial tariffs do not include any component for the regularity of gas offtake (modulation). Consequently, the price levels vary solely as a function of the volume of consumption.

g) Industrial prices - analysis

The results, at current prices, are given in Tables No 16-18 in the annex. For small industrial consumers (I_1 I_2) the prices appear to vary considerably from one city to another. There are practically no common features apart from the very sharp rises recorded between 1973 and 1978. Even the rates of increase vary widely ; twofold to fivefold increases in prices in five years, depending on the location. The upward trend is least pronounced in Genoa, which thus in 1978 became the least expensive of the cities covered by the survey. The increases stem from the progressive application of the new tariff system, the heavier burden of costs and the increase in taxation. The regional dispersion of prices is very wide and increased further in 1978. The reasons for this dispersion are : 1) the legal framework which gives local undertakings a certain measure of freedom in setting prices; 2) the differences in standard costs which also depend on the number of consumers and their average consumption; 3) the different types of gas distributed (for example, manufactured gas costs approximately twice as much as natural gas).

On the other hand, tariff degression is particularly low in all the locations. In 1978 when consumption increases tenfold (I_1 to I_2), the unit price goes down by only a few percent.

In Naples there are practically no small industrial customers apart from bakeries which are subject to a special tariff. As the prices are not significant, they have not been included in Table No 17 in the annex.

The prices applying to large industrial consumers (I_3 I_4 I_5) follow a completely different, though uniform, pattern . SNAM's tariff structure is identical throughout the whole of the country.

Price increases were very substantial :

fivefold increase between 1973 and 1978 ;
up by about 80% between 1976 and 1978.

These increases are the result of several factors :

- an initial alignment of tariffs with oil prices, followed by an index system based on fuel oil prices in the tariff formulae ;
- increase in supply costs for natural gas - imports from other countries (Netherlands, Russia, Libya) increased because domestic production is no longer sufficient to meed demand;
- increase of two points in the rate of VAT in 1978.

Degression for the volume of consumption remains very slight and occurs solely as a result of the blocks of consumption scheduled in the tariff. The reduction in unit price between I_3 and I_5 (i.e. for a hundredfold increase in consumption) was - 5.4% in 1978, compared with -6.4% in 1973.

Prices differ only as a function of the volume of consumption, irrespective of the regularity of gas offtake. The tariffs do not include any modulation formula, hence similar prices are observed for I_{3-1} and I_{3-2} and for I_{4-1} and I_{4-2}.

The capacity of the gas pipeline network is sufficient to absorb peak demand, which can be cushioned by reduced deliveries to power stations and those industrial customers who opted for the interruptible tariff.

In exceptional cases some industries are supplied by local distribution companies which apply their own tariffs, although these result in prices similar to those charged by the SNAM. The prices of AZIENDA MUNICIPALIZZATA in Genoa illustrate this :

Selling prices to standard consumers in LIT/GJ

Beginning of	I_{3-1}	I_{3-2}	I_{4-1}	I_{4-2}	I_5
1977	1 888	1 879	1 798	1 797	1 789
1978	2 045	2 035	1 922	1 923	1 911

The slight differences between I_{3-1} and I_{3-2} or between I_{4-1} and I_{4-2} stem from the meter rental which varies according to the maximum intake and, therefore, the load factor.

In contrast with the situation for domestic and small industrial consumers, the price system for large industrial users is thus standardized and simple.

Finally, it would seem useful to compare trends in natural gas prices with the price index of gross domestic product (GDP).

	GDP	Selling price (SNAM)		
		I_3	I_4	I_5
1973	100	100	100	100
1976	163.9	267	275	273
1977	193.8	400	411	408
1978	216.1	489	502	495

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 1973). However, it should be borne in mind that natural gas was supplied at a particularly low price in 1973 for two reasons : firstly, the quantities available from national gas fields were sufficient at that time, and, secondly, in order to compete with petroleum products which had not yet felt the impact of the crisis and were cheap in Italy at that time.

VI. NETHERLANDS

a) Organization

There have been no changes and the industry is still organized on three levels :

1) production of natural gas (NAM)

2) transmission, import and sale to the largest users connected to the transmission grid (GASUNIE)

3) distribution (local companies or municipal undertakings).

In spite of a certain amount of decentralization, the tariff system is standardized and the prices given for Rotterdam are representative of the country as a whole (with reductions, however, in areas near the Groningen gas fields).

Since September 1977 the Netherlands has been importing natural gas from Norway (approx 60 000 TJ in 1978, i.e. 4% of domestic gas consumption).

These imports are being stepped up as part of a policy to conserve national gas fields.

b) Regulations

There have been no changes since the last study.

c) Taxes

During the period covered by the study, i.e. 1973 to the beginning of 1978, value added tax (Belasting toegevoegde waarde) was levied at the rate of 4% on the price net of tax. However, this rate was increased to 18% with effect from 1 April 1978. This tax is deductible in the case of industrial and commercial consumers.

In addition, a special air pollution levy (Heffing brandstoffen luchtverontreiniging) has been imposed since 1975 at a rate of Fl 0.30/1 000 m^3, i.e. approximately Fl 0.01/Gigajoule. In the case of sales to households this levy is invoiced by the gas distributor in the same way as value added tax.

For large consumers (for industrial and other purposes) the levy is already included in the component P of the tariff formulae and, therefore, in the selling price net of tax. In certain cases (as when the gas is used as chemical feedstock) this levy is refunded to the consumer.

d) Household prices - tariffs

The tariff system has not been restructured and is still of the two-part type. However, the basic rates were modified with effect from 1 July 1977, as follows :

Standard consumer	Block of annual consumption	Standing charge HFL/year	Commodity rate cents/m^3	Applied
D_1 D_2	0-600 m^3	42	27	up to 1/7/77
D_3	601-170 000 m^3		20	
D_1 D_2	0-600 m^3	45	27	after 1/7/77
D_3	601-170 000 m^3		23	

(One cubic meter has an energy content of 35.17 megajoules GCV at 0°C)

On the same date, the tariff for bulk delivery to blocks of flats (valid for D_4) was also modified as follows :

annual standing charge : HFL 12 per dwelling (with a minimum of HFL 150 per building)

commodity rate : 23 cents per m^3.

e) Household prices - analysis

The results are given, at current prices, in Table No 19 in the annex.

The tariffs are not index-linked but are subject to periodic revision, with different changes in the two components of the two-part formulae; this has led to :

1) spasmodic price trends ;
2) a slight disparity in the trends of prices for the various standard consumers.

The general trend is up, with sharp increases between 1973 and 1975 and moderate ones between 1976 and 1978. The following figures illustrate this :

Standard consumer	D_1	D_2	D_3	D_{3b}	D_4
% 1978/1973	+ 41	+ 35	+ 89	+ 112	+ 178
% 1978/1976	+ 2,8	+ 1,8	+ 10	+ 11	+ 16

In addition, the change in the rate of VAT on 1 April 1978 will lead to a further increase in selling prices of around 13-14%.

Under the tariff system, the increases are much more pronounced for the largest domestic consumers (heating). As a result there is a substantial reduction in degression. The reduction in unit price between D_1 and D_4, which stood at -75% in 1973, was only -50% in 1978. In other words, the price ratio, which was formerly 1:4, fell to 1:2 in 1978.

A comparison between the indices of natural gas selling prices and the national index of gross domestic product (GDP) gives the following results :

	GDP index	Index of gas selling prices			
		D_1	D_2	D_3	D_4
1973	100	100	100	100	100
1976	131.3	137	133	172	240
1977	141.0	137	133	172	240
Beginning of 1978	146.6	141	135	189	278
April 1978		160	153	215	315

In all cases, the prices for the largest domestic consumers (heating) are increasing at a faster rate than GDP, i.e. faster than the prices for goods and services as a whole. The prices for standard consumers D_3 and D_4 are therefore increasing in both current and constant terms (base 1973). However, this is part of a readjustment process, since in 1973 natural gas was supplied at a very favourable price (lowest in the Community). Prices for small domestic consumers (D_1 and D_2) developed more or less in step with the GDP price index, at least until the increase in VAT in April 1978.

f) Industrial prices - tariffs

As the tariff system has been changed, it is necessary to describe it once again.

In January 1977, three tariffs of the simple two-part type were applied on the basis of the annual volume of consumption.

Standard consumer	Tariff	Annual consumption	Standing charge HFL/year	Commodity rate cents/m^3
-	1	0.170-1 million m^3	4 440	16.59 + 1.8 + adjustment
I_3	2	1-10 million m^3	7 140	16.32 + 1.8 + adjustment
I_4	3	10-30 million m^3	30 000	16.10 + 1.8 + adjustment

The adjustment coefficient is calculated as follows :

$$(16.10 \times \frac{P}{200}) - 16.10$$

where P is the price of heavy fuel oil, determined in the way described in the previous study (1). In January 1977, P = 210.

Small industrial users (I_1 I_2), who consume less than 170 000 m^3 a year, are charged at the same rates as those for households. There is a system of special contracts for the largest industrial consumers (I_5).

From 1 January 1978, this system was replaced by a single block tariff, applicable to all consumers :

Block of consumption	Price cents/m^3
0-170 000 m^3	= domestic tariff
170 000-1 000 000 m^3	16.0 + 2.8 + adjustment
1-10 000 000 m^3	16.0 + 2.2 + adjustment
10-50 000 000 m^3	1.60 + 1.8 + adjustment
50 000 000 m^3	16.0 + 1.7 + adjustment

The adjustment formulae remained the same. In January 1978 the value of P stood at 220.

(1) See 'gas prices 1970-1976' - EUROSTAT 1977

It can be seen that these tariff formulae no longer include a component for modulation.

The tariff formulae described above form the basis for all new contracts, which were used for this survey since they now constitute the majority of cases and are therefore representative.

These formulae led to a sharp rise for standard consumer I_5, i.e. old contracts (known as 9/69) up to 1976, new contracts from 1977. The old contracts are disappearing, the last ones expiring in 1982 at the latest. The prices of new contracts are never concluded for a long period, as was the case before the 1973 crisis. They are generally valid for one year, thus permitting greater flexibility in the determination and modification of price levels.

g) Industrial prices - analysis

The results are given, at current prices, in Table No 20 in the annex.

Up to 1976, there were three groups of prices : 1) small industrial consumers, which also included wholesale and retail trade, craft trades and offices (type I_1, I_2), to whom the same tariffs were applied as for households ; 2) medium-sized industries (I_3, I_4)which came under the system of new tariff contracts ; 3) heavy industries (I_5) which, in the majority of cases, still benefited from the old contracts concluded before the 1973 crisis.

The prices for these three groups developed more or less independently.

Since 1977 there have been only two groups of prices : 1) small consumers (I_1, I_2) who are still subject to household tariffs; 2) other industrial consumers (over 170 000 m^3 a year), types I_3, I_4, I_5) now subject in most cases to the new contracts drawn up on a standardized tariff basis.

These remarks are important for the analysis of price trends.

The period under review was characterized by price increases which were substantial between 1973 and 1976 and more moderate after that, as the following figures show :

	Selling price of natural gas				
	I_1	I_2	I_3	I_4	I_5
% 1978/1973	+ 159	+ 185	+ 154	+ 162	+ 222
% 1978/1976	+ 14	+ 15	+ 16	+ 15	+ 36

The rates of increase for the smallest industrial consumers (I_1, I_2) are similar to those for block central heating (D_4). Overall, the increases tend to be more pronounced the higher the volume of consumption. The prices for the largest industrial consumers (I_3, I_4, I_5) are pegged to the price of heavy fuel oil (influence of the component P in the tariff formulae). The prices for small consumers (I_1, I_2), which are not pegged to the prices of petroleum products, are however subject to the influence of the prices of rival products, namely domestic heating oil (HBO). This may explain divergences in the trends of these two groups of prices. The pegging of prices to those of alternative sources of energy has priority over the standardization of the gas tariff system.

Owing to the different rates of increase as a function of the volume of consumption and as a result of the fact that new contracts have been taken into account in this study, the difference in prices between I_1 and I_5 (degression) is considerably reduced. This reflects the actual situation, since fewer and fewer customers are now supplied under the old contracts. The reduction in unit price between consumption of 419 Gigajoules/year (I_1) and consumption of 4 186 000 Gigajoules/year (I_5), which was -35% in 1973, fell to -18% in 1978.

Within the same tariff group, the difference between I_3 and I_5 was reduced to -6% in 1978 i.e. for annual consumption 100 times as high.

While the reduction in price for volume of consumption is becoming very slight, the effect of modulation on prices remains nil. There is no difference in price between I_{3-1} and I_{3-2} or I_{4-1} and I_{4-2} respectively.

As transmission distances are short and the capacity of the grid is sufficient to absorb peak demand, there does not seem to be any need for tariff incentives to improve the regularity of demand.

A comparison of the indices of gas selling prices with the national index of GDP gives the following results :

	GDP index	Indices of gas selling prices				
		I_1	I_2	I_3	I_4	I_5
1973	100	100	100	100	100	100
1976	131.3	227	247	219	227	236
1977	141.0	227	248	239	249	310
beginning of 1978	146.6	259	285	254	262	322
April 1978		293	323	288	296	365

In all cases, the increases in gas prices were greater than those in the prices of goods and services as a whole (as represented by GDP) throughout the period under review. In other words, natural gas is becoming more expensive not only at current prices but also at constant prices (base 1973). This trend was accentuated by the increase in taxation in April 1978. However, it must be borne in mind that natural gas was supplied at very low prices in 1973 and that the increases represent readjustments and adaptations to the situation of rival products.

VII. BELGIUM

a) Organization

There have been virtually no major changes in organization, which still has a two-level structure :

- import, transmission, supply to general distribution organizations and supply to large industrial customers ($>$ 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 134 000 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.

The composition of DISTRIGAZ was modified by the sale of ESSO's shares to the private Belgian companies, with an option for them to be taken over by the State. The holdings, before being taken over by the State are as follows : State 33.3 %, private Belgian companies 49.9 %, Shell 16.6 %.

The breakdown of natural gas deliveries in 1977 is as follows :

	%	standard consumer
DISTRIGAZ direct sales to industry	69	I_3 I_4 I_5
General distribution for domestic uses, heating tariffs	20	D_3 D_4
General distribution for domestic uses, other tariffs	2	D_1 D_2
General distribution for non-domestic uses	9	I_1 I_2
TOTAL for Belgium	100	

b) Regulations

The regulations and laws governing the tariff structure need to be described in some detail.

First of all, a distinction must be made between the two levels mentioned in point a).

Distrigaz

The prices of the natural gas supplied by S.A. Distrigaz to distribution companies and large industrial consumers are proposed by this company's board of directors and examined by a Supervisory Committee. The Minister responsible for energy has the right to impose his decision regarding these prices, under the Law of 22 April 1965 which authorizes the State to take up shares in S.A. Distrigaz.

General distribution

Under legislation dating back to 1789, 1790 and 1922 the municipal authorities are entitled to fix gas tariffs without further consultation. The municipalities can concede their powers to concessionnaires or form associations for the purpose of exercising them. In fact, the tariffs are agreed within a Supervisory Committee which notifies its decisions, in the form of recommendations, to the distribution companies which implement them of their own accord.

Supervisory Committee

This committee, which was set up in 1955, was enlarged in 1964, at which time its powers were extended to the gas industry, under an agreement designed to rationalize the gas sector and in particular to ensure the coordination of transmission, storage, distribution and capital expenditure as well as the standardization of tariffs. The Supervisory Committee comprises the following members with responsibilities for gas:

- Fédération générale du travail de Belgique (FGTB) (this organization withdrew on 1/1/77)
- Confédération des syndicats chrétiens (CSC)
- Fédération des entreprises de Belgique (FEB)
- Centrale générale des syndicats libéraux de Belgique (CGSLB)
- FIGAZ section for the coordination of transmission and distribution (CTD-Gaz)
- INTERMIXT group
- INTER-REGIES group
- Government spokesman and representatives of the ministries concerned, who have the right of initiative and powers to defer the sending of a recommendation.

Legal basis for index-linking

Gas tariffs are affected by a gas index determined every quarter by the Minister of Economic Affairs, pursuant to the Ministerial Decree of 8 September 1961, as amended by the Ministerial Decrees of 22 January 1971 and 30 December 1976.

c) Taxes

Gas sales are subject to value added tax at a rate of 6 %, which has remained unchanged. VAT is deductible in the case of industrial and commercial consumers.

The gas supplied by the general distribution undertakings is subject to an indirect tax designed to benefit the municipalities in the form of dividends paid to them. This tax, which it is difficult to show separately, is a component of the costs and is included in the prices net of tax shown in this study.

d) Household prices - tariffs

Since 1 January 1978 Belgian tariffs have been expressed in megajoules (10^6 joules) GCV.

Domestic tariffs are linked to the statutory gas index Ig, the definition of which was amended on 25 June 1976 and again on 31 December 1976. This last definition, which is still valid, has the following formula :

$$Ig = (0.57 + 0.18 \frac{P}{Po} + 0.25 \frac{S}{So}) \times 185.77$$

where S is a typical salary in the gas industry,

$P = 0.5248 + \frac{290.01}{N}$ where N represents the regularity of distributors' demand.

For the first quarter of the year the values of Ig were as follows :

1973	= 133.10	1977	= 187.69
1976	= 178.85	1978	= 193.77

The following tariff structure applied on 1 January 1978 :

Standard consumer	Tariff	Standing charge BFR/year	commodity rate centimes/megajoule
D_1 D_2	A	2.16 x Ig	first block (a) : Brussels : 0.568 + 0.15923 Ig Antwerp : 0.568 + 0.16122 Ig Liège : 0.568 + 0.15781 Ig remainder: 0.616 + 0.11118 Ig
D_3	B	13.90 x Ig	0.748 + 0.06377 Ig
D_4	C	8,52 x Ig per dwelling	2.040 + 0.04237 Ig

a) size of first block:

Brussels, Liège : 15 474 MJ/year;
Antwerp : 17 936 MJ/year.

Tariffs B and C apply throughout Belgium. Tariff C is available for blocks of flats with a central heating plant serving at least ten dwellings.

e) Household prices - analysis

The results are given, at current prices, in Tables Nos 21 and 22 in the annex. These results call for a number of comments. The period under review is characterized by increases in selling prices, as illustrated by the rates given below :

(Brussels)	D_1	D_2	D_3	D_{3b}	D_4
% 1978/1973	+ 47	+ 44	+ 43	+ 56	+ 76
% 1978/1976	+ 10	+ 11	+ 12	+ 14	+ 13

Similar rates were recorded in Antwerp and Liège.

Overall, the rates of price increase are slightly more pronounced for the largest consumers, which results in a reduction in tariff degression.

Tariff degression, or the price reduction granted as the volume of consumption increases, can be measured by the difference between the standard consumers at the opposite ends of the scale, viz. D_1 and D_4. This reduction in unit price ($\% D_4/D_1$), which amounted to - 73% in 1973, fell to -68 % in 1978. Degression is nevertheless still very marked in Belgium.

The regional dispersion of prices is still very slight in the case of small domestic consumers (a difference of a few percent for D_1 and D_2 between the three large conurbations covered by the survey). It is nil in the case of consumers using gas for heating purposes, owing to the complete standardization of tariffs.

A comparison may be made between consumer selling prices, average income and the price index of gross domestic product (GDP).

	GDP Index	Index of average income of distribution	Indices of gas selling prices				
			D_1	D_2	D_3	D_{3b}	D_4
1973	100	100	100	100	100	100	100
1976	135.6	125.6	133.5	129.4	128.1	136.9	156.3
1977	144.9	132.8	142.2	139.2	138.0	152.4	171.8
1978	157.9	132.8	146.8	143.7	143.0	156.3	176.0

The indices of natural gas selling prices follow the same pattern as the GDP, with a fairly even spread on either side, although there is a slight advantage in favour of small consumers for whom social considerations may come into play. This quasi-parallelism stems from the effect of the Ig index, which mirrors the trend in the cost of living fairly well. Overall, gas prices, although increasing in current terms, are remaining stable in constant terms (base 1973). The increases thus merely offset monetary depreciation.

On the other hand, the average income received by general distribution undertakings in respect of domestic uses is still declining and does not follow the same pattern as the GDP and selling price indices. In other words, there is a slight drop in average income at constant prices. The reason for this relative decline in revenue is the increase in the annual average consumption

of the users, who thus benefit from tarif degression and pay lower unit prices as their consumption increases. Indeed, the statistics record a rapid increase in average consumption per domestic user, amounting to +45% between 1973 and 1978. In short, the reduction in tariff degression is not sufficient to offset the effect of increased consumption. This situation is brought about by the growth of gas-fired heating. Sales for heating purposes, which accounted for 9 % of total deliveries of natural gas in 1973, accounted for 20 % during 1978.

f) Industrial prices - tariffs

A new tariff structure came into affect from 1 July 1976, for supplies exceeding 33 500 Gigajoules a year (Distrigaz), i.e. to standard consumers I_3 I_4 and I_5 in this study.

The tariff formula has four components:

1) standing charge

$$(1 - Rh)\ 4371 \times R_{DZ} \times Sn \quad \text{BFR/month}$$

2) commodity rate

$$\left[57.76 + 1.02\ (G - 43.21) + 6\ R_{DZ} \times Cne\right] \quad P \quad \text{BFR/GJ}$$

3) A price reduction coefficient K

The price for firm i.e. non-interruptible supplies is the standing charge plus the commodity rate multiplied by monthly consumption. This price is reduced by applying a reduction coefficient K as follows :

- 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
- consumption in excess of 209 350 GJ	K = 0.95

4) monthly connection charge

which depends on the length of the connection, the subscribed hourly intake (GJ/h) and the price revision formula RDZ.

In this study, a connection charge of 0.27 BFR/GJ per year was taken as being average and representative.

Definition of parameters :

- SN : sum of 'firm' and 'interruptible' subscriptions (Sn_F + Sn_E) (GJ/h)

  In the present study

  $$Sn = Sn_F = \frac{\text{annual consumption}}{\text{hourly modulation}}$$

- Rh : coefficient of hourly regularity assessed on annual consumption (Qa) and Sn

  $$Rh = \frac{Qa}{8\,760 \times Sn}$$

  For the standard consumers in this study, this coefficient is as follows :

I_{3-1}	Rh	=	0,1826
I_{3-2}	Rh	=	0,4566
I_{4-1}	Rh	=	0,4566
I_{4-2}	Rh	=	0,9132
I_5	Rh	=	0,9132

- G : average cost in BFR/GJ of the gas delivered to the frontiers during the month of supply. This cost is monitored by the auditors of the undertakings represented on the Electricity and Gas Supervisory Committee.

  At the beginning of 1978 G = 58.03

- Cne : coefficient of non-interruptibility ranging between 0 and 1 according to the degree of interruptibility of supplies

  $$Cne = \frac{Sn_F}{Sn}$$

  As our standard consumers do not have interruptible supplies, Cne = 1.

- R_{DZ} : price revision formula, based on wages and on an index reflecting the cost of the materials used in the private electricity and gas industry.

  At the beginning of 1978 R_{DZ} = 1.081898.

- P : coefficient of adjustment of the commodity rate according to the use made of the gas.

USE	Valeur de P		
	1,1	1	0,9
Cracking boilers	x	-	-
Raw materials	x	-	-
Calcining furnaces	x	-	-
Drying	x	-	-
Enamelling	x	-	-
Tiles for sanitary installations	x	-	-
Tunnel-type brick kilns	-	-	x
Crown furnaces, feeder	x	-	-
Decorating kilns	x	-	-
Pottery kilns	-	x	-
Large glass-melting furnaces	-	-	x
Melting furnaces -glass fibre	-	x	-
Reheating furnaces (metals)	-	x	-
Heat-treating furnaces (metals)	x	-	-
Gas enrichment	x	-	-
Ore-sintering	x	-	-
Injection in blast furnaces	-	-	x
Cupola furnaces	x	-	-
Rotary lime kilns	-	-	x
Upright lime kilns	-	x	-
Cement kilns	-	-	x
Space heating	x	-	-
Large boilers	-	-	x

It can be seen that these new formulae introduce the concept of intended use for gas and are therefore moving away somewhat from the marginal cost system towards a tariff structure based on 'utilization value'.

In the case of the standard consumers covered by this study, the application of these tariff formulae shows that :

- the standing charge depends to a considerable extent on the hourly modulation (parameters Rh and Sn);
- the commodity rate is identical for all the standard consumers, apart from the K coefficient which has the effect of reducing prices for category I_5 only (41 870 x 12 = 502 440 GJ/year);
- the commodity rate varies directly as a function of the utilization coefficient P; this coefficient will therefore affect the unit selling price in inverse proportion to the standing charge (heavy consumption linked to good modulation).

In addition to these tariffs there are also 'interruptible' contracts, but these are not representative of the market. Their conditions of sale are tied to the prices of fuel oils.

Non-domestic consumers who take less than 33 500 GJ a year (I_1 and I_2) are supplied by the general distribution undertakings. Their tariffs are linked to the index Ig (see domestic tariffs) and are standard throughout Belgium.

Standard consumer	Tariff	Standing charge BFR/year	Standing charge BFR/MJ maximum daily intake	Commodity rate centime/MJ
I_1	ND_1	33.22 Ig	-	Modulation (load factor) 115 days 0.05689 Ig + 1.696 < 115 days 0.0722 Ig + 1.696
-	ND_2	47.45 Ig	-	March-Nov. = 0.04151 Ig + 2.818 Dec.-Febr. = 0.06169 Ig + 2.818
I_2	ND_3	237,26 Ig	0.02047 Ig	0.0273 Ig + 2.818

Standard consumer I_1 is regarded as having a load factor of more than 115 days.

g) Industrial prices - analysis

All the tariffs for non-domestic uses are standardized and the prices are therefore valied for the whole of Belgium. The results are therefore given in a single table (No 23 in the Annex).

Although two tariff systems exist side by side, the general trend in selling prices follows the same pattern, with sharp increases between 1973 and 1976 and less pronounced ones since then. This coexistence of two tariff systems has, however, sometimes necessitated corrections not provided for in the formulae, notably in order to prevent prices paid by the smallest consumers supplied by DISTRIGAZ (I_{3-1}) exceeding the prices paid by the customers supplied by general distribution undertakings (I_2). This has led to some slight distortions in both price trends and the annual rates of increase. Having said this, the development of prices during the period under review can be summarized as follows :

	I_1	I_2	I_{3-1}	$I_{3-2}I_{4-1}$	I_{4-2}	I_5
% 1978 / 1973	+ 59	+ 94	+ 103	+ 223	+ 256	+ 288
% 1978 / 1976	+ 5	+ 12	+ 37	+ 19	+ 33	+ 43

The accentuation of the rates of increase as the volume of consumption goes up is clearly apparent. This leads to a reduction in the price dispersion between the various consumers. To take the two extremes, the relative difference in price between I_5 and I_1, which amounted to -78% in 1973, fell to -45% in 1978. This relative price difference must be interpreted with caution, since it is not an exact reflection of degression for volume of consumption, for two reasons : 1) the standard consumers at opposite ends of the scale (I_1 and I_5) come under different tariff systems ; 2) in the Belgian tariffs, the modulation of offtake has a greater effect on prices than the total volume of this offtake.

Between an annual consumption of 41 860 GJ (I_3) and an annual consumption of 418 600 GJ (I_4), the commodity rate rate remains the same. Between I_3 and I_4, only the standing charge differs as a function of the load factor. For example, the unit price is reduced by 20 % (in 1978) between a load factor of 1 600 h and one of 4 000 h, for the same annual consumption (I_{3-1}, I_{3-2}).

Another consequence of the tariff system is that there is an identical unit price for standard consumers I_{3-2} and I_{4-1}, even though the latter's consumption is ten times higher. The reason for this is that they both come in the same block of units used (K = 1) and have the same load factor (4 000 h). On the other hand, there is a degression for quantity between the standard consumers I_{4-2} and I_5, who have the same load factor. The reduction in unit price was -3% in 1978 - which is modest for an annual consumption ten times greater and slight in comparison with the possible savings as a result of an improved load factor. The aforegoing analyses show that the tariff structure is not conducive to a high level of consumption but encourages regular offtake.

The introduction of a coefficient of adjustment based on the use made of the gas (parameter P) led to three price levels for each standard consumer:

Standard consumer		Price net of tax Bfrs/GJ		
		P = 0.9	P = 1	P = 1.1
I_{3-1}	1977	92.29	99.4	106.51
	1978	100.79	108.73	116.67
I_{3-2} I_{4-1}	1977	71.64	78.75	85.85
	1978	79.36	87.30	95.24
I_{4-2}	1977	64.87	71.98	79.09
	1978	72.34	80.28	88.22
I_5	1977	62.93	69.83	76.72
	1978	70.18	77.88	85.58

The range of price variation as a function of use is ± 7% for I_{3-1}, ± 9% for I_{3-2} and I_{4-1}, and ± 10% for I_{4-2} and I_5.

In Table No 23 in the annex the prices are based on P = 1. Experience of applying the new tariffs to all DISTRIGAZ customers gives an average value of P of 0.98.

To conclude this analysis, a comparison may be made between the indices of selling prices, average income and the price index of gross domestic product (GDP):

	GDP index	Average income from distribution (1)	Average income DISTRIGAZ(2)	Index of selling prices					
				I_1	I_2	I_{3-1}	I_{4-1}	I_{4-2}	I_5
1973	100	100	100	100	100	100	100	100	100
1976	135,6	155	266	152	173	149	273	267	271
1977	144,9	167	300	160	190	186	292	319	347
1978	157,9	166	.	159(3)	194	203	323	356	388

(1) non-domestic consumers (I_1 I_2)

(2) DISTRIGAZ direct sales to industry (I_3 I_4 I_5)

(3) tariff readjustment resulting in a slight fall in 1978.

In all cases, the selling prices of natural gas for industry and non-domestic consumers are increasing at a faster rate than the GDP index; this means that prices are going up not only in current but also in constant terms (base 1973).

The indices of gas selling prices for medium and large industrial consumers (I_3 I_4 I_5) are spread fairly evenly on either side of the index of DISTRIGAZ average income. The index series show parallel trends. This would tend to prove that there is no appreciable change in the structure of sales and that degression for quantity or modulation does not have an effect on average income, as is the case in other countries. This stability of structure can be confirmed by the stagnation of DISTRIGAZ sales to industry since 1973. Revenue is therefore developing as a function of tariff changes and not as a change in conditions of consumption (volume, modulation, etc.).

VIII. GRAND DUCHY OF LUXEMBOURG

a) Organization

Since the advent of natural gas in 1972 there have been no further changes in the organization of the gas industry. A limited company (SOTEG) imports Dutch natural gas via Belgium, transmits it and re-sells it either to public distribution undertakings or directly to large industrial customers whose annual consumption exceeds 2 million m^3.

Imports of natural gas have almost doubled between 1973 and the present time.

An agreement concluded between the public distribution companies and the iron and steel industry stipulates that the latter will reduce its consumption of natural gas during peak periods in winter up to a maximum of 25% of hourly and daily intake, so as to enable the public distribution undertakings to have in hand a corresponding excess over their sales. In return, the iron and steel works will be entitled to benefit, during the other periods of the year, from the slowing down in public distribution undertakings' consumption. This leads to a good load factor of natural gas on the network, enabling the public distribution companies to offer particularly favourable conditions of sale to their customers.

b) Regulations

There have been no changes since the last study.

c) Taxes

Gas sales are subject to value added tax levied on the price net of tax at the unchanged rate of 5 %. VAT is deductible in the case of industrial and commercial consumers.

d) Household prices - tariffs

The tariff system has remained the same since 1 January 1973. Only the indices have changed.

	1973	1976	1977	1978
Index E_1	1,000(1)	1,4098	1,4481	1,5748
Index E_2	1,000(1)	2,0592	2,077	2,425

(1) base in November 1972

Gas selling prices have thus developed solely as a function of the indices.

In addition, reductions of a social nature are granted on the total price of the commodity charge and the standing charge under the general tariff (TG_1 and TG_2) applicable to small consumers (D_1 and D_2) as follows :

10 % for households with 3 or 4 dependent children ;

15 % for households with 5 or more dependent children.

e) Household prices - analysis

The results are presented, at current prices, in Table No 22 in the annex.

The period under review was marked by very sharp increases between 1973 and 1976 and more moderate increases since then.

Rate of increase in selling prices

Standard consumer :	D_1	D_2	D_3	D_{3b}	D_4
period 1978/1973	+ 54	+ 48	+ 116	+ 122	+ 134
period 1978/1976	+ 11	+ 13	+ 17	+ 18	+ 17

The rates stem very clearly from the tariff indexation formulae. Index E_1, which applies to small consumers D_1 and D_2, went up by 57% between 1973 and 1978 and by 12 % between 1976 and 1978. Index E_2, which affects tariffs for heating (D_3 and D_4), went up by 142 % between 1973 and 1978 and by 18 % between 1976 and 1978.

The effect of this dual indexation is to increase prices in line with the volume of consumption. As a result, there is a reduction in tariff degression. The reduction in unit price granted for a greater volume of consumption (relative difference in price between D_1 and D_4), which was - 80% in 1973, was only - 70% in 1978.

The development of the indices and therefore of selling prices depends on the increase in the cost of living and the revision of contracts for the purchase of natural gas from Belgium.

A comparison of the development of selling prices with the price index of gross domestic product (GDP) permits a number of further comments.

	GDP Index	Index of selling prices			
		D_1	D_2	D_3	D_4
1973	100	100	100	100	100
1976	127,3	139	131	184	200
1977	135,0	142	137	188	202
1978	139,0	154	148	216	234

In all cases, gas prices are increasing by more than the prices of goods and services as a whole (as represented by GDP). This is obviously due to the effect of the frontier price of natural gas which has increased more rapidly than the cost of living.

Thus, the price of natural gas is increasing not only at current prices but also in constant terms (base 1973).
However, this is a result of readjustment since in 1973 natural gas was sold at a particularly low price.

f) Industrial prices - tariffs

There have been no changes in the tariff system. Only the index system has affected prices (same indices E_1 and E_2 as for domestic tariffs). Both these indices apply to tariffs for the smallest consumers (type I_1), while only index E_2 applies in other cases (I_2 and I_3).

g) Industrial prices - analysis

Table No 23 in the annex gives the results at current prices.

The increase in selling prices for industry is greater than in those for households : increases of 121 to 136% between 1973 and 1978 and 15 to 18% between 1976 and 1978. These rates mirror closely the development of index E_2.

The development of prices has had very little effect on degression. When the volume of consumption is increased a hundredfold (I_1 to I_3), the reduction in unit price is around one third. The degression for modulation is still very slight : reduction of around 8 % in the unit price in 1978 between I_{3-1} (200 days, 1 600 h) and I_{3-2} (250 days, 4 000 h). As the flow of gas on the network is regular as a result of the agreements with the iron and steel industry, the tariffs do not encourage consumers to improve their own modulation.

Comparison of the selling prices for industry with the GDP index leads to the same conclusions as for households.

Natural gas prices are increasing in both current and constant terms of the same reasons as those outlined in point e).

IX. UNITED KINGDOM

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

a) Organisation

There has been no change in organisation since the previous study. However, several events related to the gas industry, which have taken place in the last two years, are worth mentioning.

Gas from the Frigg field, which straddles the boundary in the North Sea between Norway and the U.K. came on stream in October, 1977. The gas is landed at a new terminal at St. Fergus in Scotland making a total of four terminals which are now receiving natural gas supplies from the North Sea. There is still some LNG from Algeria landed at the Canvey Island terminal but the amount represents only a tiny proportion of total gas supplies.

The arrival of Frigg gas is allowing the renewed expansion of the industrial and commercial markets, which had been deliberately controlled since 1973, as well as the continuing expansion of the domestic market. In mid-1977 the conversion of customers appliances to natural gas was completed. Over the 10 years of the conversion programme around 35 million appliances were dealt with.

b) Regulations

There has been no change since the last study.

However, the government authorities have allowed a greater flexibility in the tariff changes. This permitted British Gas to simplify the regional and tariff structure and reduce the price variations between regions.

In April, 1977 the number of tariffs was reduced and all Regions were regrouped into 3 tariff zones, instead of the previous 4, with seven Regions in a General Zone (including London, Cardiff and Glasgow), three in the Northern Zone (including Leeds) and two in the Midlands (including Birmingham).

c) Taxes

There are no taxes directly imposed on the sale of gas.

d) Household prices-tariffs

There are now only two tariffs available for domestic consumers in each zone : the credit tariff and the prepayment tariff.

The Domestic Credit tariff consists of a standing charge, which a consumer has to pay irrespective of the amount of gas used, and two commodity rates- one rate for the first 52 therms (5,5 GJ) per quarter and a lower follow-on rate for additional consumption. This follow-on rate is the same for all regions.

Example for London, Glasgow and Cardiff, for January 1978 :

standing charge per quarter	UKL 2,00
commodity rate	
first 52 therms per quarter	22,8 p/therm
additional therms	15,3 p/therm.

The other tariff available in each zone is the prepayment tariff. Customers insert coins directly into a special meter. In most regions there are two commodity rates. One rate is charged on the first 39 therms (4,1 GJ) per quarter, after which a second, lower rate is applied to all further consumption. There is no standing charge but the commodity rates are relatively high compared with the Domestic Credit tariff. The prepayment tariff is cheaper for very small consumers using less than about 30-35 therms per quarter (approximately 3,5 GJ). By the end of 1977 the proportion of domestic customers using prepayment meters had fallen to 20 %, which still represents 2,8 million customers. In terms of consumption prepayment ac-

counted for only 7 % of total domestic gas sales in 1976/77. The trend away from prepayment is encouraged by British Gas and no charge is made to a customer transferring to a credit meter.

Example for London, Glasgow and Cardiff, for January 1978 :

First 39 therms	29,3 p/therm
additional therms	22,8 p/therm.

Domestic tariffs are expected to remain at present levels during 1978/79, which means prices will have been unchanged for a period of two years.

Block central heating (standard consumer D_4) must be treated separately. This type of heating only represents a very small percentage of overall domestic consumption in Great Britain - about 1 % in 1976/77 - and there is no special tariff for this usage. The prices shown in the previous study for the various places were generally determined by applying the commercial heating tariffs existing in the particular year concerned. However, commercial heating tariffs were withdrawn in the tariff changes in April, 1977 and bulk heating would be charged under the one credit tariff now available for non-domestic customers. Accordingly the price shown for 1978 in each city is based on this tariff.
There is no special tariff for communal heating schemes (local authorities' district schemes).

e) Household prices - analysis

From the results of the study, expressed in national currencies, in tables N° 24-26 in the annex, a general and regular upward trend in prices can be seen. Since the last study there have been two changes in tariffs : in October, 1976 and in April, 1977, with average increases of 12 % and 10 % respectively. There were three main features of the October, 1976 tariff increase. Firstly, commodity rates were increased while the standing charges remained unaltered so that tariffs would reflect movements in costs and promote the need for energy conservation. Also the increases in percentage terms varied between customers using

different amounts of gas. Lastly, as part of the process of standardising tariffs between Regions, the increases were greatest in the lower priced regions.
The most recent rise in tariffs in April, 1977 was introduced at the request of the government in order to finance the early repayment of ontstanding loans.

These two increases were designed so as to reduce regional differences in domestic gas prices and to bring tariffs more into line with actual differences in costs between Regions. It can be seen from the tables that prices in London, Glasgow and Cardiff have become the same. The price levels in Leeds and Birmingham are still a little lower. As a result of these latest changes, the range of prices between cities, for the same consumption level, has narrowed still further. This is illustrated by the percentage difference in unit price between cities at the opposite ends of the price range (Glasgow and Birmingham).

Standard consumer		January 1976	January 1978
D_1	8,37 GJ	35 %	23 %
D_2	16,74 GJ	31 %	20 %
D_{2b}	33,50 GJ	23 %	15 %
D_3	83,70 GJ	13 %	7 %
D_{3b}	125,60 GJ	10 %	4 %

It can be seen that the higher the consumption, the narrower the range of prices.

The rates of increase varied from one city to another, in order to reduce Regional differences. The following percentages give an indication of the range of increases :

Standard consumer		% 1978/1973	% 1978/1976
D_1	8,37 GJ	25 - 65	7 - 18
D_2	16,74 GJ	45 - 80	13 - 23
D_3	83,70 GJ	75 - 105	22 - 28
D_{3b}	125,60 GJ	90 - 115	23 - 30
D_4	1047 GJ	95 - 150	34 - 35

The rates of increase for London fall more or less in the middle of the range, and therefore can be taken as a representative example.

As mentioned above, the rates of increase varied according to the volume of gas consumed. The smallest increases were for the small domestic consumers. This resulted in a decrease in tariff degression, which can be seen by the difference in unit price between the smallest and largest standard consumer (% D_4/D_1). For London in 1978 the reduction in unit price between 8,37 GJ (D_1) and 1047 GJ (D_4) is - 38 %, compared with - 62 % in 1973.

Block central heating (D_4) ought to be treated separately because of the break in the tariff series. The unit price is now, in general, higher than that for individual central heating, which does not encourage this type of consumption.

To conclude, a comparison may be made between the selling price of gas, the implied gross domestic product (G.D.P.) price index and the average receipts of British Gas.

	GDP	Average receipts	Selling price - London				
			D_1	D_2	D_{2b}	D_3	D_{3b}
1973	100	100	100	100	100	100	100
1976	168,8	129	135	137	143	154	160
1977	191,3	149	145	149	158	172	182
1978	206,6	.	153	168	171	187	196

The average receipts correspond to the domestic tariffs applied in Great Britain for a financial year i.e. from Ist April to 31st March, which includes the prices at the beginning of the year. Standard consumer D_4 is not shown, as it is of little importance.

These figures show that the increases in average receipts were not entirely in line with the increases in selling prices. The average domestic consumer falls just above standard consumer D_{2b} (37 to 48 GJ per annum). However, the two series of indices are not parallel. The reason is the increase in average consumption per consumer, which increased by about 30 % between 1973 and 1978. Because of the effect of the tariff degression, the unit price paid by consumers tends to be reduced a little.

Another more important conclusion can be drawn from this comparison : the gas price indices always increased less than the GDP index. This means that although gas prices increased in terms of current prices, they decreased in constant prices terms, calculated on the base year 1973. The tariff changes did not compensate for the fall in the purchasing power of the pound and gas has become cheaper compared with the whole of goods and services.

f) Industrial prices-tariffs

All non-domestic consumers who use less than 10 500 GJ per annum (100 000 therms) can purchase gas according to published tariffs. The larger consumers who consume more than 10 500 GJ per year are supplied under special contracts, negociated individually.

For the first category (standard consumers I_1 and I_2) the major rationalisation which has been undertaken in recent years has resulted in a single tariff - the Non-Domestic Credit Tariff. The structure is similar to the credit tariff available to domestic consumers : it has the same quarterly standing charge and relatively high initial commodity rate.

Example for London, Glasgow and Cardiff, for January 1978 :

standing charge per quarter	UKL 2,00
commodity rate	
Ist 100 therms (10,5 GJ) per quater	22,8 p/therm
additional therms	17,7 p/therm

For the larger industrial consumers (I_3, I_4, I_5) the reader is referred to the previous study, as the form of the price contracts has been unchanged.

The prices given in this study are for new contracts only, as these represent more and more customers and give a better indication of the evolution of market prices.

For I_3 and I_4, the prices are indicative of firm contract prices. On the other hand, at the I_5 level, interruptible contracts are more common and the prices shown are indicative of this type of contract. For all these levels, the gas prices shown are in fact derived from the related oil prices.

g) Industrial prices - analysis

The results are presented, in national currencies, in tables N°.27-29 in the annex.

For the analysis it is convenient to distinguish between the two groups - the tariff customers (I_1, I_2) and the contract customers (I_3, I_4, I_5). Between 1976 and 1978, the prices for I_1 and I_2 increased by 20 %. Harmonisation between Regions during this period was achieved to the extent that the difference in prices between cities in 1978 is negligible, especially for I_2.

For the more important consumers (I_3, I_4, I_5) the prices given for new contracts, do not vary according to location but according to the conditions of competition and the intended use of the gas. The regularity of the intake (modulation) does not influence the prices, in that prices are similar between I_{3-1} and I_{3-2} and between I_{4-1} and I_{4-2}. The peaks in demand are supplied by stocking stations and by interruptible contracts, which are most common with the largest consumers (I_5).

The chronological series shows very important price increases between 1973 and 1976, followed by more moderate increases of between 11 % and 24 % from 1976 to 1978.

This series of prices, based on new contracts, does not compare with the evolution of the average receipts, which is evidently influenced by old contracts, which have lower price levels, even when they have been renrewed. A parallel can, however, be traced between the selling prices given in this study and the average receipts estimated by British Gas for the new and renewed contracts, for the industrial and commercial consumers, firm and interruptible (source = Energy Trends, September 1978).

UKL / GJ	Average receipts B.G. (1)	Range of selling prices I_3 - I_5
Beginning 1976	1,05	0,98 - 1,39
Beginning 1977	1,20	1,17 - 1,58
Beginning 1978	1,45	1,22 - 1,65

(1) Ist quarter of each year

The reduction in unit price for volume consumed is difficult to calculate exactly, as the results given in this study come from three types of price :

- commercial tariffs for I_1 and I_2
- new firm contracts for I_3 and I_4
- new interruptible contracts for I_5.

However, it is noticeable that the range of prices between I_1 and I_5 has narrowed considerably between 1973 and 1978. Overall, it can be said that degression has been reduced by about half during this period.

A comparison can be attempted between the price of gas and the implied GDP index.

	GDP	Tariffs (1)		New contracts		
		I_1	I_2	I_3	I_4	I_5
1973	100	100	100	100	100	100
1976	168,8	143	183	207	208	363
1977	191,3	162	206	236	224	443
1978	206,6	173	221	246	231	452

(1) London

Except for the very small consumers (I_1) gas prices have increased more than the prices for the whole of goods and services as represented by the GDP index. Thus, gas is not only more expensive in terms of current prices but also in terms of constant prices, calculated on the base year, 1973. But this has, in reality, only been a general adjustment of energy prices which were still very low in 1973. Natural gas has remained competitive with other forms of energy (coal and petroleum products) and its consumption continues to develop.

An increase in consumption of about 43 % was recorded between 1972/3 and 1977/8 for industrial consumers. This increase does not come from an increase in the number of consumers, which remains around 69 000, but purely from an increase in average consumption per consumer. This trend is even more noticable for consumers which come under the Non Domestic Credit Tariff (commercial and public administration) : during the period 1973/1978 their number decreased slightly (- 5%) while their average consumption saw a large expansion (+ 55 %).

X. IRELAND

a) Organisation

The natural gas discovered off the Irish coast is not yet distributed in Dublin.

Only gasworks gas manufactured from petroleum products, principally imported naphthas, is available to consumers.

The organisation of the gas industry has therefore undergone no change and the prices recorded in this study still concern only the Dublin Gas Company, which covers approximately 80 % of the market.

b) Regulations

There has been no change since the last study.

c) Taxes

Value added tax, which was charged at a rate of 6,75 % of the price without tax, was removed from gas on Ist July 1975. Since then there has been no direct tax on sales of gas.

d) Domestic prices-tariffs

The tariff system remains the same, the only changes being in the basic rates.

Since Ist July 1975, the prices are the result of two elements :

- production costs, which increase, in particular, as a function of the import price of the raw materials ;
- government subsidies, intended to keep prices down.

The government subsidies form part of the tariff formulae.

There is no block central heating (D_4) in Dublin.

e) Domestic prices- analysis

The results, expressed in national currencies, are given in table N°. 26 in the annex.

Prices evolved in a very unusual pattern :

- large increases from 1973
- a peak in 1975
- a sharp reduction in July 1975
- increases during 1976 which wiped out the previous reduction
- prices remained unchanged since then.

As mentioned above, gas prices in Dublin dropped in July 1975 when V.A.T. was removed and government subsidies were introduced. However, the increase in prices of petroleum products and the drop in value of the pound led to new increases during 1976. A new increase proposed for May 1977 was totally absorbed by an increase in the government subsidy, leaving prices to the consumer unchanged from November, 1976 to January, 1978. In February, 1978 the government subsidy was reduced, bringing about an increase in prices for all consumers.

On the whole, all these changes doubled prices between 1973 and 1978 for the small domestic consumers (D_1, D_2) and tripled prices for gas for heating purposes (D_3). Between January, 1976 and January, 1978, prices increased 36 % for D_1, D_2 and 39 % for D_3. However, one must not forget that in January 1976 prices were in the trough of the wave of change.
The increases were higher for the large domestic consumers than the small. This results in a reduction in price degression. The reduction in unit price between D_1 and D_{3b} which was - 54 % in 1973 was only - 25 % in 1978.

The government subsidy is intended to protect small consumers, for social reasons.

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

		Selling price in DUBLIN			
	GDP	D_1	D_2	D_3	D_{3b}
1973	100	100	100	100	100
1976	157,6	150	154	222	234
1977	178,9	203	210	309	326
1978	193,3	203	210	309	326

It can be seen that the effect of government intervention has been a levelling of prices, which, in the case of D_1 and D_2, avoided price rises which were much greater than those for the whole of goods and services. In 1978, the indices of the selling price of gas (D_1 and D_2) were not much higher than the GDP index. The price increases therefore only more or less compensated for the monetary devaluation. The same cannot be said for the larger consumers (D_3), for whom gas prices increased not only in terms of current prices, but also in terms of constant prices (base year 1973).

f) Industrial prices-tariffs

The tariff system has not been changed since the last study. Only the basic rates have been revised.

g) Industrial prices- analysis

The results, in national currencies, are presented in table N°. 29 in the annex.

Only the small standard consumers I, and I_2 are representative of Dublin.

As for domestic prices and for the same reasons, prices show a upward trend. Between 1976 and 1978 prices increased by + 50 %, a much higher increase than for domestic users.

The tariff system does not encourage the use of gas in industry.

XI. DENMARK

a) Organization

There have been no changes since the last study. The prices recorded relate to the Copenhagen gasworks (KØBENHAVNS BELYSNINGSVAESEN), which is the largest in the country, with 272 000 customers including 1 500 industrial consumers. This company makes and distributes gas manufactured from refinery gas (36 %) and naphtas (64 %). Its volume of production accounts for approximately 70 % of the works gas produced in the whole country.

b) Regulations

There have been no changes since the last study.

c) Taxes

During 1977 value added tax was increased from 15 to 18% on prices net of tax. As a provisional and exceptional measure, the rate of VAT had been reduced to 9.25 % between October 1975 and February 1976. The rates of VAT applied in the present study are therefore as follows :

1973	15 %
1976	9.25 %
1977	15 %
1978	18 %

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

d) Household prices - tariffs

A new tariff structure was introduced on 1 March 1977. 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 varies according to maximum hourly consumption, as follows :

		DKR/year	
meter	⩽ 5 m^3/hour	72	(D_1 D_2 D_3)
	5 - 15 m^3/hour	180	(D_4)
	15 - 25 m^3/hour	288	
	25 - 50 m^3/hour	372	
	50 - 100 m^3/hour	516	
	⩾ 100 m^3/hour	708	

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

			Øre/m^3
1st block	12 000	m^3/year	53
2nd block	108 000	m^3/year	33
3rd block	600 000	m^3/year	26
4th block	1 080 000	m^3/year	23
	excess		18

3) The raw materials surcharge is added to the commodity rate per m^3 and is calculated monthly on the basis of the cost of the products used to manufacture the gas (petroleum products in Copenhagen). As bills for domestic consumers are sent every quarter, the surcharge is the average of the preceding three months. At the beginning of 1978 this surcharge stood at 34.7 Øre per m^3.

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

1) a meter rental identical to that of the standard tariff ;
2) a standing charge of DKR 180 a year ;
3) a single commodity rate of 26 Øre per m^3 consumed ;
4) a raw materials surcharge identical to that of the standard tariff.

In Copenhagen the gas has an energy content of 16 745 kilojoules (approximately 4 000 kcal) per m^3.

e) Household prices - analysis

The results are given, at current prices, in Table No 19 in the annex. Since 1973 the trend in prices has been as follows : sharp increase during 1974, levelling off in 1975, further increases during 1976. The increases in the selling price are due to tariff restructuring, the surcharge for raw materials which reflects the trend in prices of petroleum products, and increased taxation. The rates of increase were as follows :

standard consumer :	D_1	D_2	D_3	D_{3b}	D_4
% 1978 / 1973	+ 138	+ 175	+ 177	+ 194	+ 237
% 1978 / 1976	+ 36	+ 52	+ 37	+ 41	+ 48

The introduction of the new tariff in March 1977 was arranged in such a way as to put a ceiling on the selling prices for the smallest domestic consumers (D_1) for social reasons. As VAT went up at that time, this means that the prices net of tax for this category of consumers went down.

Furthermore, the price increases are all the more pronounced the higher the volume of consumption, resulting in a reduction in degression. The reduction in unit price between the smallest and largest domestic consumer (% D_4/D_1), which amounted to - 58% in 1973, was only - 40% in 1978. The tariff structure is not particularly conducive to consumption. In this connection, it should be pointed out that gas-fired block central heating (standard consumer D_4) is still very rare in Denmark. Block central heating systems are in most cases fed by district heating stations, which do not use works gas as fuel.

A comparison with the national index of gross domestic product (GDP) gives the following results :

		Selling price in Copenhagen			
	PIB	D_1	D_2	D_3	D_{3b}
1973	100	100	100	100	100
1976	134.9	174	181	202	209
1977	147.0	238	243	259	270
1978	161.7	238	275	277	294

In all cases, gas selling prices are increasing at a faster rate than GDP, which means that the price of gas is outstripping the prices of goods and services as a whole. In other words, gas is going up not only at current prices but also in constant terms (base 1973).

The disparity observed in the price trends for the various levels of consumption is due to tariff restructuring.

f) Industrial prices - tariffs

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

It has three components :

1) a meter rental, identical to that of the standard domestic tariff (meter - rating between 5 and 15 m^3/h for I_1 and between 50 and 100 m^3/h for I_2);
2) a degressive commodity rate for blocks of consumption, identical to the standard domestic tariff;
3) a raw materials surcharge which is added to the commodity rate per m^3 and applied monthly, as industrial consumers are billed every month. Accordingly, this surcharge amounted to 33.6 Øre per m^3 in January 1978.

g) Industrial prices - analysis

The results are given, at current prices, in Table No 20 in the annex. Only standard consumers I_1 and I_2 are representative and therefore included in the table. The trend shows
1) a doubling of prices between 1973 and 1976, and
2) more modest increases since then (+ 18 % between 1976 and 1978).
The causes of these increases are the same as in the case of households. Similarly, selling prices to industry are increasing at a much faster rate than the index of gross domestic product ; this means that gas is going up not only at current prices but also in constant terms (base 1973). This is not conducive to the use of gas in industry, whose consumption is, moreover, tending to decline. There are a few larger industrial consumers than those included in the present survey. They have a special tariff which results in prices approximately 25 % lower than those for standard consumer I_2, for an annual consumption which is ten times as high (with a meter-rating of more than 100 m^3 an hour).

XII. COMMUNITY COMPARISON AND CONCLUSIONS

The locations chosen for the Community comparison are capitals or those towns which are most important from a economic point of view, namely:

Düsseldorf	Rotterdam	London
Paris	Brussels	Dublin
Milan	Luxembourg	Copenhagen

The results are shown in Tables 31-36 in the Annex and are given first in current PPSs for the selling price inclusive and exclusive of all taxes, and then in 'deflated' PPSs. These results merit a certain number of comments and conclusions.

a) The upward trend in selling prices continues

Selling prices at current value continue to rise at varying rates in all countris and for all consumers. Three factors are responsible for this : 1) the increase in gas production and distribution costs; 2) the rise in the cost of competing energy sources, especially petroleum products; 3) the increased tax burden.

Between 1973 and 1978, the price of natural gas to small domestic users (D_1 D_2) rose by between 6% and 20% at current prices depending on location, while the price of town gas increased by between 30% and 50%. This marked difference in the degree of increase reflects the difference in costs. Town gas is produced from petroleum products, especially naphtas, in which the market remains firm and the prices of which are climbing steeply.

In addition, it has been noted that the rate of price increase rises the larger the volume of consumption. This is true both of domestic heating and industrial applications. The largest consumers always suffer the highest increases in unit prices. This shows a general desire to reduce the degree of tariff degression.

b) The relative price levels between countries are in a state of flux

Because price rises do not occur at the same time the order of price levels in a Community comparison changes. However, in the case of gas for domestic consumption, the highest prices are most often found in Dublin, Copenhagen and Milan, which are supplied with town gas. For the smallest domestic consumers (D_1) this fact is mitigated by the application of price ceilings introduced on social grounds.

At the other end of the scale, the lowest prices are generally found in the Netherlands and Great Britain which have plentiful resources of natural gas and where taxation on the sale of gas is low.

In the case of industrial users, it appears that the order of locations based on price levels depends mainly on the volume of gas consumed, in other words on the tariff degression curves which differ widely from country to country. A location which is expensive for small industrial consumers may be inexpensive for large consumers, and vice versa. However, two main features may be noted:

1) For industry, town gas is twice as expensive as natural gas and this restricts the use of town gas to small consumers ($I_1 I_2$).
2) The prices of natural gas for industry are especially attractive in Luxembourg where they are sometimes lower than those in Belgium and the Netherlands, despite the fact that the gas must be carried over a greater distance.

c) The price dispersion for household uses in the Community is widening

The absolute and relative price disparity between the locations with the highest and lowest prices in the Community comparison is increasing. It was wider in 1978 than, for example, in 1973 except in the case of the smallest consumers (D_1). In 1978, at the most expensive location, the price was twice or sometimes three times that at the least expensive location, depending on the category of consumer. Calculation of the coefficients of variation has confirmed this.

The widening of the geographical dispersion of prices is the result of diverging trends in tariffs and taxation.

d) The price dispersion for industrial uses in the Community is narrowing

In contrast to the trends noted for households, there has been a convergence of the prices of gas for industrial uses. The relative price disparities between the most expensive and the least expensive location fell by almost half between 1973 and 1978. Calculation of the coefficients of variation has confirmed this observation. However, price disparities between the most expensive and the least expensive location fell by almost half between 1973 and 1978. Calculation of the coefficients of variation has confirmed this observation. However, price disparities remain large (+ 200%, i.e. the disparity is between x 1 and x 3) for the smallest industrial consumers ($I_1 I_2$). The disparities are much smaller for large consumers (+ 40% to + 80%) and have a tendency to decrease as the volume of consumption rises. This results from the fact that at this level the supplies are solely of natural gas.

e) The geographical dispersion of prices may be just as wide within a country as between the countries of the Community

There are two distinct cases here:

1) The countries where the gas industry is centralized (France, United-Kingdom and Italy for large industrial consumers) and the countries with a tariff harmonization body (Netherlands and Belgium). In these countries there is a marked trend towards geographical price equalization and even towards the elimination of price disparities between regions.

2) Countries with a decentralized gas industry where tariffs differ from region to region, and even from town to town (FR Germany; and Italy for domestic consumption and small industrial users). In these countries a widening of price disparities between towns or regions has sometimes been noted. For certain categories of consumers prices may double or even triple from one place to another.

Consequently, in certain extreme cases, the geographical price dispersion may be as wide within a country as on the international level in the Community.

f) Degression is declining

Tariff degression, i.e. the reduction in unit price granted as the volume of consumption rises, is declining everywhere both for households and for industry. In other words, the disparity in unit price between a small and a large consumer is dwindling. This is because there have generally been higher price increases for large consumers than for small consumers. Tariffs have been adjusted in order to reduce the effect of the standing charges and increase the commodity rates. This change of the tariff structure clearly reflects the increase of variable costs in relation to fixed costs in the gas industry.

For domestic consumers the reduction in unit price between a consumption of approximately 8 GJ/year and a consumption of 125 GJ/year reached 50% to 60% in 1978 for natural gas and 20% to 30% for town gas. The shallow degression curve still found in the case of town gas results from the structure of production costs. For town gas, the variable costs are higher than for natural gas.

In the case of gas for industry, there was a unit price reduction of between 40% and 50% in 1978 between an annual consumption of 418 GJ and an annual consumption of 418 000 GJ, i.e. an increase of x 1 000. There are, however, two exceptions : the degression curves are much less steep for Rotterdam and Great Britain.

It should be noted that in industry these degression rates result not only from an increase in the volume consumed but also from a parallel improvement in the regularity of consumption (modulation).

The price degression as shown in this survey results from :

1) The degression curves of the same two-part tariff.
2) The successive tariffs applicable according to the volume of consumption and modulation.

g) The prices net of tax show a different aspect of the situation

An analysis of prices net of tax is of interest to gas producers (revenue element) and industrial users (where VAT is deductible). The prices net of tax show slightly different characteristics from those of selling prices including all taxes (see Tables 32 and 35 in the Annex):

1) The rise was more moderate in 1978.

2) The geographical dispersion of prices was narrower within the Community.

3) The order of classification of locations according to price level was different.

When prices net of tax are considered, Paris, Milan and Copenhagen become relatively lower-priced locations.

All these differences clearly result from the effects of taxation.

h) Taxation acts as a factor in price dispersion

In 1978, the rates of tax levied on sales of gas rose and diverged increasingly in the Community as outlined in the following comparison.

TAX BURDEN ON SALES OF GAS

% of price net of tax

	Germany	France	Italy (household)	Italy (industrial)	Netherlands	Belgium	Grand-Duchy of Luxembourg	United-Kingdom	Ireland	Denmark
1973	11	17.6	6	12	4	6	5	-	6.75	15
1976	11	17.6	6	12	4-4.2[2]	6	5	-	-	9.25
1978 1978	12	17.6	16-78[1]	14	4-4.2	6	5	-	-	18

[1] See section on Italy, point c).

[2] See section on the Netherlands, point c).

Taxes affect the price trend and lead to a wider dispersion of selling prices in the Community.

i) Gas prices are improved when given in constant purchasing power parities

Table Nos 33 and 36 in the Annex show the series of sales prices in 'deflated' PPSs, i.e. after taking into account the effect of monetary depreciation. This is therefore a chronological series calculated using the prices of a base year, in this case 1973. The elimination of monetary devaluation mitigates to a large extent the effect of rising gas prices in the Community given by the price series at current face value. There are even cases where tariff rises do not compensate for monetary depreciation and where the selling price of gas at 'constant prices' has fallen. This is true of small domestic consumers in Paris, Rotterdam, Brussels and London. It also applies to the smallest industrial consumers in Paris and London. In all other cases, the selling prices of gas in 'deflated' PPSs has increased. This indicates therefore that the price of gas has risen more than the prices of all goods and services. There has been a relative increase in gas prices.

A few examples illustrate price movements in deflated PPSs:

TREND IN THE SELLING PRICE OF GAS IN DEFLATED PPS

% 1978/1973

Standard consumer	Düsseldorf	Paris	Milan	Rotterdam	Brussels	Luxembourg	London	Dublin	Copenhagen
D_1	+ 22	- 2	+ 12	- 4	- 7	+ 11	- 26	+ 5	+ 47
D_2	+ 11	- 5	+ 11	- 8	- 9	+ 7	- 19	+ 9	+ 70
D_3	+ 41	+ 3	+ 47	+ 30	- 9	+ 55	- 10	+ 60	+ 71
I_1	+ 9	- 5	+ 21	+ 77	0	+ 60	- 16	.	+ 47
I_2	+ 39	- 8	+ 49	+ 96	+ 23	+ 60	+ 6	.	+ 63
I_{3-1}	+ 49	+ 39	+ 126	+ 72	+ 29	+ 70	+ 19	.	-

STATISTICAL ANNEX

Tables— 1 – 36

NOTE: In this multi-lingual publication, the continental practice is adopted of using a comma for decimal point.

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

BR DEUTSCHLAND

DM/GJ

		HAMBURG *			HANNOVER *			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	22,40	2,22	20,18	15,22	1,51	13,71	1973 D_1
	1976	28,79	2,85	25,94	23,78	2,36	21,42	1976 8,37 GJ/ an-anno
	1977	30,38	3,01	27,37	23,78	2,36	21,42	1977
	1978	30,65	3,28	27,37	23,99	2,57	21,42	1978
D_2 16,74 GJ/ Jahr-year	1973	17,17	1,70	15,47	12,99	1,29	11,70	1973 D_2
	1976	22,59	2,24	20,35	21,42	2,12	19,30	1976 16,74 GJ/ an-anno
	1977	23,92	2,37	21,55	21,42	2,12	19,30	1977
	1978	24,14	2,59	21,55	21,62	2,32	19,30	1978
D_3 83,7 GJ/ Jahr-year	1973	9,81	0,97	8,84	7,05	0,70	6,35	1973 D_3
	1976	13,39	1,33	12,06	10,86	1,08	9,78	1976 83,7 GJ/ an-anno
	1977	14,19	1,41	12,78	10,86	1,08	9,78	1977
	1978	14,31	1,53	12,78	10,95	1,17	9,78	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	9,49	0,94	8,55	6,47	0,64	5,83	1973 D_{3b}
	1976	13,08	1,30	11,78	9,98	0,99	8,99	1976 125,6 GJ/ an-anno
	1977	13,86	1,37	12,49	9,98	0,99	8,99	1977
	1978	13,99	1,50	12,49	10,07	1,08	8,99	1978
D_4 1047 GJ/ Jahr-year	1973	6,74	0,67	6,07	5,64	0,56	5,08	1973 D_4
	1976	9,39	0,93	8,46	9,72	0,96	8,76	1976 1047 GJ/ an-anno
	1977	10,06	1,00	9,06	9,72	0,96	8,76	1977
	1978	10,15	1,09	9,06	9,81	1,05	8,76	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gas naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

BR DEUTSCHLAND

DM/GJ

	Januar	DUSSELDORF * Verkaufspreis Selling price	DUSSELDORF * Steuern Taxes	DUSSELDORF * Preis ohne Steuern Price without taxes	FRANKFURT * Verkaufspreis Selling price	FRANKFURT * Steuern Taxes	FRANKFURT * Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	19,30	1,91	17,39	22,66	2,25	20,41	D_1 1973
	1976	29,16	2,89	26,27	28,83	2,86	25,97	1976 8,37 GJ/ an-anno
	1977	29,16	2,89	26,27	30,48	3,02	27,46	1977
	1978	29,42	3,15	26,27	32,73	3,51	29,22	1978
D_2 16,74 GJ/ Jahr-year	1973	16,04	1,59	14,45	18,29	1,81	16,48	D_2 1973
	1976	22,13	2,19	19,94	19,95	1,98	17,97	1976 16,74 GJ/ an-anno
	1977	22,13	2,19	19,94	21,19	2,10	19,09	1977
	1978	22,33	2,39	19,94	22,83	2,45	20,38	1978
D_3 83,7 GJ/ Jahr-year	1973	8,08	0,80	7,28	8,69	0,86	7,83	D_3 1973
	1976	14,15	1,40	12,75	11,49	1,14	10,35	1976 83,7 GJ/ an-anno
	1977	14,15	1,40	12,75	12,04	1,19	10,85	1977
	1978	14,28	1,53	12,75	13,23	1,42	11,81	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	7,43	0,74	6,69	7,91	0,78	7,13	D_{3b} 1973
	1976	12,62	1,25	11,37	10,16	1,01	9,15	1976 125,6 GJ/ an-anno
	1977	12,62	1,25	11,37	10,70	1,06	9,64	1977
	1978	12,73	1,36	11,37	11,51	1,23	10,28	1978
D_4 1047 GJ/ Jahr-year	1973	6,05	0,60	5,45	6,76	0,67	6,09	D_4 1973
	1976	10,60	1,05	9,55	8,68	0,86	7,82	1976 1047 GJ/ an-anno
	1977	10,60	1,05	9,55	8,98	0,89	8,09	1977
	1978	10,70	1,15	9,55	9,78	1,05	8,73	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gas naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

BR DEUTSCHLAND

DM/GJ

	Januar	STUTTGART * Verkaufspreis Selling price	STUTTGART * Steuern Taxes	STUTTGART * Preis ohne Steuern Price without taxes	MÜNCHEN * Verkaufspreis Selling price	MÜNCHEN * Steuern Taxes	MÜNCHEN * Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	24,18	2,40	21,78	15,67	1,55	14,12	1973
	1976	30,80	3,05	27,75	21,76	2,16	19,60	1976
	1977	30,80	3,05	27,75	21,76	2,16	19,60	1977
	1978	31,42	3,37	28,05	21,95	2,35	19,60	1978
D_2 16,74 GJ/ Jahr-year	1973	17,93	1,78	16,15	12,95	1,28	11,67	1973
	1976	23,89	2,37	21,52	17,93	1,78	16,15	1976
	1977	23,89	2,37	21,52	17,93	1,78	16,15	1977
	1978	25,65	2,75	22,90	18,09	1,94	16,15	1978
D_3 83,7 GJ/ Jahr-year	1973	9,85	0,98	8,87	8,36	0,83	7,53	1973
	1976	13,93	1,38	12,55	11,60	1,15	10,45	1976
	1977	13,93	1,38	12,55	11,60	1,15	10,45	1977
	1978	14,86	1,59	13,27	11,70	1,25	10,45	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	8,46	0,76	7,62	7,94	0,79	7,15	1973
	1976	12,60	1,25	11,35	10,83	1,07	9,76	1976
	1977	12,60	1,25	11,35	10,83	1,07	9,76	1977
	1978	13,56	1,45	12,11	10,93	1,17	9,76	1978
D_4 1047 GJ/ Jahr-year	1973	6,84	0,68	6,16	5,98	0,59	5,39	1973
	1976	11,10	1,10	10,00	8,37	0,83	7,54	1976
	1977	11,10	1,10	10,00	8,37	0,83	7,54	1977
	1978	11,65	1,25	10,40	8,44	0,90	7,54	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

D_1 8,37 GJ/ an-anno
D_2 16,74 GJ/ an-anno
D_3 83,7 GJ/ an-anno
D_{3b} 125,6 GJ/ an-anno
D_4 1047 GJ/ an-anno

* Naturgas
Natural gas

* Gas naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

BR DEUTSCHLAND

DM/GJ

	Januar	HAMBURG * Verkaufspreis Selling price	HAMBURG * Steuern Taxes	HAMBURG * Preis ohne Steuern Price without taxes	HANNOVER * Verkaufspreis Selling price	HANNOVER * Steuern Taxes	HANNOVER * Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/Jahr-year	1973	12,94	1,28	11,66	8,26	0,82	7,44	I_1 1973
	1976	17,18	1,70	15,48	10,47	1,04	9,43	1976 418,6 GJ/an-anno
	1977	17,97	1,78	16,19	10,47	1,04	9,43	1977
	1978	18,13	1,94	16,19	10,56	1,13	9,43	1978
I_2 4186 GJ/Jahr-year 200 Tage-days	1973	:	:	:	5,43	0,54	4,89	I_2 1973
	1976	:	:	:	7,80	0,77	7,03	1976 4186 GJ/an-anno
	1977	9,67	0,96	8,71	7,80	0,77	7,03	1977
	1978	9,76	1,05	8,71	7,87	0,84	7,03	1978
I_{3-1} 41860 GJ/Jahr-year 200 Tage-days 1 600 h	1973				4,53	0,45	4,08	I_{3-1} 1973
	1976				6,69	0,66	6,03	1976 41860 GJ/an-anno
	1977				6,69	0,66	6,03	1977
	1978				6,75	0,72	6,03	1978 200 jours-giorni 1 600 h
I_{3-2} 41860 GJ/Jahr-year 250 Tage-days 4 000 h	1973		PRICES		4,08	0,40	3,68	I_{3-2} 1973
	1976		NOT DISCLOSED		5,88	0,58	5,30	1976 41860 GJ/an-anno
	1977				5,88	0,58	5,30	1977
	1978				5,94	0,64	5,30	1978 250 jours-giorni 4 000 h
I_{4-1} 418600 GJ/Jahr-year 250 Tage-days 4 000 h	1973				3,60	0,36	3,24	I_{4-1} 1973
	1976				5,62	0,56	5,06	1976 418600 GJ/an-anno
	1977				5,62	0,56	5,06	1977
	1978				5,67	0,61	5,06	1978 250 jours-giorni 4 000 h
I_{4-2} 418600 GJ/Jahr-year 330 Tage-days 8 000 h	1973							I_{4-2} 1973
	1976							1976 418600 GJ/an-anno
	1977							1977
	1978							1978 330 jours-giorni 8 000 h
I_5 4186000 GJ/Jahr-year 330 Tage-days 8 000 h	1973				2,93	0,29	2,64	I_5 1973
	1976				5,27	0,52	4,75	1976 4186000 GJ/an-anno
	1977				:	:	:	1977
	1978				:	:	:	1978 330 jours-giorni 8 000 h
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

BR DEUTSCHLAND

DM/GJ

Januar	DÜSSELDORF * Verkaufspreis Selling price	DÜSSELDORF * Steuern Taxes	DÜSSELDORF * Preis ohne Steuern Price without taxes	FRANKFURT * Verkaufspreis Selling price	FRANKFURT * Steuern Taxes	FRANKFURT * Preis ohne Steuern Price without taxes	Janvier
I_1							**I_1**
418,6 GJ/Jahr-year							418,6 GJ/an-anno
1973	10,56	1,05	9,51	10,60	1,05	9,55	1973
1976	14,32	1,42	12,90	12,99	1,29	11,70	1976
1977	14,32	1,42	12,90	13,35	1,32	12,03	1977
1978	14,45	1,55	12,90	14,09	1,51	12,58	1978
I_2							**I_2**
4186 GJ/Jahr-year 200 Tage-days							4186 GJ/an-anno
1973	4,97	0,49	4,48	6,55	0,65	5,90	1973
1976	7,85	0,78	7,07	7,96	0,79	7,17	1976
1977	8,08	0,80	7,28	8,51	0,84	7,67	1977
1978	8,64	0,93	7,71	8,99	0,96	8,03	1978
I_{3-1}							**I_{3-1}**
41860 GJ/Jahr-year 200 Tage-days 1 600 h							41860 GJ/an-anno 200 jours-giorni 1 600 h
1973	4,34	0,43	3,91	4,98	0,49	4,49	1973
1976	7,34	0,73	6,61	7,43	0,74	6,69	1976
1977	7,56	0,75	6,81	7,55	0,75	6,80	1977
1978	8,09	0,87	7,22	7,93	0,85	7,08	1978
I_{3-2}							**I_{3-2}**
41860 GJ/Jahr-year 250 Tage-days 4 000 h							41860 GJ/an-anno 250 jours-giorni 4 000 h
1973	4,16	0,41	3,75	4,64	0,46	4,18	1973
1976	6,98	0,69	6,29	7,16	0,71	6,45	1976
1977	7,20	0,71	6,49	7,37	0,73	6,64	1977
1978	7,72	0,83	6,89	7,72	0,83	6,89	1978
I_{4-1}							**I_{4-1}**
418600 GJ/Jahr-year 250 Tage-days 4 000 h							418600 GJ/an-anno 250 jours-giorni 4 000 h
1973	3,09	0,31	2,78	3,71	0,37	3,34	1973
1976	6,40	0,63	5,77	6,09	0,60	5,49	1976
1977	6,77	0,67	6,10	6,75	0,67	6,08	1977
1978	7,10	0,76	6,34	7,25	0,78	6,47	1978
I_{4-2}							**I_{4-2}**
418600 GJ/Jahr-year 330 Tage-days 8 000 h							418600 GJ/an-anno 330 jours-giorni 8 000 h
1973	2,93	0,29	2,64	3,19	0,32	2,87	1973
1976	6,06	0,60	5,46	5,57	0,55	5,02	1976
1977	6,44	0,64	5,80	6,57	0,65	5,92	1977
1978	6,76	0,72	6,04	7,03	0,75	6,28	1978
I_5							**I_5**
4186000 GJ/Jahr-year 330 Tage-days 8 000 h							4186000 GJ/an-anno 330 jours-giorni 8 000 h
1973							1973
1976							1976
1977							1977
1978							1978
January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

BR DEUTSCHLAND

DM/GJ

	Januar	STUTTGART * Verkaufspreis Selling price	STUTTGART * Steuern Taxes	STUTTGART * Preis ohne Steuern Price without taxes	MÜNCHEN * Verkaufspreis Selling price	MÜNCHEN * Steuern Taxes	MÜNCHEN * Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/ Jahr-year	1973	7,10	0,70	6,40	:	:	:	I_1 1973 418,6 GJ/ 1976 an-anno 1977 1978
	1976	11,14	1,10	10,04	10,50	1,04	9,46	
	1977	11,14	1,10	10,04	10,50	1,04	9,46	
	1978	11,70	1,25	10,45	10,60	1,14	9,46	
I_2 4186 GJ/ Jahr-year 200 Tage-days	1973	6,66	0,66	6,00	:	:	:	I_2 1973 4186 GJ/ 1976 an-anno 1977 1978
	1976	11,09	1,10	9,99	8,71	0,86	7,85	
	1977	11,09	1,10	9,99	9,19	0,91	8,28	
	1978	11,75	1,28	10,47	9,31	1,00	8,31	
I_{3-1} 41860 GJ/ Jahr-year 200 Tage-days 1 600 h	1973	5,68	0,56	5,12	:	:	:	I_{3-1} 1973 41860 GJ/ 1976 an-anno 1977 1978 200 jours-giorni 1 600 h
	1976	11,01	1,09	9,92	8,71	0,86	7,85	
	1977	11,01	1,09	9,92	9,19	0,91	8,28	
	1978	11,65	1,25	10,40	9,31	1,00	8,31	
I_{3-2} 41860 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	4,55	0,45	4,10	:	:	:	I_{3-2} 1973 41860 GJ/ 1976 an-anno 1977 1978 250 jours-giorni 4 000 h
	1976	9,02	0,89	8,13	6,52	0,65	5,87	
	1977	9,02	0,89	8,13	6,87	0,68	6,19	
	1978	9,64	1,03	8,61	6,96	0,75	6,21	
I_{4-1} 418600 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	3,85	0,38	3,47	:	:	:	I_{4-1} 1973 418600 GJ/ 1976 an-anno 1977 1978 250 jours-giorni 4 000 h
	1976	9,01	0,89	8,12	6,42	0,64	5,78	
	1977	9,01	0,89	8,12	6,78	0,67	6,11	
	1978	9,63	1,03	8,60	6,52	0,70	5,82	
I_{4-2} 418600 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	3,47	0,34	3,13		PRICES		I_{4-2} 1973 418600 GJ/ 1976 an-anno 1977 1978 330 jours-giorni 8 000 h
	1976	8,35	0,83	7,52		NOT DISCLOSED		
	1977	8,35	0,83	7,52				
	1978	8,96	0,96	8,00				
I_5 4186000 GJ/ Jahr-year 330 Tage-days 8 000 h	1973							I_5 1973 4186000 GJ/ 1976 an-anno 1977 1978 330 jours-giorni 8 000 h
	1976							
	1977							
	1978							
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

FRANCE

FF/GJ

		LILLE *			PARIS *			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	30,00	4,49	25,51	30,00	4,49	25,51	1973 D_1
	1976	42,70	6,40	36,38	42,78	6,40	36,38	1976 8,37 GJ/ an-anno
	1977	45,72	6,84	38,88	45,72	6,84	38,88	1977
	1978	48,70	7,29	41,41	48,70	7,29	41,41	1978
D_2 16,74 GJ/ Jahr-year	1973	25,15	3,76	21,39	25,39	3,80	21,59	1973 D_2
	1976	36,08	5,40	30,68	36,08	5,40	30,68	1976 16,74 GJ/ an-anno
	1977	38,53	5,77	32,76	38,53	5,77	32,76	1977
	1978	41,02	6,14	34,88	41,02	6,14	34,88	1978
D_3 83,7 GJ/ Jahr-year	1973	13,67	2,05	11,62	15,17	2,27	12,90	1973 D_3
	1976	20,36	3,05	17,31	22,24	3,33	18,91	1976 83,7 GJ/ an-anno
	1977	23,31	3,49	19,82	24,10	3,61	20,49	1977
	1978	24,83	3,72	21,11	25,67	3,84	21,83	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	11,74	1,76	9,98	12,65	1,89	10,76	1973 D_{3b}
	1976	17,53	2,62	14,91	18,67	2,79	15,88	1976 125,6 GJ/ an-anno
	1977	20,32	3,04	17,28	20,83	3,12	17,71	1977
	1978	21,64	3,24	18,40	22,18	3,32	18,86	1978
D_4 1047 GJ/ Jahr-year	1973	7,70	1,15	6,55	7,99	1,20	6,79	1973 D_4
	1976	16,75	2,51	14,24	16,53	2,47	14,06	1976 1047 GJ/ an-anno
	1977	16,77	2,51	14,26	16,53	2,47	14,06	1977
	1978	17,85	2,67	15,18	17,60	2,63	14,97	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gas naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

FRANCE

FF/GJ

		STRASBOURG *			MARSEILLE *			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	35,94	5,38	30,56	30,34	4,54	25,80	1973
	1976	56,00	8,38	47,62	42,78	6,40	36,38	1976
	1977	64,76	9,69	55,07	45,72	6,84	38,88	1977
	1978	68,96	10,32	58,64	48,70	7,29	41,41	1978
D_2 16,74 GJ/ Jahr-year	1973	26,21	3,92	22,29	25,73	3,85	21,88	1973
	1976	40,17	6,01	34,16	36,08	5,40	30,68	1976
	1977	46,46	6,95	39,51	38,53	5,77	32,76	1977
	1978	49,49	7,41	42,08	41,02	6,14	34,88	1978
D_3 83,7 GJ/ Jahr-year	1973	12,24	1,83	10,41	15,05	2,25	12,80	1973
	1976	22,92	3,43	19,49	22,18	3,32	18,86	1976
	1977	25,78	3,86	21,92	24,44	3,66	20,78	1977
	1978	27,47	4,11	23,36	26,04	3,90	22,14	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	11,35	1,70	9,65	12,66	1,89	10,77	1973
	1976	21,32	3,19	18,13	18,75	2,81	15,94	1976
	1977	24,19	3,62	20,57	21,16	3,17	17,99	1977
	1978	25,78	3,86	21,92	22,54	3,37	19,17	1978
D_4 1047 GJ/ Jahr-year	1973	7,94	1,19	6,75	8,18	1,22	6,96	1973
	1976	16,18	2,42	13,76	16,75	2,51	14,24	1976
	1977	18,15	2,72	15,43	16,76	2,51	14,25	1977
	1978	19,32	2,89	16,43	17,85	2,67	15,18	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

D_1 8,37 GJ/ an-anno
D_2 16,74 GJ/ an-anno
D_3 83,7 GJ/ an-anno
D_{3b} 125,6 GJ/ an-anno
D_4 1047 GJ/ an-anno

* Naturgas
Natural gas

* Gas naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

FRANCE

FF/GJ

		LYON *			TOULOUSE *			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	29,39	4,40	24,99	27,67	4,14	23,53	1973 D_1
	1976	42,78	6,40	36,38	41,24	6,17	35,07	1976 8,37 GJ/ an-anno
	1977	45,72	6,84	38,88	45,17	6,76	38,41	1977
	1978	48,70	7,29	41,41	48,10	7,20	40,90	1978
D_2 16,74 GJ/ Jahr-year	1973	24,78	3,71	21,07	23,06	3,45	19,61	1973 D_2
	1976	36,08	5,40	30,68	34,53	5,17	29,38	1976 16,74 GJ/ an-anno
	1977	38,53	5,77	32,76	37,96	5,68	32,28	1977
	1978	41,02	6,14	34,88	41,02	6,14	34,88	1978
D_3 83,7 GJ/ Jahr-year	1973	15,64	2,34	13,30	15,17	2,27	12,90	1973 D_3
	1976	23,03	3,45	19,58	22,32	3,34	18,98	1976 83,7 GJ/ an-anno
	1977	24,78	3,71	21,07	24,10	3,61	20,49	1977
	1978	26,40	3,95	22,45	25,67	3,84	21,83	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	13,14	1,97	11,17	12,65	1,89	10,76	1973 D_{3b}
	1976	19,43	2,91	16,52	18,73	2,80	15,93	1976 125,6 GJ/ an-anno
	1977	21,50	3,22	18,28	20,83	3,11	17,72	1977
	1978	22,91	3,43	19,48	22,18	3,32	18,86	1978
D_4 1047 GJ/ Jahr-year	1973	8,41	1,26	7,15	7,99	1,20	6,79	1973 D_4
	1976	16,99	2,54	14,45	16,53	2,47	14,06	1976 1047 GJ/ an-anno
	1977	16,99	2,54	14,45	16,53	2,47	14,06	1977
	1978	18,08	2,71	15,37	17,60	2,63	14,97	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gas naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

FRANCE

FF/GJ

	Januar	LILLE * Verkaufspreis Selling price	LILLE * Steuern Taxes	LILLE * Preis ohne Steuern Price without taxes	PARIS * Verkaufspreis Selling price	PARIS * Steuern Taxes	PARIS * Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/ Jahr-year	1973	8,84	1,32	7,52	13,35	2,00	11,35	I_1 418,6 GJ/ an-anno
	1976	18,28	2,74	15,54	18,40	2,75	15,65	
	1977	18,28	2,74	15,54	19,70	2,95	16,75	
	1978	19,46	2,91	16,55	20,97	3,14	17,83	
I_2 4186 GJ/ Jahr-year 200 Tage-days	1973	8,69	1,30	7,39	11,81	1,77	10,04	I_2 4186 GJ/ an-anno
	1976	15,15	2,27	12,88	16,77	2,51	14,26	
	1977	15,15	2,27	12,88	16,77	2,51	14,26	
	1978	16,12	2,41	13,71	17,88	2,68	15,20	
I_{3-1} 41860 GJ/ Jahr-year 200 Tage-days 1 600 h	1973	5,49	0,82	4,67	6,48	0,97	5,51	I_{3-1} 41860 GJ/ an-anno 200 jours-giorni 1 600 h
	1976	11,63	1,74	9,89	13,21	1,98	11,23	
	1977	12,96	1,94	11,02	13,21	1,98	11,23	
	1978	14,83	2,22	12,61	14,94	2,24	12,70	
I_{3-2} 41860 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	4,99	0,75	4,24	5,68	0,85	4,83	I_{3-2} 41860 GJ/ an-anno 250 jours-giorni 4 000 h
	1976	10,15	1,52	8,63	11,57	1,73	9,84	
	1977	11,49	1,72	9,77	11,57	1,73	9,84	
	1978	13,27	1,99	11,28	13,19	1,97	11,22	
I_{4-1} 418600 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	4,37	0,65	3,72	4,81	0,72	4,09	I_{4-1} 418600 GJ/ an-anno 250 jours-giorni 4 000 h
	1976	8,36	1,25	7,11	9,55	1,43	8,12	
	1977	9,70	1,45	8,25	9,55	1,43	8,12	
	1978	11,35	1,70	9,65	11,03	1,65	9,38	
I_{4-2} 418600 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	4,07	0,61	3,46	4,61	0,69	3,92	I_{4-2} 418600 GJ/ an-anno 330 jours-giorni 8 000 h
	1976	8,03	1,20	6,83	9,22	1,38	7,84	
	1977	9,37	1,40	7,97	9,22	1,38	7,84	
	1978	11,01	1,65	9,36	10,68	1,60	9,08	
I_5 4186000 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	3,82	0,57	3,25	4,17	0,62	3,55	I_5 4186000 GJ/ an-anno 330 jours-giorni 8 000 h
	1976	7,37	1,10	6,27	8,56	1,28	7,28	
	1977	8,71	1,30	7,41	8,56	1,28	7,28	
	1978	10,30	1,54	8,76	10,27	1,54	8,73	
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

FRANCE

FF/GJ

	Januar	STRASBOURG * Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	MARSEILLE * Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/ Jahr-year	1973	26,46	3,96	22,50	11,12	1,66	9,46	I_1 1973 418,6 GJ/ an-anno
	1976	22,57	3,38	19,19	17,05	2,55	14,50	1976
	1977	22,70	3,40	19,30	20,42	3,06	17,36	1977
	1978	24,18	3,62	20,56	21,74	3,25	18,49	1978
I_2 4186 GJ/ Jahr-year 200 Tage-days	1973	7,76	1,16	6,60	8,03	1,20	6,83	I_2 1973 4186 GJ/ an-anno
	1976	16,96	2,54	14,42	16,26	2,43	13,83	1976
	1977	19,15	2,87	16,28	16,26	2,43	13,83	1977
	1978	20,38	3,05	17,33	17,33	2,59	14,74	1978
I_{3-1} 41860 GJ/ Jahr-year 200 Tage-days 1 600 h	1973				6,82	1,02	5,80	I_{3-1} 1973 41860 GJ/ an-anno 1978 200 jours-giorni 1 600 h
	1976				13,90	2,08	11,82	1976
	1977				14,74	2,21	12,53	1977
	1978				16,64	2,49	14,15	1978
I_{3-2} 41860 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	4,72	0,71	4,01	5,37	0,80	4,57	I_{3-2} 1973 41860 GJ/ an-anno 1978 250 jours-giorni 4 000 h
	1976	9,69	1,45	8,24	10,95	1,64	9,31	1976
	1977	12,92	1,93	10,99	11,78	1,76	10,02	1977
	1978	15,93	2,38	13,55	13,50	2,02	11,48	1978
I_{4-1} 418600 GJ/ Jahr-year 250 Tage-days 4 000 h	1973				4,81	0,72	4,09	I_{4-1} 1973 418600 GJ/ an-anno 1978 250 jours-giorni 4 000 h
	1976				9,56	1,43	8,13	1976
	1977				10,40	1,56	8,84	1977
	1978				12,02	1,80	10,22	1978
I_{4-2} 418600 GJ/ Jahr-year 330 Tage-days 8 000 h	1973				4,28	0,64	3,64	I_{4-2} 1973 418600 GJ/ an-anno 1978 330 jours-giorni 8 000 h
	1976				8,64	1,29	7,35	1976
	1977				9,48	1,42	8,06	1977
	1978				11,04	1,65	9,39	1978
I_5 4186000 GJ/ Jahr-year 330 Tage-days 8 000 h	1973				4,03	0,60	3,43	I_5 1973 4186000 GJ/ an-anno 1978 330 jours-giorni 8 000 h
	1976				8,23	1,23	7,00	1976
	1977				9,07	1,36	7,71	1977
	1978				10,61	1,59	9,02	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

FRANCE

FF/GJ

		LYON *			TOULOUSE *			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/ Jahr-year	1973	11,58	1,73	9,85	10,23	1,53	8,70	I_1 1973 418,6 GJ/ an-anno
	1976	17,38	2,60	14,78	15,61	2,34	13,27	1976
	1977	18,57	2,78	15,79	17,23	2,58	14,65	1977
	1978	19,77	2,96	16,81	18,36	2,75	15,61	1978
I_2 4186 GJ/ Jahr-year 200 Tage-days	1973	8,17	1,22	6,95	7,11	1,06	6,05	I_2 1973 4186 GJ/ an-anno
	1976	17,23	2,58	14,65	13,44	2,01	11,43	1976
	1977	17,23	2,58	14,65	14,83	2,22	12,61	1977
	1978	18,35	2,75	15,60	15,81	2,37	13,44	1978
I_{3-1} 41860 GJ/ Jahr-year 200 Tage-days 1 600 h	1973	6,04	0,90	5,14	5,00	0,75	4,25	I_{3-1} 1973 41860 GJ/ an-anno 1978 200 jours-giorni 1 600 h
	1976	12,92	1,93	10,99	10,18	1,52	8,66	1976
	1977	13,76	2,06	11,70	11,52	1,72	9,80	1977
	1978	15,62	2,34	13,28	14,46	2,16	12,30	1978
I_{3-2} 41860 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	5,20	0,78	4,42	4,61	0,69	3,92	I_{3-2} 1973 41860 GJ/ an-anno 1978 250 jours-giorni 4 000 h
	1976	10,60	1,59	9,01	9,41	1,41	8,00	1976
	1977	11,42	1,71	9,71	10,74	1,61	9,13	1977
	1978	13,11	1,96	11,15	13,63	2,04	11,59	1978
I_{4-1} 418600 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	4,90	0,73	4,17	3,89	0,58	3,31	I_{4-1} 1973 418600 GJ/ an-anno 1978 250 jours-giorni 4 000 h
	1976	9,33	1,40	7,93	7,91	1,18	6,73	1976
	1977	10,16	1,52	8,64	9,26	1,39	7,87	1977
	1978	11,77	1,74	10,01	12,04	1,80	10,24	1978
I_{4-2} 418600 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	4,32	0,65	3,67	3,14	0,47	2,67	I_{4-2} 1973 418600 GJ/ an-anno 1978 330 jours-giorni 8 000 h
	1976	8,47	1,27	7,20	6,63	0,99	5,64	1976
	1977	9,30	1,39	7,91	7,97	1,19	6,78	1977
	1978	10,85	1,62	9,23	10,68	1,60	9,08	1978
I_5 4186000 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	4,23	0,63	3,60	3,08	0,46	2,62	I_5 1973 4186000 GJ/ an-anno 1978 330 jours-giorni 8 000 h
	1976	8,06	1,21	6,85	6,53	0,98	5,55	1976
	1977	8,89	1,33	7,56	7,87	1,18	6,69	1977
	1978	10,42	1,56	8,86	10,57	1,58	8,99	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

ITALIA

LIT/GJ

		TORINO *			MILANO +				
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier	
D_1 8,37 GJ/ Jahr-year	1973	2 626	149	2 477	2 759	176	2 583	1973	D_1 8,37 GJ/ an-anno
	1976	2 836	161	2 675	4 160	253	3 907	1976	
	1977	2 951	167	2 784	5 340	302	5 038	1977	
	1978	4 242	1 028	3 214	6 702	957	5 745	1978	
D_2 16,74 GJ/ Jahr-year	1973	2 228	126	2 102	2 569	165	2 404	1973	D_2 16,74 GJ/ an-anno
	1976	2 416	137	2 279	3 552	218	3 334	1976	
	1977	2 578	146	2 432	4 799	272	4 527	1977	
	1978	3 927	1 011	2 916	6 170	927	5 243	1978	
D_3 83,7 GJ/ Jahr-year	1973	1 170	64	1 104	1 638	112	1 526	1973	D_3 83,7 GJ/ an-anno
	1976	1 814	103	1 711	2 510	159	2 351	1976	
	1977	2 147	122	2 025	3 816	216	3 600	1977	
	1978	3 704	998	2 706	5 196	872	4 324	1978	
D_{3b} 125,6 GJ/ Jahr-year	1973	1 078	61	1 017	1 593	110	1 483	1973	D_{3b} 125,6 GJ/ an-anno
	1976	1 738	98	1 640	2 475	157	2 318	1976	
	1977	2 085	118	1 967	3 785	214	3 571	1977	
	1978	3 660	995	2 665	5 165	870	4 295	1978	
D_4 1047 GJ/ Jahr-year	1973	706	40	666	1 176	87	1 089	1973	D_4 1047 GJ/ an-anno
	1976	1 659	94	1 565	2 292	146	2 146	1976	
	1977	2 033	115	1 918	3 614	205	3 409	1977	
	1978	3 703	997	2 706	4 994	860	4 134	1978	
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio	

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

* Gas naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

ITALIA

LIT/GJ

		GENOVA *			NAPOLI +			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	2 381	135	2 246	2 502	142	2 360	1973
	1976	2 640	150	2 490	5 638	319	5 319	1976
	1977	3 065	173	2 892	5 638	319	5 319	1977
	1978	5 055	1 139	3 916	8 394	2 066	6 328	1978
D_2 16,74 GJ/ Jahr-year	1973	1 748	99	1 649	2 631	149	2 482	1973
	1976	2 259	128	2 131	5 536	313	5 223	1976
	1977	2 685	152	2 533	5 536	313	5 223	1977
	1978	4 270	1 095	3 175	8 322	2 064	6 258	1978
D_3 83,7 GJ/ Jahr-year	1973	1 748	99	1 649	1 498	85	1 413	1973
	1976	1 862	105	1 757	2 386	135	2 251	1976
	1977	2 289	130	2 159	2 386	135	2 251	1977
	1978	3 668	1 061	2 607	4 813	1 865	2 948	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	1 748	99	1 649	1 374	78	1 296	1973
	1976	1 788	101	1 687	2 205	125	2 080	1976
	1977	2 218	129	2 089	2 205	125	2 080	1977
	1978	3 600	1 057	2 543	4 590	1 852	2 738	1978
D_4 1047 GJ/ Jahr-year	1973	1 748	99	1 649	-	-	-	1973
	1976	1 762	100	1 662	2 095	119	1 976	1976
	1977	2 188	124	2 064	2 095	119	1 976	1977
	1978	3 473	1 049	2 424	4 176	1 829	2 347	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

D_1: 8,37 GJ/ an-anno
D_2: 16,74 GJ/ an-anno
D_3: 83,7 GJ/ an-anno
D_{3b}: 125,6 GJ/ an-anno
D_4: 1047 GJ/ an-anno

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

* Gaz naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

ITALIA

LIT/GJ

	Januar	ROMA * Verkaufspreis Selling price	ROMA * Steuern Taxes	ROMA * Preis ohne Steuern Price without taxes	ROMA + Verkaufspreis Selling price	ROMA + Steuern Taxes	ROMA + Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/Jahr-year	1973	2 165	123	2 042	3 391	192	3 199	1973
	1976	2 702	153	2 549	3 741	212	3 529	1976
	1977	3 593	203	3 390	5 885	333	5 552	1977
	1978	5 064	1 075	3 989	7 795	1 071	6 724	1978
D_2 16,74 GJ/Jahr-year	1973	1 629	92	1 537	2 627	149	2 478	1973
	1976	1 922	109	1 813	3 310	187	3 123	1976
	1977	3 451	195	3 256	6 424	364	6 060	1977
	1978	5 139	1 079	4 060	8 345	1 102	7 243	1978
D_3 83,7 GJ/Jahr-year	1973	1 064	60	1 004	2 029	115	1 914	1973
	1976	1 283	73	1 210	2 976	168	2 808	1976
	1977	2 953	167	2 786	5 381	305	5 076	1977
	1978	4 577	1 047	3 530	7 707	1 066	6 641	1978
D_{3b} 125,6 GJ/Jahr-year	1973	985	56	929	1 964	111	1 853	1973
	1976	1 204	68	1 136	2 922	165	2 757	1976
	1977	2 907	165	2 742	5 339	302	5 037	1977
	1978	4 537	1 045	3 492	7 682	1 065	6 617	1978
D_4 1047 GJ/Jahr-year	1973	735	42	693	1 286	73	1 213	1973
	1976	1 118	63	1 055	2 706	153	2 553	1976
	1977	2 882	163	2 719	5 477	310	5 167	1977
	1978	4 524	1 044	3 480	7 861	1 078	6 783	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

D_1 8,37 GJ/an-anno
D_2 16,74 GJ/an-anno
D_3 83,7 GJ/an-anno
D_{3b} 125,6 GJ/an-anno
D_4 1047 GJ/an-anno

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

* Gas naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

ITALIA

LIT/GJ

Januar	TORINO * Verkaufspreis Selling price	TORINO * Steuern Taxes	TORINO * Preis ohne Steuern Price without taxes	MILANO + * Verkaufspreis Selling price	MILANO + * Steuern Taxes	MILANO + * Preis ohne Steuern Price without taxes	Janvier
I_1							I_1
1973	875	94	781	2 086	243	1 843	1973
418,6 GJ/ Jahr-year 1976	1 805	193	1 612	3 151	354	2 797	1976 418,6 GJ/ an-anno
1977	2 202	236	1 966	4 539	487	4 052	1977
1978	3 356	412	2 944	5 447	669	4 778	1978
I_2							I_2
1973	712	76	636	1 504	181	1 323	1973
4186 GJ/ Jahr-year 1976	1 702	182	1 520	3 004	339	2 665	1976 4186 GJ/ an-anno
1977	2 125	228	1 897	3 943	422	3 521	1977
200 Tage-days 1978	3 278	403	2 875	4 840	594	4 246	1978
I_{3-1}							I_{3-1}
1973	440	47	393	440	47	393	1973
41860 GJ/ Jahr-year 1976	1 176	126	1 050	1 176	126	1 050	1976 41860 GJ/ an-anno
1977	1 758	188	1 570	1 758	188	1 570	1977
200 Tage-days 1978	2 153	264	1 889	2 153	264	1 889	1978 200 jours-giorni
1 600 h							1 600 h
I_{3-2}							I_{3-2}
1973	440	47	393	440	47	393	1973
41860 GJ/ Jahr-year 1976	1 176	126	1 050	1 176	126	1 050	1976 41860 GJ/ an-anno
1977	1 758	188	1 570	1 758	188	1 570	1977
250 Tage-days 1978	2 153	264	1 889	2 153	264	1 889	1978 250 jours-giorni
4 000 h							4 000 h
I_{4-1}							I_{4-1}
1973	420	45	375	420	45	375	1973
418600 GJ/ Jahr-year 1976	1 155	124	1 031	1 155	124	1 031	1976 418600 GJ/ an-anno
1977	1 726	185	1 541	1 726	185	1 541	1977
250 Tage-days 1978	2 108	259	1 849	2 108	259	1 849	1978 250 jours-giorni
4 000 h							4 000 h
I_{4-2}							I_{4-2}
1973	420	45	375	420	45	375	1973
418600 GJ/ Jahr-year 1976	1 155	124	1 031	1 155	124	1 031	1976 418600 GJ/ an-anno
1977	1 726	185	1 541	1 726	185	1 541	1977
330 Tage-days 1978	2 108	259	1 849	2 108	259	1 849	1978 330 jours-giorni
8 000 h							8 000 h
I_5							I_5
1973	412	44	368	412	44	368	1973
4186000 GJ/ Jahr-year 1976	1 125	121	1 004	1 125	121	1 004	1976 4186000 GJ/ an-anno
1977	1 681	180	1 501	1 681	180	1 501	1977
330 Tage-days 1978	2 038	250	1 788	2 038	250	1 788	1978 330 jours-giorni
8 000 h							8 000 h
January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

\+ Ortsgas für I_1, I_2
Gasworks gas for I_1, I_2

* Gaz naturel
Gas naturale

\+ Gaz d'usines pour I_1, I_2
Gas di officina per I_1, I_2

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

ITALIA

LIT/GJ

Januar	GENOVA * Verkaufspreis Selling price	GENOVA * Steuern Taxes	GENOVA * Preis ohne Steuern Price without taxes	NAPOLI * Verkaufspreis Selling price	NAPOLI * Steuern Taxes	NAPOLI * Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/ Jahr-year	1973: 1 019	109	910				I_1 1973 1976 1977 1978 418,6 GJ/ an-anno
	1976: 1 605	172	1 433				
	1977: 2 106	225	1 881				
	1978: 2 362	290	2 072				
I_2 4186 GJ/ Jahr-year 200 Tage-days	1973: 923	99	824				I_2 1973 1976 1977 1978 4186 GJ/ an-anno
	1976: 1 536	165	1 371				
	1977: 2 024	217	1 807				
	1978: 2 231	274	1 957				
I_{3-1} 41860 GJ/ Jahr-year 200 Tage-days 1 600 h	1973: 440	47	393	440	47	393	I_{3-1} 1973 1976 1977 1978 41860 GJ/ an-anno 200 jours-giorni 1 600 h
	1976: 1 176	126	1 050	1 176	126	1 050	
	1977: 1 758	188	1 570	1 758	188	1 570	
	1978: 2 153	264	1 889	2 153	264	1 889	
I_{3-2} 41860 GJ/ Jahr-year 250 Tage-days 4 000 h	1973: 440	47	393	440	47	393	I_{3-2} 1973 1976 1977 1978 41860 GJ/ an-anno 250 jours-giorni 4 000 h
	1976: 1 176	126	1 050	1 176	126	1 050	
	1977: 1 758	188	1 570	1 758	188	1 570	
	1978: 2 153	264	1 889	2 153	264	1 889	
I_{4-1} 418600 GJ/ Jahr-year 250 Tage-days 4 000 h	1973: 420	45	375	420	45	375	I_{4-1} 1973 1976 1977 1978 418600 GJ/ an-anno 250 jours-giorni 4 000 h
	1976: 1 155	124	1 031	1 155	124	1 031	
	1977: 1 726	185	1 541	1 726	185	1 541	
	1978: 2 108	259	1 849	2 108	259	1 849	
I_{4-2} 418600 GJ/ Jahr-year 330 Tage-days 8 000 h	1973: 420	45	375	420	45	375	I_{4-2} 1973 1976 1977 1978 418600 GJ/ an-anno 330 jours-giorni 8 000 h
	1976: 1 155	124	1 031	1 155	124	1 031	
	1977: 1 726	185	1 541	1 726	185	1 541	
	1978: 2 108	259	1 849	2 108	259	1 849	
I_5 4186000 GJ/ Jahr-year 330 Tage-days 8 000 h	1973: 412	44	368	412	44	368	I_5 1973 1976 1977 1978 4186000 GJ/ an-anno 330 jours-giorni 8 000 h
	1976: 1 125	121	1 004	1 125	121	1 004	
	1977: 1 681	180	1 501	1 681	180	1 501	
	1978: 2 038	250	1 788	2 038	250	1 788	
January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

ITALIA

LIT/GJ

	Januar	ROMA * Verkaufspreis Selling price	ROMA * Steuern Taxes	ROMA * Preis ohne Steuern Price without taxes	ROMA + Verkaufspreis Selling price	ROMA + Steuern Taxes	ROMA + Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/ Jahr-year	1973	875	94	781	2 216	237	1 979	I_1 1973 418,6 GJ/ 1976 an-anno 1977 1978
	1976	1 599	171	1 428	2 661	285	2 376	
	1977	2 992	321	2 671	6 108	654	5 454	
	1978	3 895	417	3 478	7 967	854	7 113	
I_2 4186 GJ/ Jahr-year 200 Tage-days	1973	712	76	636	2 018	216	1 802	I_2 1973 4186 GJ/ 1976 an-anno 1977 1978
	1976	1 498	161	1 337	2 150	230	1 920	
	1977	2 966	364	2 602	5 825	715	5 110	
	1978	3 886	477	3 409	7 717	948	6 769	
I_{3-1} 41860 GJ/ Jahr-year 200 Tage-days 1 600 h	1973	440	47	393				I_{3-1} 1973 41860 GJ/ 1976 an-anno 1977 1978 200 jours-giorni 1 600 h
	1976	1 176	126	1 050				
	1977	1 758	188	1 570				
	1978	2 153	264	1 889				
I_{3-2} 41860 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	440	47	393				I_{3-2} 1973 41860 GJ/ 1976 an-anno 1977 1978 250 jours-giorni 4 000 h
	1976	1 176	126	1 050				
	1977	1 758	188	1 570				
	1978	2 153	264	1 889				
I_{4-1} 418600 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	420	45	375				I_{4-1} 1973 418600 GJ/ 1976 an-anno 1977 1978 250 jours-giorni 4 000 h
	1976	1 155	124	1 031				
	1977	1 726	185	1 541				
	1978	2 108	259	1 849				
I_{4-2} 418600 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	420	45	375				I_{4-2} 1973 418600 GJ/ 1976 an-anno 1977 1978 330 jours-giorni 8 000 h
	1976	1 155	124	1 031				
	1977	1 726	185	1 541				
	1978	2 108	259	1 849				
I_5 4186000 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	412	44	368				I_5 1973 4186000 GJ/ 1976 an-anno 1977 1978 330 jours-giorni 8 000 h
	1976	1 125	121	1 004				
	1977	1 681	180	1 501				
	1978	2 038	250	1 788				
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

* Gaz naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

NEDERLAND — HFL/GJ — DANMARK — DKR/GJ

		ROTTERDAM *			KØBENHAVN +			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	9,63	0,37	9,26	30,28	3,94	26,34	1973
	1976	13,21	0,52	12,69	52,72	4,47	48,25	1976
	1977	13,21	0,52	12,69	72,04	9,40	62,64	1977
	1978	13,58	0,53	13,05	71,94	10,97	60,97	1978
D_1 8,37 GJ/ an-anno								
D_2 16,74 GJ/ Jahr-year	1973	7,97	0,31	7,66	24,32	3,18	21,14	1973
	1976	10,60	0,42	10,18	43,98	3,73	40,25	1976
	1977	10,60	0,42	10,18	59,19	7,72	51,47	1977
	1978	10,79	0,43	10,36	66,87	10,20	56,67	1978
D_2 16,74 GJ/ an-anno								
D_3 83,7 GJ/ Jahr-year	1973	4,05	0,16	3,89	16,72	2,17	14,55	1973
	1976	6,97	0,28	6,69	33,78	2,87	30,91	1976
	1977	6,97	0,28	6,69	43,32	5,65	37,67	1977
	1978	7,66	0,30	7,36	46,32	7,07	39,25	1978
D_3 83,7 GJ/ an-anno								
D_{3b} 125,6 GJ/ Jahr-year	1973	3,48	0,13	3,35	15,34	2,01	13,33	1973
	1976	6,62	0,26	6,36	32,07	2,72	29,35	1976
	1977	6,62	0,26	6,36	41,35	5,39	35,96	1977
	1978	7,38	0,29	7,09	45,15	6,90	38,25	1978
D_{3b} 125,6 GJ/ an-anno								
D_4 1047 GJ/ Jahr-year	1973	2,50	0,10	2,40	12,82	1,67	11,15	1973
	1976	6,01	0,24	5,77	29,09	2,46	26,63	1976
	1977	6,01	0,24	5,77	37,89	4,94	32,95	1977
	1978	6,96	0,28	6,68	43,17	6,58	36,59	1978
D_4 1047 GJ/ an-anno								
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

* Gas naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

NEDERLAND — HFL/GJ — DANMARK — DKR/GJ

	Januar	ROTTERDAM * Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	KØBENHAVN + Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/ Jahr-year	1973	2,70	0,10	2,60	22,86	2,99	19,87	I_1 1973 1976 1977 1978 418,6 GJ/ an-anno
	1976	6,14	0,24	5,90	45,90	3,89	42,01	
	1977	6,14	0,24	5,90	51,11	6,67	44,44	
	1978	6,98	0,27	6,71	54,20	8,27	45,93	
I_2 4186 GJ/ Jahr-year 200 Tage-days	1973	2,40	0,09	2,31	17,15	2,25	14,90	I_2 1973 1976 1977 1978 4186 GJ/ an-anno
	1976	5,92	0,23	5,69	38,31	3,25	35,06	
	1977	5,94	0,23	5,71	42,45	5,54	36,91	
	1978	6,83	0,26	6,57	45,18	6,89	38,29	
I_{3-1} 41860 GJ/ Jahr-year 200 Tage-days 1 600 h	1973	2,41	0,09	2,32				I_{3-1} 1973 1976 1977 1978 41860 GJ/ an-anno 200 jours-giorni 1 600 h
	1976	5,27	0,20	5,07				
	1977	5,77	0,22	5,55				
	1978	6,12	0,24	5,88				
I_{3-2} 41860 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	2,41	0,09	2,32				I_{3-2} 1973 1976 1977 1978 41860 GJ/ an-anno 250 jours-giorni 4 000 h
	1976	5,27	0,20	5,07				
	1977	5,77	0,22	5,55				
	1978	6,12	0,24	5,88				
I_{4-1} 418600 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	2,25	0,09	2,16				I_{4-1} 1973 1976 1977 1978 418600 GJ/ an-anno 250 jours-giorni 4 000 h
	1976	5,10	0,20	4,90				
	1977	5,61	0,22	5,39				
	1978	5,89	0,25	5,64				
I_{4-2} 418600 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	2,25	0,09	2,16				I_{4-2} 1973 1976 1977 1978 418600 GJ/ an-anno 330 jours-giorni 8 000 h
	1976	5,10	0,20	4,90				
	1977	5,61	0,22	5,39				
	1978	5,89	0,25	5,64				
I_5 4186000 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	1,78	0,07	1,71				I_5 1973 1976 1977 1978 4186000 GJ/ an-anno 330 jours-giorni 8 000 h
	1976	4,20	0,16	4,04				
	1977	5,51	0,21	5,30				
	1978	5,73	0,22	5,51				
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

* Gaz naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

BELGIQUE

BFR/GJ

		ANTWERPEN *			BRUXELLES *			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	263	15	249	263	15	248	1973 D_1
	1976	354	20	334	351	20	331	1976 8,37 GJ/ an-anno
	1977	378	21	357	374	21	353	1977
	1978	390	22	368	386	22	364	1978
D_2 16,74 GJ/ Jahr-year	1973	245	14	231	245	14	231	1973 D_2
	1976	330	19	311	317	18	299	1976 16,74 GJ/ an-anno
	1977	352	20	332	341	19	322	1977
	1978	364	21	343	352	20	332	1978
D_3 83,7 GJ/ Jahr-year	1973	121	7	114	121	7	114	1973 D_3
	1976	155	9	146	155	9	146	1976 83,7 GJ/ an-anno
	1977	168	10	158	167	9	158	1977
	1978	173	10	163	173	10	163	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	103	6	97	103	6	97	1973 D_{3b}
	1976	141	8	133	141	8	133	1976 125,6 GJ/ an-anno
	1977	157	9	148	157	9	148	1977
	1978	161	9	152	161	9	152	1978
D_4 1047 GJ/ Jahr-year	1973	71	4	67	71	4	67	1973 D_4
	1976	111	6	105	111	6	105	1976 1047 GJ/ an-anno
	1977	122	7	115	122	7	115	1977
	1978	125	7	118	125	7	118	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

BELGIQUE — BFR/GJ — LUXEMBOURG — LFR/GJ

	Januar	LIEGE * Verkaufspreis Selling price	LIEGE * Steuern Taxes	LIEGE * Preis ohne Steuern Price without taxes	LUXEMBOURG * Verkaufspreis Selling price	LUXEMBOURG * Steuern Taxes	LUXEMBOURG * Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	259	15	244	250	12	238	D_1 8,37 GJ/ an-anno
	1976	348	20	328	347	17	330	
	1977	371	21	350	356	17	339	
	1978	383	22	361	385	18	367	
D_2 16,74 GJ/ Jahr-year	1973	241	14	227	224	11	213	D_2 16,74 GJ/ an-anno
	1976	317	18	299	294	14	280	
	1977	338	19	319	306	15	291	
	1978	350	20	330	332	16	316	
D_3 83,7 GJ/ Jahr-year	1973	121	7	114	64	3	61	D_3 83,7 GJ/ an-anno
	1976	155	9	146	118	6	112	
	1977	168	10	158	120	6	114	
	1978	173	10	163	138	7	131	
D_{3b} 125,6 GJ/ Jahr-year	1973	103	6	97	59	3	56	D_{3b} 125,6 GJ/ an-anno
	1976	141	8	133	111	5	106	
	1977	157	9	148	113	5	108	
	1978	161	9	152	131	6	125	
D_4 1047 GJ/ Jahr-year	1973	71	4	67	50	2	48	D_4 1047 GJ/ an-anno
	1976	111	6	105	100	5	95	
	1977	122	7	115	101	5	96	
	1978	125	7	118	117	6	111	
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gas naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

BELGIQUE — BFR/GJ — LUXEMBOURG — LFR/GJ

	Januar	ANTWERPEN, BRUXELLES, LIEGE *			LUXEMBOURG *			Janvier
		Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	
I_1 418,6 GJ/ Jahr-year	1973	95,2	5,4	89,8	55	3	52	I_1 1973 418,6 GJ/ an-anno
	1976	144,3	8,2	136,1	104	5	99	1976
	1977	151,9	8,6	143,3	106	5	101	1977
	1978	151,2	8,6	142,6	122	6	116	1978
I_2 4186 GJ/ Jahr-year 200 Tage-days	1973	61,1	3,5	57,6	42	2	40	I_2 1973 4186 GJ/ an-anno
	1976	105,8	6,0	99,8	81	4	77	1976
	1977	115,8	6,6	109,2	82	4	78	1977
	1978	118,5	6,7	111,8	93	4	89	1978
I_{3-1} 41860 GJ/ Jahr-year 200 Tage-days 1 600 h	1973	56,7	3,2	53,5	36	2	34	I_{3-1} 1973 41860 GJ/ an-anno 1978 200 jours-giorni 1 600 h
	1976	84,3	4,8	79,5	72	3	69	1976
	1977	105,4	6,0	99,4	74	4	70	1977
	1978	115,2	6,5	108,7	85	4	81	
I_{3-2} 41860 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	28,6	1,6	27,0	33	2	31	I_{3-2} 1973 41860 GJ/ an-anno 1978 250 jours-giorni 4 000 h
	1976	78,0	4,4	73,6	66	3	63	1976
	1977	83,5	4,7	78,8	67	3	64	1977
	1978	92,5	5,2	87,3	78	4	74	
I_{4-1} 418600 GJ/ Jahr-year 250 Tage-days 4 000 h	1973	28,6	1,6	27,0				I_{4-1} 1973 418600 GJ/ an-anno 1978 250 jours-giorni 4 000 h
	1976	78,0	4,4	73,6				1976
	1977	83,5	4,7	78,8				1977
	1978	92,5	5,2	87,3				
I_{4-2} 418600 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	23,9	1,4	22,5				I_{4-2} 1973 418600 GJ/ an-anno 1978 330 jours-giorni 8 000 h
	1976	63,8	3,6	60,2				1976
	1977	76,2	4,3	71,9				1977
	1978	85,1	4,8	80,3				
I_5 4186000 GJ/ Jahr-year 330 Tage-days 8 000 h	1973	21,3	1,2	20,1				I_5 1973 4186000 GJ/ an-anno 1978 330 jours-giorni 8 000 h
	1976	57,8	3,3	54,5				1976
	1977	73,9	4,2	69,7				1977
	1978	82,6	4,7	77,9				
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

UNITED KINGDOM

UKL/GJ

		LONDON *			GLASGOW *			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	1,82	-	1,82	2,13	-	2,13	1973
	1976	2,46	-	2,46	2,60	-	2,60	1976
	1977	2,63	-	2,63	2,68	-	2,68	1977
	1978	2,79	-	2,79	2,79	-	2,79	1978
D_2 16,74 GJ/ Jahr-year	1973	1,58	-	1,58	1,84	-	1,84	1973
	1976	2,17	-	2,17	2,34	-	2,34	1976
	1977	2,36	-	2,36	2,53	-	2,53	1977
	1978	2,65	-	2,65	2,65	-	2,65	1978
D_{2b} 33,49 GJ/ Jahr-year	1973	1,27	-	1,27	1,39	-	1,39	1973
	1976	1,82	-	1,82	1,82	-	1,82	1976
	1977	2,01	-	2,01	2,01	-	2,01	1977
	1978	2,17	-	2,17	2,17	-	2,17	1978
D_3 83,7 GJ/ Jahr-year	1973	0,93	-	0,93	0,98	-	0,98	1973
	1976	1,43	-	1,43	1,43	-	1,43	1976
	1977	1,60	-	1,60	1,60	-	1,60	1977
	1978	1,74	-	1,74	1,74	-	1,74	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	0,84	-	0,84	0,86	-	0,86	1973
	1976	1,34	-	1,34	1,34	-	1,34	1976
	1977	1,53	-	1,53	1,53	-	1,53	1977
	1978	1,65	-	1,65	1,65	-	1,65	1978
D_4 1047 GJ/ Jahr-year	1973	0,69	-	0,69	0,88	-	0,88	1973
	1976	1,27	-	1,27	1,27	-	1,27	1976
	1977	1,46	-	1,46	1,46	-	1,46	1977
	1978	1,72	-	1,72	1,72	-	1,72	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

D_1 8,37 GJ/ an-anno
D_2 16,74 GJ/ an-anno
D_{2b} 33,49 GJ/ an-anno
D_3 83,7 GJ/ an-anno
D_{3b} 125,6 GJ/ an-anno
D_4 1047 GJ/ an-anno

* Naturgas
Natural gas

* Gas naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

UNITED KINGDOM

UKL/GJ

		BIRMINGHAM *			LEEDS *			
	Januar	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/ Jahr-year	1973	1,39	-	1,39	1,70	-	1,70	D_1 1973 8,37 GJ/ an-anno
	1976	1,93	-	1,93	2,13	-	2,13	1976
	1977	2,10	-	2,10	2,29	-	2,29	1977
	1978	2,27	-	2,27	2,46	-	2,46	1978
D_2 16,74 GJ/ Jahr-year	1973	1,24	-	1,24	1,34	-	1,34	D_2 1973 16,74 GJ/ an-anno
	1976	1,79	-	1,79	1,89	-	1,89	1976
	1977	1,96	-	1,96	2,05	-	2,05	1977
	1978	2,20	-	2,20	2,29	-	2,29	1978
D_{2b} 33,49 GJ/ Jahr-year	1973	1,00	-	1,00	1,05	-	1,05	D_{2b} 1973 33,49 GJ/ an-anno
	1976	1,48	-	1,48	1,53	-	1,53	1976
	1977	1,65	-	1,65	1,70	-	1,70	1977
	1978	1,89	-	1,89	1,96	-	1,96	1978
D_3 83,7 GJ/ Jahr-year	1973	0,79	-	0,79	0,84	-	0,84	D_3 1973 83,7 GJ/ an-anno
	1976	1,27	-	1,27	1,31	-	1,31	1976
	1977	1,43	-	1,43	1,48	-	1,48	1977
	1978	1,62	-	1,62	1,65	-	1,65	1978
D_{3b} 125,6 GJ/ Jahr-year	1973	0,74	-	0,74	0,79	-	0,79	D_{3b} 1973 125,6 GJ/ an-anno
	1976	1,22	-	1,22	1,27	-	1,27	1976
	1977	1,39	-	1,39	1,43	-	1,43	1977
	1978	1,58	-	1,58	1,60	-	1,60	1978
D_4 1047 GJ/ Jahr-year	1973	0,69	-	0,69	0,72	-	0,72	D_4 1973 1047 GJ/ an-anno
	1976	1,27	-	1,27	1,27	-	1,27	1976
	1977	1,46	-	1,46	1,46	-	1,46	1977
	1978	1,70	-	1,70	1,70	-	1,70	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR HAUSHALTE
GAS PRICES FOR HOUSEHOLDS

PRIX DU GAZ POUR USAGES DOMESTIQUES
PREZZI DEL GAS PER USI DOMESTICI

UNITED KINGDOM — UKL/GJ — IRELAND — IRL/GJ

	Januar	CARDIFF * Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	DUBLIN + Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
D_1 8,37 GJ/Jahr-year	1973	2,22	-	2,22	2,15	0,14	2,01	D_1 8,37 GJ/an-anno
	1976	2,60	-	2,60	3,22	-	3,22	
	1977	2,68	-	2,68	4,37	-	4,37	
	1978	2,79	-	2,79	4,37	-	4,37	
D_2 16,74 GJ/Jahr-year	1973	1,72	-	1,72	2,03	0,13	1,90	D_2 16,74 GJ/an-anno
	1976	2,34	-	2,34	3,12	-	3,12	
	1977	2,53	-	2,53	4,27	-	4,27	
	1978	2,65	-	2,65	4,27	-	4,27	
D_{2b} 33,49 GJ/Jahr-year	1973	1,31	-	1,31				D_{2b} 33,49 GJ/an-anno
	1976	1,82	-	1,82				
	1977	2,01	-	2,01				
	1978	2,17	-	2,17				
D_3 83,7 GJ/Jahr-year	1973	0,98	-	0,98	1,08	0,07	1,01	D_3 83,7 GJ/an-anno
	1976	1,43	-	1,43	2,40	-	2,40	
	1977	1,60	-	1,60	3,34	-	3,34	
	1978	1,74	-	1,74	3,34	-	3,34	
D_{3b} 125,6 GJ/Jahr-year	1973	0,86	-	0,86	1,00	0,06	0,94	D_{3b} 125,6 GJ/an-anno
	1976	1,34	-	1,34	2,34	-	2,34	
	1977	1,53	-	1,53	3,26	-	3,26	
	1978	1,65	-	1,65	3,26	-	3,26	
D_4 1047 GJ/Jahr-year	1973	0,69	-	0,69				D_4 1047 GJ/an-anno
	1976	1,27	-	1,27				
	1977	1,46	-	1,46				
	1978	1,72	-	1,72				
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas
\+ Ortsgas
Gasworks gas

* Gaz naturel
Gas naturale
\+ Gaz d'usines
Gas di officina

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

UNITED KINGDOM

UKL/GJ

	Januar	LONDON * Verkaufspreis Selling price	LONDON * Steuern Taxes	LONDON * Preis ohne Steuern Price without taxes	GLASGOW * Verkaufspreis Selling price	GLASGOW * Steuern Taxes	GLASGOW * Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/Jahr-year	1973	1,02	-	1,02	1,23	-	1,23	I_1 1973 418,6 GJ/an-anno
	1976	1,46	-	1,46	1,47	-	1,47	1976
	1977	1,65	-	1,65	1,65	-	1,65	1977
	1978	1,76	-	1,76	1,76	-	1,76	1978
I_2 4186 GJ/Jahr-year 200 Tage-days	1973	0,77	-	0,77	0,95	-	0,95	I_2 1973 4186 GJ/an-anno
	1976	1,41	-	1,41	1,41	-	1,41	1976
	1977	1,59	-	1,59	1,59	-	1,59	1977
	1978	1,70	-	1,70	1,70	-	1,70	1978
I_{3-1} 41860 GJ/Jahr-year 200 Tage-days 1 600 h	1973	0,67	-	0,67	0,67	-	0,67	I_{3-1} 1973 41860 GJ/an-anno 200 jours-giorni 1 600 h
	1976	1,39	-	1,39	1,39	-	1,39	1976
	1977	1,58	-	1,58	1,58	-	1,58	1977
	1978	1,65	-	1,65	1,65	-	1,65	1978
I_{3-2} 41860 GJ/Jahr-year 250 Tage-days 4 000 h	1973	0,67	-	0,67	0,67	-	0,67	I_{3-2} 1973 41860 GJ/an-anno 250 jours-giorni 4 000 h
	1976	1,39	-	1,39	1,39	-	1,39	1976
	1977	1,58	-	1,58	1,58	-	1,58	1977
	1978	1,65	-	1,65	1,65	-	1,65	1978
I_{4-1} 418600 GJ/Jahr-year 250 Tage-days 4 000 h	1973	0,62	-	0,62	0,62	-	0,62	I_{4-1} 1973 418600 GJ/an-anno 250 jours-giorni 4 000 h
	1976	1,29	-	1,29	1,29	-	1,29	1976
	1977	1,39	-	1,39	1,39	-	1,39	1977
	1978	1,43	-	1,43	1,43	-	1,43	1978
I_{4-2} 418600 GJ/Jahr-year 330 Tage-days 8 000 h	1973	0,62	-	0,62	0,62	-	0,62	I_{4-2} 1973 418600 GJ/an-anno 330 jours-giorni 8 000 h
	1976	1,29	-	1,29	1,29	-	1,29	1976
	1977	1,39	-	1,39	1,39	-	1,39	1977
	1978	1,43	-	1,43	1,43	-	1,43	1978
I_5 4186000 GJ/Jahr-year 330 Tage-days 8 000 h	1973	0,27	-	0,27	0,27	-	0,27	I_5 1973 4186000 GJ/an-anno 330 jours-giorni 8 000 h
	1976	0,98	-	0,98	0,98	-	0,98	1976
	1977	1,17	-	1,17	1,17	-	1,17	1977
	1978	1,22	-	1,22	1,22	-	1,22	1978
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

* Gaz naturel
Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

UNITED KINGDOM

UKL/GJ

	Januar	BIRMINGHAM * Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	LEEDS * Verkaufspreis Selling price	Steuern Taxes	Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/Jahr-year	1973	0,97	-	0,97	0,82	-	0,82	I_1 418,6 GJ/an-anno
	1976	1,43	-	1,43	1,45	-	1,45	
	1977	1,61	-	1,61	1,63	-	1,63	
	1978	1,72	-	1,72	1,73	-	1,73	
I_2 4186 GJ/Jahr-year 200 Tage-days	1973	0,88	-	0,88	0,74	-	0,74	I_2 4186 GJ/an-anno
	1976	1,40	-	1,40	1,41	-	1,41	
	1977	1,59	-	1,59	1,59	-	1,59	
	1978	1,69	-	1,69	1,70	-	1,70	
I_{3-1} 41860 GJ/Jahr-year 200 Tage-days 1 600 h	1973	0,67	-	0,67	0,67	-	0,67	I_{3-1} 41860 GJ/an-anno 200 jours-giorni 1 600 h
	1976	1,39	-	1,39	1,39	-	1,39	
	1977	1,58	-	1,58	1,58	-	1,58	
	1978	1,65	-	1,65	1,65	-	1,65	
I_{3-2} 41860 GJ/Jahr-year 250 Tage-days 4 000 h	1973	0,67	-	0,67	0,67	-	0,67	I_{3-2} 41860 GJ/an-anno 250 jours-giorni 4 000 h
	1976	1,39	-	1,39	1,39	-	1,39	
	1977	1,58	-	1,58	1,58	-	1,58	
	1978	1,65	-	1,65	1,65	-	1,65	
I_{4-1} 418600 GJ/Jahr-year 250 Tage-days 4 000 h	1973	0,62	-	0,62	0,62	-	0,62	I_{4-1} 418600 GJ/an-anno 250 jours-giorni 4 000 h
	1976	1,29	-	1,29	1,29	-	1,29	
	1977	1,39	-	1,39	1,39	-	1,39	
	1978	1,43	-	1,43	1,43	-	1,43	
I_{4-2} 418600 GJ/Jahr-year 330 Tage-days 8 000 h	1973	0,62	-	0,62	0,62	-	0,62	I_{4-2} 418600 GJ/an-anno 330 jours-giorni 8 000 h
	1976	1,29	-	1,29	1,29	-	1,29	
	1977	1,39	-	1,39	1,39	-	1,39	
	1978	1,43	-	1,43	1,43	-	1,43	
I_5 4186000 GJ/Jahr-year 330 Tage-days 8 000 h	1973	0,27	-	0,27	0,27	-	0,27	I_5 4186000 GJ/an-anno 330 jours-giorni 8 000 h
	1976	0,98	-	0,98	0,98	-	0,98	
	1977	1,17	-	1,17	1,17	-	1,17	
	1978	1,22	-	1,22	1,22	-	1,22	
	January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

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Gas naturale

GASPREISE FÜR DIE INDUSTRIE
GAS PRICES FOR INDUSTRY

PRIX DU GAZ POUR USAGES INDUSTRIELS
PREZZI DEL GAS PER USI INDUSTRIALI

UNITED KINGDOM — UKL/GJ — IRELAND — IRL/GJ

Januar	CARDIFF * Verkaufspreis Selling price	CARDIFF * Steuern Taxes	CARDIFF * Preis ohne Steuern Price without taxes	DUBLIN + Verkaufspreis Selling price	DUBLIN + Steuern Taxes	DUBLIN + Preis ohne Steuern Price without taxes	Janvier
I_1 418,6 GJ/Jahr-year							**I_1** 418,6 GJ/an-anno
1973	0,97	-	0,97	:	:	:	1973
1976	1,47	-	1,47	2,15	-	2,15	1976
1977	1,65	-	1,65	3,23	-	3,23	1977
1978	1,76	-	1,76	3,23	-	3,23	1978
I_2 4186 GJ/Jahr-year 200 Tage-days							**I_2** 4186 GJ/an-anno
1973	0,77	-	0,77	:	:	:	1973
1976	1,41	-	1,41	2,03	-	2,03	1976
1977	1,59	-	1,59	3,11	-	3,11	1977
1978	1,70	-	1,70	3,11	-	3,11	1978
I_{3-1} 41860 GJ/Jahr-year 200 Tage-days 1 600 h							**I_{3-1}** 41860 GJ/an-anno 200 jours-giorni 1 600 h
1973	0,67	-	0,67				1973
1976	1,39	-	1,39				1976
1977	1,58	-	1,58				1977
1978	1,65	-	1,65				1978
I_{3-2} 41860 GJ/Jahr-year 250 Tage-days 4 000 h							**I_{3-2}** 41860 GJ/an-anno 250 jours-giorni 4 000 h
1973	0,67	-	0,67				1973
1976	1,39	-	1,39				1976
1977	1,58	-	1,58				1977
1978	1,65	-	1,65				1978
I_{4-1} 418600 GJ/Jahr-year 250 Tage-days 4 000 h							**I_{4-1}** 418600 GJ/an-anno 250 jours-giorni 4 000 h
1973	0,62	-	0,62				1973
1976	1,29	-	1,29				1976
1977	1,39	-	1,39				1977
1978	1,43	-	1,43				1978
I_{4-2} 418600 GJ/Jahr-year 330 Tage-days 8 000 h							**I_{4-2}** 418600 GJ/an-anno 330 jours-giorni 8 000 h
1973	0,62	-	0,62				1973
1976	1,29	-	1,29				1976
1977	1,39	-	1,39				1977
1978	1,43	-	1,43				1978
I_5 4186000 GJ/Jahr-year 330 Tage-days 8 000 h							**I_5** 4186000 GJ/an-anno 330 jours-giorni 8 000 h
1973	0,27	-	0,27				1973
1976	0,98	-	0,98				1976
1977	1,17	-	1,17				1977
1978	1,22	-	1,22				1978
January	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Prix de vente Prezzi di vendita	Taxes Imposte	Prix hors taxes Prezzi imposte escluse	Gennaio

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

* Gaz naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

TABELLE FÜR DIE UMRECHNUNG DES KAUFKRAFTSTANDARDS (KKS)

CONVERSION TABLE FOR THE PURCHASING POWER STANDARD (PPS)

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

TABELLA DI CONVERSIONE DELLA STANDARD DI POTERE D'AQUISTO (SPA)

	1973	1974	1975	1976	1977	1978
1 KKS =		1 PPS =			1 SPA =	
B.R. Deutschland DM	3,87	3,66	3,42	3,24	3,10	2,97
France FF	5,80	5,81	5,75	5,78	5,81	5,96
Italia 100 LIT	6,11	6,58	6,70	7,33	7,95	8,28
Nederland HFL	3,51	3,42	3,36	3,34	3,29	3,20
Belgique BFR	50,48	50,21	50,23	49,40	48,60	47,24
Luxembourg LFR	49,34	47,91	47,81	48,23	47,22	45,45
United Kingdom UKL	0,400	0,421	0,466	0,490	0,511	0,516
Ireland IRL	0,412	0,422	0,458	0,491	0,516	0,521
Danmark DKR	8,54	8,61	8,47	8,41	8,48	8,72
Umrechnung der nationalen Wahrung in KKS / Conversion of national currencies to PPS			Conversion des monnaies nationales en SPA / Conversione delle monete nazionali in SPA			
B.R. Deutschland 1 DM =	0,2584	0,2732	0,2924	0,3086	0,3226	0,3367
France 1 FF =	0,1724	0,1721	0,1739	0,1730	0,1721	0,1678
Italia 100 LIT =	0,1637	0,1520	0,1493	0,1364	0,1258	0,1208
Nederland 1 HFL =	0,2849	0,2924	0,2976	0,2994	0,3040	0,3125
Belgique 1 BFR =	0,0198	0,0199	0,0199	0,0202	0,0206	0,0212
Luxembourg 1 LFR =	0,0203	0,0209	0,0209	0,0207	0,0212	0,0220
United Kingdom 1 UKL =	2,5000	2,3753	2,1459	2,0408	1,9569	1,9380
Ireland 1 IRL =	2,4272	2,3697	2,1834	2,0367	1,9380	1,9194
Danmark 1 DKR =	0,1171	0,1161	0,1181	0,1189	0,1179	0,1147
Preisindices des BIP / GDP price indices				Indices de prix du PIB / Indici dei prezzi del PIL		
B.R. Deutschland	100	106,9	114,1	117,9	122,1	125,2
France	100	111,1	125,8	138,3	150,5	164,8
Italia	100	118,3	138,6	163,9	193,8	216,1
Nederland	100	108,7	121,1	131,3	141,0	146,6
Belgique	100	112,1	126,2	135,6	144,9	157,9
Luxembourg	100	116,2	118,6	127,3	135,0	139,0
United Kingdom	100	115,4	146,9	168,8	191,3	206,6
Ireland	100	107,0	132,3	157,6	178,9	193,3
Danmark	100	110,4	124,2	134,9	147,0	161,7

GASPREISE FÜR HAUSHALTE

GAS PRICES FOR HOUSEHOLDS

Kaufkraftstandard/GJ

Purchasing Power Standard/GJ

Verkaufspreis Selling price		Düsseldorf*	Paris *	Milano +	Rotterdam*	Bruxelles*
D_1	1973	4,99	5,17	4,52	2,74	5,21
8,37 GJ/Jahr GJ/year	1976	9,00	7,40	5,68	3,96	7,11
	1977	9,41	7,87	6,72	4,02	7,70
	1978	9,91	8,17	8,09	4,24	8,17
D_2	1973	4,14	4,38	4,20	2,27	4,85
16,74 GJ/Jahr GJ/year	1976	6,83	6,24	4,85	3,17	6,42
	1977	7,14	6,63	6,04	3,22	7,02
	1978	7,52	6,88	7,45	3,37	7,45
D_3	1973	2,09	2,62	2,68	1,15	2,40
83,7 GJ/Jahr GJ/year	1976	4,37	3,85	3,42	2,09	3,14
	1977	4,56	4,15	4,80	2,12	3,44
	1978	4,81	4,31	6,28	2,39	3,66
D_{3b}	1973	1,92	2,18	2,61	0,99	2,04
125,6 GJ/Jahr GJ/year	1976	3,90	3,23	3,38	1,98	2,85
	1977	4,07	3,59	4,76	2,01	3,23
	1978	4,29	3,72	6,24	2,31	3,41
D_4	1973	1,56	1,38	1,92	0,71	1,41
1047 GJ/Jahr GJ/year	1976	3,27	2,86	3,13	1,80	2,25
	1977	3,42	2,85	4,55	1,83	2,51
	1978	3,60	2,95	6,03	2,15	2,65

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

PRIX DU GAZ POUR USAGES DOMESTIQUES

PREZZI DEL GAS PER USI DOMESTICI

Standard de Pouvoir d'Achat/GJ
Standard Potere d'Acquisto/GJ

Luxembourg *	London *	Dublin +	Køben havn +	Prix de vente Prezzi di vendita			
							D_1
5,07	4,55	5,22	3,54	1973			
7,19	5,02	6,56	6,27	1976	8,37	GJ/an GJ/anno	
7,54	5,15	8,47	8,50	1977			
8,47	5,41	8,39	8,25	1978			
							D_2
4,54	3,95	4,93	2,85	1973			
6,10	4,43	6,35	5,23	1976	16,74	GJ/an GJ/anno	
6,48	4,62	8,28	6,98	1977			
7,30	5,14	8,20	7,67	1978			
							D_3
1,30	2,33	2,62	1,95	1973			
2,45	2,92	4,89	4,02	1976	83,7	GJ/an GJ/anno	
2,54	3,13	6,47	5,11	1977			
3,04	3,37	6,41	5,31	1978			
							D_{3b}
1,20	2,10	2,43	1,80	1973			
2,30	2,73	4,77	3,81	1976	125,6	GJ/an GJ/anno	
2,39	2,99	6,32	4,88	1977			
2,88	3,20	6,26	5,18	1978			
							D_4
1,01	1,73		1,51	1973			
2,07	2,59		3,46	1976	1047	GJ/an GJ/anno	
2,14	2,86		4,47	1977			
2,57	3,33		4,95	1978			

* Gaz naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR HAUSHALTE

GAS PRICES FOR HOUSEHOLDS

Kaufkraftstandard/GJ

Purchasing Power Standard/GJ

Preis ohne Steuern Price without tax		Düsseldorf *	Paris *	Milano +	Rotterdam *	Bruxelles *
D_1	1973	4,49	4,40	4,23	2,64	4,91
8,37 GJ/Jahr GJ/year	1976	8,11	6,29	5,33	3,80	6,70
	1977	8,47	6,69	6,34	3,86	7,26
	1978	8,85	6,95	6,94	4,08	7,71
D_2	1973	3,73	3,72	3,93	2,18	4,58
16,74 GJ/Jahr GJ/year	1976	6,15	5,31	4,55	3,05	6,05
	1977	6,43	5,64	5,69	3,09	6,63
	1978	6,71	5,85	6,33	3,24	7,03
D_3	1973	1,88	2,22	2,50	1,11	2,26
83,7 GJ/Jahr GJ/year	1976	3,94	3,27	3,21	2,00	2,96
	1977	4,11	3,53	4,53	2,03	3,25
	1978	4,29	3,66	5,22	2,30	3,45
D_{3b}	1973	1,73	1,86	2,43	0,95	1,92
125,6 GJ/Jahr GJ/year	1976	3,51	2,75	3,16	1,90	2,69
	1977	3,67	3,05	4,49	1,93	3,05
	1978	3,83	3,16	5,19	2,22	3,22
D_4	1973	1,41	1,17	1,78	0,68	1,33
1047 GJ/Jahr GJ/year	1976	2,95	2,43	2,93	1,73	2,13
	1977	3,08	2,42	4,29	1,75	2,37
	1978	3,22	2,51	4,99	2,07	2,50

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

PRIX DU GAZ POUR USAGES DOMESTIQUES

PREZZI DEL GAS PER USI DOMESTICI

Standard de Pouvoir d'Achat/GJ
Standard Potere d'Acquisto/GJ

Luxembourg *	London *	Dublin +	København +	Prix hors taxes Prezzi imposta escluse		
						D_1
4,82	4,55	4,88	3,08	1973		
6,84	5,02	6,56	5,74	1976	8,37 GJ/an GJ/anno	
7,18	5,15	8,47	7,39	1977		
8,07	5,41	8,39	6,99	1978		
						D_2
4,32	3,95	4,61	2,48	1973		
5,81	4,43	6,35	4,79	1976	16,74 GJ/an GJ/anno	
6,16	4,62	8,28	6,07	1977		
6,95	5,14	8,20	6,50	1978		
						D_3
1,24	2,33	2,45	1,70	1973		
2,32	2,92	4,89	3,68	1976	83,7 GJ/an GJ/anno	
2,41	3,13	6,47	4,44	1977		
2,88	3,37	6,41	4,50	1978		
						D_{3b}
1,13	2,10	2,28	1,56	1973		
2,20	2,73	4,77	3,49	1976	125,6 GJ/an GJ/anno	
2,29	2,99	6,32	4,24	1977		
2,75	3,20	6,26	4,39	1978		
						D_4
0,97	1,73		1,31	1973		
1,97	2,59		3,17	1976	1047 GJ/an GJ/anno	
2,03	2,86		3,89	1977		
2,44	3,33		4,20	1978		

* Gaz naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR HAUSHALTE

GAS PRICES FOR HOUSEHOLDS

Preisbereinigter Kaufkraftstandard/GJ

Deflated Purchasing Power Standard/GJ

Verkaufspreis Selling price		Düsseldorf *	Paris *	Milano +	Rotterdam *	Bruxelles *
D_1	1973	4,99	5,17	4,52	2,74	5,21
8,37 GJ/Jahr GJ/year	1976	6,39	5,33	4,15	2,87	5,13
	1977	6,17	5,24	4,51	2,67	5,11
	1978	6,07	5,09	5,08	2,64	4,83
D_2	1973	4,14	4,38	4,20	2,27	4,85
16,74 GJ/Jahr GJ/year	1976	4,85	4,50	3,55	2,30	4,64
	1977	4,68	4,41	4,05	2,14	4,66
	1978	4,61	4,15	4,67	2,10	4,42
D_3	1973	2,09	2,62	2,68	1,15	2,40
83,7 GJ/Jahr GJ/year	1976	3,10	2,77	2,51	1,51	2,26
	1977	2,99	2,76	3,22	1,41	2,28
	1978	2,95	2,69	3,93	1,49	2,18
D_{3b}	1973	1,92	2,18	2,61	0,99	2,04
125,6 GJ/Jahr GJ/year	1976	2,76	2,33	2,47	1,44	2,06
	1977	2,67	2,39	3,20	1,34	2,14
	1978	2,63	2,32	3,91	1,43	2,02
D_4	1973	1,56	1,38	1,92	0,71	1,41
1047 GJ/Jahr GJ/year	1976	2,32	2,06	2,29	1,30	1,62
	1977	2,24	1,89	3,05	1,21	1,66
	1978	2,21	1,84	3,78	1,34	1,56

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

PRIX DU GAZ POUR USAGES DOMESTIQUES

PREZZI DEL GAS PER USI DOMESTICI

Standard de Pouvoir d'Achat déflaté/GJ

Standard Potere d'Acquisto deflazionato/GJ

Luxembourg *	London *	Dublin +	København +	Prix de vente / Prezzi di vendita		
5,07	4,55	5,22	3,55	1973		D_1
5,53	3,65	4,95	4,58	1976	8,37 GJ/an GJ/anno	
5,35	3,43	5,92	5,74	1977		
5,61	3,38	5,49	5,21	1978		
4,54	3,95	4,93	2,85	1973		D_2
4,68	3,23	4,81	3,82	1976	16,74 GJ/an GJ/anno	
4,60	3,08	5,80	4,72	1977		
4,84	3,20	5,36	4,84	1978		
1,30	2,33	2,62	1,96	1973		D_3
1,88	2,13	3,69	2,93	1976	83,7 GJ/an GJ/anno	
1,80	2,10	4,54	3,45	1977		
2,01	2,10	4,20	3,35	1978		
1,20	2,10	2,43	1,80	1973		D_{3b}
1,76	1,98	3,59	2,78	1976	125,6 GJ/an GJ/anno	
1,70	2,00	4,42	3,29	1977		
1,91	2,00	4,10	3,27	1978		
1,01	1,73		1,50	1973		D_4
1,60	1,88		2,52	1976	1047 GJ/an GJ/anno	
1,52	1,90		3,02	1977		
1,70	2,08		3,13	1978		

* Gaz naturel
Gas naturale

\+ Gaz d'usines
· Gas di officina

GASPREISE FÜR DIE INDUSTRIE

GAS PRICES FOR INDUSTRY

Kaufkraftstandard/GJ

Purchasing Power Standard/GJ

	Verkaufspreis selling price		Düsseldorf *	Paris *	Milano	Rotterdam *	Bruxelles *
I_1	418,6 GJ/Jahr GJ/year	1973	2,73	2,30	3,41	0,77	1,89
		1976	4,42	3,18	4,30	1,84	2,92
		1977	4,62	3,39	5,71	1,87	3,13
		1978	4,87	3,52	6,58 +	2,18	3,20
I_2	4186 GJ/Jahr GJ/year 200 Tage-days	1973	1,28	2,04	2,46	0,68	1,21
		1976	2,42	2,90	4,10	1,77	2,14
		1977	2,61	2,89	4,96	1,81	2,38
		1978	2,91	3,00	5,85 +	2,13	2,51
I_{3-1}	41860 GJ/Jahr GJ/year 200 Tage-days 1600 h	1973	1,12	1,12	0,72	0,69	1,12
		1976	2,27	2,29	1,60	1,58	1,71
		1977	2,44	2,27	2,21	1,75	2,17
		1978	2,72	2,51	2,60 *	1,91	2,44
I_{3-2}	41860 GJ/Jahr GJ/year 250 Tage-days 4000 h	1973	1,07	0,98	0,72	0,69	0,57
		1976	2,15	2,00	1,60	1,58	1,58
		1977	2,32	1,99	2,21	1,75	1,72
		1978	2,60	2,21	2,60 *	1,91	1,96
I_{4-1}	418600 GJ/Jahr GJ/year 250 Tage-days 4000 h	1973	0,80	0,83	0,69	0,64	0,57
		1976	1,98	1,65	1,58	1,53	1,58
		1977	2,18	1,64	2,17	1,71	1,72
		1978	2,39	1,85	2,50 *	1,84	1,96
I_{4-2}	418600 GJ/Jahr GJ/year 330 Tage-days 8000 h	1973	0,76	0,79	0,69	0,64	0,47
		1976	1,87	1,60	1,58	1,53	1,29
		1977	2,08	1,59	2,17	1,71	1,57
		1978	2,28	1,79	2,50 *	1,84	1,80
I_5	4186000 GJ/Jahr GJ/year 330 Tage-days 8000 h	1973		0,72	0,67	0,51	0,42
		1976		1,48	1,53	1,26	1,17
		1977		1,47	2,11	1,67	1,57
		1978		1,72	2,42 *	1,79	1,75

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

PRIX DU GAZ POUR USAGES INDUSTRIELS

PREZZI DEL GAS PER USI INDUSTRIALI

Standard de Pouvoir d'Achat/GJ
Standard Potere d'Acquisto/GJ

Luxembourg *	London *	Dublin +	København +	Prix de vente Prezzi di vendita	
1,11	2,55	:	2,68	1973	I_1
2,16	2,98	4,38	5,46	1976	418,6 GJ/an-anno
2,24	3,23	6,26	6,03	1977	
2,68	3,41	6,20	6,22	1978	
0,85	1,93	:	2,00	1973	I_2
1,68	2,88	4,13	4,56	1976	4186 GJ/an-anno
1,74	3,11	6,03	5,01	1977	200 jours-giorni
2,05	3,29	5,97	5,18	1978	
0,73	1,68			1973	I_{3-1}
1,49	2,84			1976	41860 GJ/an-anno
1,57	3,09			1977	200 jours-giorni
1,87	3,20			1978	1600 h
0,67	1,68			1973	I_{3-2}
1,37	2,84			1976	41860 GJ/an-anno
1,42	3,09			1977	250 jours-giorni
1,72	3,20			1978	4000 h
	1,55			1973	I_{4-1}
	2,63			1976	418600 GJ/an-anno
	2,72			1977	250 jours-giorni
	2,77			1978	4000 h
	1,55			1973	I_{4-2}
	2,63			1976	418600 GJ/an-anno
	2,72			1977	330 jours-giorni
	2,77			1978	8000 h
	0,68			1973	I_5
	2,00			1976	4186000 GJ/an-anno
	2,29			1977	330 jours-giorni
	2,36			1978	8000 h

* Gaz naturel
Gas naturale

\+ Gaz d'usines
Gas di officina

GASPREISE FÜR DIE INDUSTRIE

GAS PRICES FOR INDUSTRY

Kaufkraftstandard/GJ

Purchasing Power Standard/GJ

Preis ohne Steuern Price without tax		Düsseldorf *	Paris *	Milano	Rotterdam *	Bruxelles *
I_1	1973	2,46	1,96	3,02	0,74	1,78
418,6 GJ/Jahr GJ/year	1976	3,98	2,71	3,82	1,77	2,76
	1977	4,16	2,88	5,10	1,79	2,95
	1978	4,34	2,99	5,77 +	2,10	3,02
I_2	1973	1,16	1,73	2,17	0,65	1,14
4186 GJ/Jahr GJ/year	1976	2,18	2,47	3,64	1,70	2,02
	1977	2,35	2,45	4,43	1,74	2,25
200 Tage-days	1978	2,60	2,55	5,13 +	2,05	2,37
I_{3-1}	1973	1,01	0,95	0,64	0,66	1,06
41860 GJ/Jahr GJ/year	1976	2,04	1,94	1,43	1,52	1,61
	1977	2,20	1,93	1,97	1,69	2,05
200 Tage-days 1600 h	1978	2,43	2,13	2,28 *	1,84	2,30
I_{3-2}	1973	0,97	0,83	0,64	0,66	0,53
41860 GJ/Jahr GJ/year	1976	1,94	1,70	1,43	1,52	1,49
	1977	2,09	1,69	1,97	1,69	1,62
250 Tage-days 4000 h	1978	2,32	1,88	2,28 *	1,84	1,85
I_{4-1}	1973	0,72	0,71	0,61	0,62	0,53
418600 GJ/Jahr GJ/year	1976	1,78	1,40	1,41	1,47	1,49
	1977	1,97	1,39	1,94	1,64	1,62
250 Tage-days 4000 h	1978	2,13	1,57	2,23 *	1,76	1,85
I_{4-2}	1973	0,68	0,68	0,61	0,62	0,45
418600 GJ/Jahr GJ/year	1976	1,69	1,36	1,41	1,47	1,22
	1977	1,87	1,35	1,94	1,64	1,48
330 Tage-days 8000 h	1978	2,03	1,52	2,23 *	1,76	1,70
I_5	1973		0,61	0,60	0,49	0,40
4186000 GJ/Jahr GJ/year	1976		1,26	1,37	1,21	1,10
	1977		1,25	1,89	1,61	1,48
330 Tage-days 8000 h	1978		1,46	2,16 *	1,72	1,65

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

PRIX DU GAZ POUR USAGES INDUSTRIELS

PREZZI DEL GAS PER USI INDUSTRIALI

Standard de Pouvoir d'Achat/GJ

Standard Potere d'Acquisto/GJ

Luxembourg*	London *	Dublin +	København +	Prix hors taxes Prezzi imposte escluse	
					I_1
1,05	2,55	:	2,33	1973	
2,05	2,98	4,38	5,00	1976	418,6 GJ/an-anno
2,14	3,23	6,26	5,24	1977	
2,55	3,41	6,20	5,27	1978	
					I_2
0,81	1,93	:	1,74	1973	
					4186 GJ/an-anno
1,60	2,88	4,13	4,17	1976	
1,65	3,11	6,03	4,35	1977	200 jours-giorni
1,96	3,29	5,97	4,39	1978	
					I_{3-1}
0,69	1,68			1973	
					41860 GJ/an-anno
1,43	2,84			1976	
1,48	3,09			1977	200 jours-giorni
1,78	3,20			1978	1600 h
					I_{3-2}
0,63	1,68			1973	
					41860 GJ/an-anno
1,31	2,84			1976	
1,36	3,09			1977	250 jours-giorni
1,63	3,20			1978	4000 h
					I_{4-1}
	1,55			1973	
					418600 GJ/an-anno
	2,63			1976	
	2,72			1977	250 jours-giorni
	2,77			1978	4000 h
					I_{4-2}
	1,55			1973	
					418600 GJ/an-anno
	2,63			1976	
	2,72			1977	330 jours-giorni
	2,77			1978	8000 h
					I_5
	0,68			1973	
					4186000 GJ/an-anno
	2,00			1976	
	2,29			1977	330 jours-giorni
	2,36			1978	8000 h

* Gaz naturel

Gas naturale

\+ Gaz d'usines

Gas di officina

GASPREISE FÜR DIE INDUSTRIE

GAS PRICES FOR INDUSTRY

Preisbereinigter Kaufkraftstandard/GJ

Deflated Purchasing Power Standard/GJ

Verkaufspreis Selling price		Düsseldorf *	Paris *	Milano	Rotterdam *	Bruxelles *
I_1	1973	2,73	2,30	3,41	0,77	1,89
418,6 GJ/Jahr GJ/year	1976	3,14	2,29	3,15	1,33	2,11
	1977	3,03	2,26	3,83	1,24	2,08
	1978	2,98	2,19	4,13 +	1,36	1,90
I_2	1973	1,28	2,04	2,46	0,68	1,21
4186 GJ/Jahr GJ/year	1976	1,72	2,09	3,00	1,28	1,55
200 Tage-days	1977	1,71	1,92	3,33	1,20	1,58
	1978	1,78	1,87	3,67 +	1,33	1,49
I_{3-1}	1973	1,12	1,12	0,72	0,69	1,12
41860 GJ/Jahr GJ/year	1976	1,61	1,65	1,18	1,14	1,23
200 Tage-days 1600 h	1977	1,60	1,51	1,48	1,17	1,44
	1978	1,67	1,56	1,63 *	1,19	1,45
I_{3-2}	1973	1,07	0,98	0,72	0,69	0,57
41860 GJ/Jahr GJ/year	1976	1,53	1,44	1,18	1,14	1,14
250 Tage-days 4000 h	1977	1,52	1,33	1,48	1,17	1,14
	1978	1,59	1,38	1,63 *	1,19	1,16
I_{4-1}	1973	0,80	0,83	0,69	0,64	0,57
418600 GJ/Jahr GJ/year	1976	1,40	1,19	1,15	1,11	1,14
250 Tage-days 4000 h	1977	1,43	1,09	1,46	1,13	1,14
	1978	1,47	1,15	1,57 *	1,15	1,16
I_{4-2}	1973	0,76	0,79	0,69	0,64	0,47
418600 GJ/Jahr GJ/year	1976	1,33	1,15	1,15	1,11	0,93
330 Tage-days 8000 h	1977	1,36	1,06	1,46	1,13	1,04
	1978	1,40	1,12	1,57 *	1,15	1,07
I_5	1973		0,72	0,67	0,51	0,42
4186000 GJ/Jahr GJ/year	1976		1,07	1,12	0,91	0,84
330 Tage-days 8000 h	1977		0,98	1,42	1,11	1,01
	1978		1,07	1,52 *	1,11	1,04

* Naturgas
Natural gas

\+ Ortsgas
Gasworks gas

PRIX DU GAZ POUR USAGES INDUSTRIELS

PREZZI DEL GAS PER USI INDUSTRIALI

Standard de Pouvoir d'Achat déflaté/GJ.

Standard Potere d'Acquisto deflazionato/GJ

Luxembourg *	London *	Dublin +	København +	Prix de vente Prezzi di vendita	
					I_1
1,11	2,55	:	2,68	1973	
1,66	2,15	3,30	3,98	1976	418,6 GJ/an-anno
1,59	2,15	4,39	4,07	1977	
1,78	2,13	4,05	3,93	1978	
					I_2
0,85	1,93	:	2,01	1973	
1,29	2,10	3,13	3,33	1976	4186 GJ/an-anno
1,23	2,08	4,22	3,38	1977	200 jours-giorni.
1,36	2,05	3,91	3,27	1978	
					I_{3-1}
0,73	1,68			1973	
1,15	2,05			1976	41860 GJ/an-anno
1,11	2,08			1977	200 jours-giorni
1,24	2,00			1978	1600 h
					I_{3-2}
0,67	1,68			1973	
1,05	2,05			1976	41860 GJ/an-anno
1,01	2,08			1977	250 jours-giorni
1,14	2,00			1978	4000 h
					I_{4-1}
	1,55			1973	
	1,90			1976	418600 GJ/an-anno
	1,83			1977	250 jours-giorni
	1,73			1978	4000 h
					I_{4-2}
	1,55			1973	
	1,90			1976	418600 GJ/an-anno
	1,83			1977	330 jours-giorni
	1,73			1978	8000 h
					I_5
	0,68			1973	
	1,45			1976	4186000 GJ/an-anno
	1,53			1977	330 jours-giorni
	1,48			1978	8000 h

* Gaz naturel

Gas naturale

\+ Gaz d'usines

Gas di officina

PRESS NOTICES AND PUBLICATIONS 'ENERGY STATISTICS' Edition 1979

MONTHLY STATISTICS

A – Publications (d/e/f)

- Monthly bulletin Coal
- Monthly bulletin Hydrocarbons
- Monthly bulletin Electrical energy

B – Press notice (d/e/f)

- Energy supply aspects of the nuclear power stations (restricted diffusion)

ANNUAL STATISTICS

A – Statistical telegrams (d/e/f) (free of charge)

* – Primary energy production
* – Coal industry activity
* – Oil market activity
* – Natural gas supply economics
* – Electricity supply economics
– Energy economy

B – Publications

- Operations of nuclear power stations (e/f)
- Gas prices 1976–1978 (e/f – d/i)
- Electrical energy prices 1973–1978 (e/f – d/i)
- Energy statistics yearbook (d/e/f/i)

NOTE

Publication dates are given in the monthly publication 'Eurostat news'

NOTES ET PUBLICATIONS "STATISTIQUES DE L'ENERGIE" Edition 1979

STATISTIQUES MENSUELLES

A – Publications (d/e/f)

- Bulletin mensuel Charbon
- Bulletin mensuel Hydrocarbures
- Bulletin mensuel Energie électrique

B – Note rapide (d/e/f)

- Exploitation des centrales nucléaires (diffusion restreinte)

STATISTIQUES ANNUELLES

A – Télégrammes statistiques (d/e/f) (gratuit)

* – La production d'énergie primaire
* – L'activité charbonnière
* – L'activité pétrolière
* – L'économie du gaz naturel
* – L'économie électrique
– L'économie de l'énergie

B – Publications

- Exploitation des centrales nucléaires (e/f)
- Prix du gaz 1976–1978 (e/f – d/i)
- Prix de l'énergie électrique 1973–1978 (e/f – d/i)
- Annuaire des statistiques de l'énergie (d/e/f/i)

NOTA

Le calendrier des publications est indiqué mensuellement dans "Informations de l'Eurostat"

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Gas prices 1976-1978

Luxembourg: Office des publications officielles des Communautés européennes

1979 — 132 p., in separately numbered groups — 21,0 × 29,7 cm

Energy statistics (ruby series)

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