

COMMISSION OF THE EUROPEAN COMMUNITIES

COM(93) 666 final

Brussels, 16 December 1993

REPORT FROM THE COMMISSION

TO THE COUNCIL, THE EUROPEAN PARLIAMENT AND THE ECONOMIC AND SOCIAL COMMITTEE

On the Operation of

DIRECTIVE 90/377/EEC

Transparency of Gas & Electricity Prices
for Industrial End-Users

A Report on the Operation of Council Directive 90/377/EEC

concerning a Community procedure to improve the Transparency of Gas and Electricity Prices
charged to Industrial end-users

Table of Contents

PROLOGUE

1. Introduction
2. Objectives of the Directive

SUMMARY REPORT

3. Implementation
4. Assessment of Experience to date
5. Conclusions on Operation of Directive

EXAMINATION OF THE PUBLISHED DATA

6. Overview
7. Price Changes over Time, and Convergence
8. Price Ratios between Different Categories
9. Price Differentials among Community locations
10. Final Comments on Published Prices

Annex 1: Factors which affect Price Comparisons made in ECU across Member States.

Annex 2: Factors which can contribute to Differences in Observed Prices.

PROLOGUE

1. Introduction.

1.1 The Council on 29th June 1990 adopted Directive 90/377/EEC calling for certain measures to be undertaken regarding prices for gas and electricity charged to industrial end-users. In essence, these measures are as detailed in Para. 2.3 below.

1.2 Article 8 of the Directive requires the Commission to present a summary report once a year on the operation of this Directive to the Council, the European Parliament, and the Economic and Social Committee.

1.3 This first Report is presented in fulfilment of that requirement. The Summary section looks at how implementation of the Directive has progressed, the experience to date including publications arising, and offers conclusions on its operation. To address the interest which clearly exists, a last section has been included to examine, in some detail, price relationships which are evident in the published data.

2. Objectives of the Directive.

2.1 The Directive was adopted in the frame of the development of the Community's Internal Market for Energy (IEM). It provides the legal base to give the Commission access to the necessary information on prices to final consumers, information which is essential to improve the transparency of prices.

2.2 Along with those covering *Transit of Gas* (91/296/EEC) and *Electricity* (90/547/EEC), this Directive represents the first stage in the creation of the IEM. Second and third stages are due to follow, as proposed by the Commission in January 1992. These Directives were the first steps required to establish free and competitive markets for gas and electricity. The Price Transparency Directive in particular is designed to give industrial end-users access to aggregate data on charges imposed by gas and electricity utilities to comprehensive ranges of industrial consumer categories throughout the Community, enabling them to negotiate more effectively their contracts with suppliers.

2.3 Article 1 of the Directive calls on Member States to take steps to ensure that certain information is communicated to the Statistical Office of the European Communities (SOEC) by undertakings which supply gas or electricity to industrial end-users. Three types of information are required, covering:

- a. prices - Article 1 (1)
- b. pricing systems - Article 1 (2)
- c. breakdowns of consumers and consumption volumes - Article 1 (3).

(a) and (b): data on prices, terms of sale, and pricing systems as of 1 January and 1 July each year are to be sent to SOEC under formats and Provisions given in the Annexes to the Directive. This price information is then to be published by the SOEC in an appropriate form, also on a six-monthly basis (each May and November).

(c): breakdowns of consumers and the corresponding volumes sold for each category of consumer (as defined in the Annexes) are to be sent every two years, with 1 January 1991 as the first date for reporting. These breakdowns are required so that SOEC may ensure the representativeness of the end-user categories at national level for each Member State. The Directive does not call for publication of the data supplied under this heading. But they are needed by the SOEC to determine weighted average prices and price indices for Member States and the Community, which will be published.

SUMMARY REPORT

3. Implementation

3.1 In consultation with several national administrations, companies, and professional associations, the Commission (SOEC) prepared a format for submission of data in the form of a questionnaire with accompanying note, which were adopted by the Working Group on Energy Prices of the SOEC on 5th June 1991.

3.2 In July 1992 two meetings took place:

i) The Working Group on Energy Prices met to examine the application of the Directive and the statistical indicators to be developed in future (average prices and price indices). The aims of this Group to facilitate implementation of the Directive are not yet finalised. So on certain issues, its work will continue.

ii) The Consultative Committee met and approved the inclusion in the Annexes of new places and regions in the territory of the former German Democratic Republic for application of the Directive (Dresden and Berlin for gas; Erfurt, Leipzig, Rostock for electricity consumers and Osten for electricity marker prices). This change has been published in the Official Journal (L277 of 10/11/93).

3.3 Up to the time of preparation of this report, all Member States except Spain had completed the transposition of the Directive into national law, or something equally satisfactory in legal terms. The table on the next page shows the details. Although some Member states in fact did not complete this process until recently, this did not prevent the required data on prices from being regularly received from all of them (including Spain). Price data corresponding to 1 July 91, 1 January and 1 July 1992, and 1 January 1993 have accordingly been published. There have been only a very small number of minor corrections - to original data which were submitted for 1 July 1991.

3.4 Regarding pricing systems, their details as pertaining on 1 July 1991 have been published. The Commission intends to publish by early 1994 updated versions of the price systems in use in 1993. The descriptions of pricing systems received to date have been - at least - adequate, but have differed somewhat in content and degree of elaboration. So, in 1994 the Commission will ask Member States to conduct a review of the presentation of their pricing systems as reported, to improve the degree of homogeneity in subsequent publications.

3.5 Several Member States have not yet succeeded in forwarding the required information regarding breakdowns of consumers and corresponding volumes by category. Details to date are as follows:

- Electricity: 4 Member States complete, 5 have sent incomplete breakdowns, 3 missing;
- Gas: 7 Member States complete, 1 incomplete, 3 missing; (Greece is not a party).

The quality of responses is improving. Breakdowns are a new element of information introduced by the Directive, which was not sought previously. Some Member States have had difficulty in compiling such information, because of the limited disaggregation of their existing consumer data. A good illustration is that whereas many are capable of indicating the number of consumers within a given range of consumption *volume* (such as I 3-1 and I 3-2 *together*), their existing consumer data does not allow them to distinguish further between these categories (who in fact differ only in terms of their *load factor*: see Annexes to Directive). In any case, the Commission is actively pursuing this matter with all of the Member states concerned. Although not for publication, this data is essential to achieve the statistical goals foreseen i.e., weighted average prices by Member State and for the Community as well as price indices, and to ensure the representativeness of the categories at national level.

3.6 Regarding marker prices (for the very largest electricity consumers only, see part II of Annex II of the Directive), the Commission has considered it preferable for technical reasons to allow, at least for the present, the reporting authority in each Member State to indicate what demand characteristics and conditions apply to the marker prices which they report. The Commission considers also that it may

Member State	Nature of Act	Date of Adoption	Publication Date	Date of Notification	Directive Entered into Force
B	Ministerial Decree published in Moniteur Belge	18-05-92	18-05-92	28-09-92	18-05-92
D¹	Accord signed. Details published in Bundesanzeiger.	08-07-93	30-07-93		08-07-93
DK	Decree issued by Energy Ministry	16-03-92	16-03-92	01-04-92	16-03-93
E²					
F¹	Law published in Journal Officiel	19-07-93	20-07-93		20-07-93
GR³	Law published in Efimeris Tes Guverneseus	25-07-91	25-07-91	09-08-91	25-07-91
IRL⁴	(Existing provisions)	--	--	--	01-07-1991
I	Law published in Gazzetta Ufficiale	20-02-92	20-02-92	26-03-92	20-02-92
LUX⁴	(Existing provisions)	--	--	--	01-07-91
NL	Accord signed between Economics Ministry and relevant parties.	--	--	25-05-92	01-01-92
P	Ministerial Decree published in Diario da Republica	30-05-92	30-05-92	10-06-92	30-05-92
UK⁵	Energy Act 1976	--	--	--	01-07-1991

¹At the time of writing, neither Germany nor France have yet officially informed the Commission of their implementation of the Directive.

²Spain has proposed implementation measures which have not yet been adopted. During 1992, Spain was formally requested to complete this process.

³Greece has only implemented that part of the Directive relating to electricity. This is in accordance with Article 9, Para. 2, and Annex I of the Directive, both referring to natural gas, which is not yet generally available in Greece.

⁴Only administrative measures were deemed necessary, so as to avail of existing legislation and provisions. The Commission has accepted this as fully satisfactory, in an exchange of letters.

⁵The provisions of the existing Act have been deemed sufficient to implement the Directive, ie transpose it into national law.

prove worthwhile in the future to devote a special publication to Marker Price systems, the related Demand Characteristics, and Conditions (concerning the securing of price reductions), as reported to the SOEC. But here again a homogenous form of reporting of prices and conditions, insofar as possible, which will allow comparison across Member States is required. The Commission is keeping this matter under review, and if necessary, as allowed under the Directive, the Commission will itself define demand characteristics for each marker price category.

4. Assessment of Experience to date.

4.1 Regarding the requirements in Article 1 (1) and (2) of the Directive, the result of application of the Directive has been positive:

- All the price data are regularly received and published.
- All countries have forwarded information on pricing systems.

- But complete breakdowns have not yet been received.

4.2 The designated information on prices for gas and electricity is published regularly by the SOEC in the form of Eurostat "RAPID REPORTS: Energy and Industry". Detailed descriptions of pricing systems in operation have also been published in this way. The first publications referred to prices as of 01/07/91. A full listing of SOEC price publications to date under this Directive is as follows:

1991 -	no. 19 (Gas Prices) : 01/07/91
	no. 20 (Electricity Prices) : 01/07/91
	no. 22 (Pricing Systems - Electricity)
	no. 23 (Pricing Systems - Gas)
1992 -	no. 3 (Electricity Prices - Supplement):01/07/91
	no. 4 (Gas Prices - Supplement): 01/07/91
	no. 17 (Gas Prices) : 01/01/92
	no. 18 (Electricity Prices) : 01/01/92
	no. 23 (Pricing Systems - Gas: Supplement)
	no. 24 (Pricing Systems - Electricity: Supplement)
	no. 30 (Gas Prices) : 01/07/92
	no. 31 (Electricity Prices) : 01/07/92
1993 -	no. 12 (Electricity Prices) : 01/01/93
	no. 17 (Gas Prices) : 01/01/93

4.3 For gas, seven standard categories of consumer (I1 to I5) are specified according to size, for 31 reporting sites; for electricity there are nine categories (Ia to Ii) and 32 reporting sites. Publications arising from the Directive list nine series of price data for each location specified. The 3 main series refer to prices in national currencies; in terms of purchasing power parities; and in ECUs on an equivalent energy basis, ie in terms of ECUs/100kWh (electricity) or ECUs/GJ (gas). Also, for each of these three formats, three subseries are given, ie prices including all taxes; prices excluding VAT but including other taxes (where they exist); and lastly, prices net of all taxation. Each issue therefore contains over 4000 individual price figures, but if only one series is to be examined, this involves about 470 individual prices per publication (not including marker prices).

4.4 As indicated in Para. 3.5, some Member States have not been able to provide breakdowns of consumers and the corresponding volumes by category of consumption of energy (whether for gas, electricity, or both). Some have only been able to provide partial breakdowns. In total, only about half the required information has been made available. Hence a satisfactory resolution cannot yet be reported on which to base one of the targetted sets of outputs from the submission of data, viz. weighted average prices and price indices. But the Commission considers the problem will be resolved in due course as Member states adapt their systems to provide such information.

4.5 There have been numerous references in the professional journals and consultants reports which have drawn on the data published under this Directive. This supports the aims of the Directive and at the same time illustrates that it has proven relevant in disseminating transparent price information.

4.6 From a broader perspective, the SOEC has already begun to seek information on domestic prices for gas and electricity on a similar six monthly basis. This is being done informally. Responses to date have been helpful.

5. Conclusions on Operation of the Directive

5.1 For many years, the SOEC had published prices charged to industrial end-users of gas and electricity for several consumption categories in each case. Directive 90/377/EEC extended the number of categories to cover virtually all sizes of industrial consumer. It has also given a legal base to ensure the official nature of the prices to be published, based on official tariffs and conditions pertaining, and provides the SOEC with the right to examine disaggregated data if anomalies or inconsistencies are observed in submitted data. (No formal request has proved necessary to date). Also, the Directive requires for the first time that Member States communicate details to the SOEC concerning the breakdown of consumers by category.

5.2 Two of the three main aims of the Directive have been achieved, ie via publication by the SOEC, to ensure transparency of the pricing systems which are in place, including tariffs and conditions; and transparency (over time, and geographically, among different Community locations) of the prices which pertain arising from those systems, for specific categories of consumer. Because of the wide range of conditions which can be quoted, the different elements in tariffs, and evidently even different bases for determining tariffs, the Commission considers it appropriate to keep the format of submission of data on prices and pricing systems under review, for the purpose of maximising homogeneity.

5.3 Regarding the third main aim of the Directive, as stated in Para. 3.5 full details of the *breakdowns of consumers* by category have not yet been submitted to the SOEC. This has been the greatest weakness in the implementation of the Directive to date. In fact, both elements - all the price data, and all the corresponding breakdowns - are needed to determine the statistical indicators foreseen. The efforts of the Commission in conjunction with the reporting authorities of the Member States will continue until the problem is resolved.

5.4 Under the Provisions of the Directive, data relating to prices need only be communicated where there are at least 3 consumers in the category in question. This has meant that in a small proportion of instances, price data for the very large consumers has not been communicated for some few locations. Over time however, if the number of consumers in a particular category changes to 3 or more, it becomes obligatory for the Member State to provide price information for that category. This has happened a number of times, which shows that the market situation in Member States is not static.

5.5 Marker prices as defined in the Directive, apply to the very largest electricity consumers, at 25, 50, and 75 MW. Prices for such energy intensive consumers are of particular interest. They have been published regularly by the SOEC, but to *allow valid comparison* among locations or Member States, account must be taken of the detailed conditions which apply to the stated prices. Thus, the Commission is keeping under review the scope of reported information on marker prices *and* conditions, to maximise insofar as possible, the comparability of published data.

5.6 In summary, attention is now focussing on seeking full breakdowns of consumers by category from all Member States, and reviewing what changes are necessary or possible to maximise homogeneity of presentation of all data on prices, pricing systems, and conditions pertaining (given the range of each which exist), in order to optimise comparability.

EXAMINATION OF THE PUBLISHED DATA

6. Overview

6.1 The price data can be examined from two main viewpoints:

- i) that of an industrial end-user of electricity and/or gas; and
- ii) that of the Commission and Member State administrations.

As indicated in 4.3, the amount of data generated is quite substantial, but this is not an obstacle either to determining clear patterns in the total data, or to transparency of prices as seen by a specific electricity (and/or gas) end-user of a certain size/category such as I a or I 3-1. Individual consumers can easily identify published prices for their own category in all the statutory locations. However, there is the question of what basis an industrial consumer should use to make a comparison of prices charged in different locations for his category: for example, comparing prices in his own location with those published for neighbouring Member States (leaving aside the simpler task of making single-currency comparisons with other regions of his country). It is worth noting that he is unlikely to perform calculations in ECUs, as this would be indirect and in the limit could even give a false or misleading result. Instead, he is likely to calculate only in national currencies, using a suitable exchange rate (perhaps a short or medium term estimate). Rational behaviour for a specific end-user is not to consider the general picture, but to focus on the specific alternatives available to him and their likely real cost to him in his own national currency. By the same token, he is unlikely to be concerned with any corrections arising from consideration of relative purchasing powers.

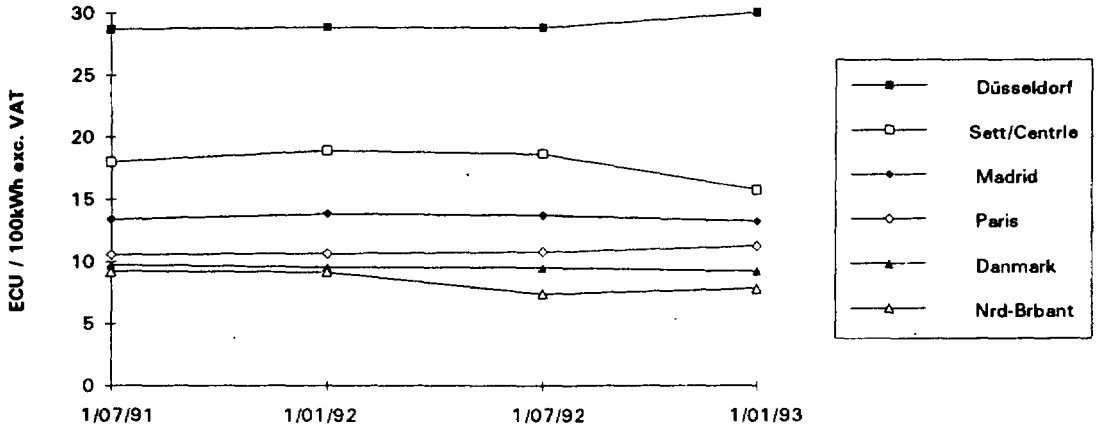
6.2 The review of published price data which is offered below is undertaken from the viewpoint of the Commission and Member State authorities. It combines illustration and discussion of certain evident patterns, with necessary guidelines for interpreting these findings in context. A direct basis for comparison across all 12 national currencies is needed, and so prices are considered in ECU only. Also, VAT rates differ and VAT is normally recoverable by industrial consumers. Indeed, where there are *other taxes*, these are also sometimes recoverable by industrial consumers (such as the standard 33 ore per kWh energy-tax on electricity in Denmark), but this is not always the case (eg excise duties). Therefore, the most appropriate comparison across locations is to examine prices in ECU nett only of VAT, ie focussing primarily on just one of the nine series referred to in 4.3, and bearing in mind the caution suggested by the last sentence (See also Annex 1). However, the validity of the patterns which will be illustrated is not diminished by the qualifications which strict accuracy demands.

6.3 It is apparent that 3 main types of price differences are possible: firstly, changes over time in a specific location for a specific category of customer; secondly, differences in a specific location between prices for small consumers and those for much larger consumers (for simplicity, these will be measured as 'price ratios'); and thirdly, differences between locations for a given category of consumer monitored on the same date [these will be referred to as '(geographical) price differentials']. The observed range of these differences is also of interest. (See Annex 2 for general comment on price differences).

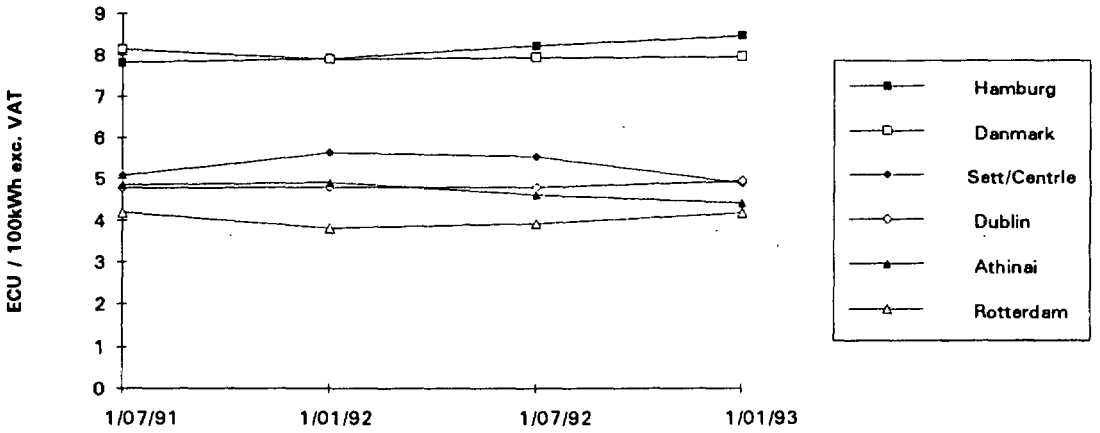
7. Price Changes over Time, and Convergence.

7.1 a) Close examination reveals that evolutions over time (ie between 1 July 1991 and 1 January 1993) have not been hugely significant. They range for electricity from reductions of 15-19% for the smallest category (I a) in Netherlands, to 11-13% in Italy and the UK, 9% in Greece, 5% in Denmark; to virtually unchanged in Spain; to small increases in Ireland, Portugal, and in general, Germany - except Hamburg, where prices for I a rose 8.5%, and finally to increases of 7% in France, Belgium and Luxembourg. Generally the observed changes for larger categories are even smaller. But anomalies do appear. For example, Rotterdam, which showed the greatest single decrease in the period (19%) for I a, had the second highest individual rise (17% for I c); and Noord-Brabant which had the second highest decrease overall (15% for I a), had the largest single increase (32%) (for I c). Such different 'experience' for different size consumers could be explained by some change in tariff policy in the period.

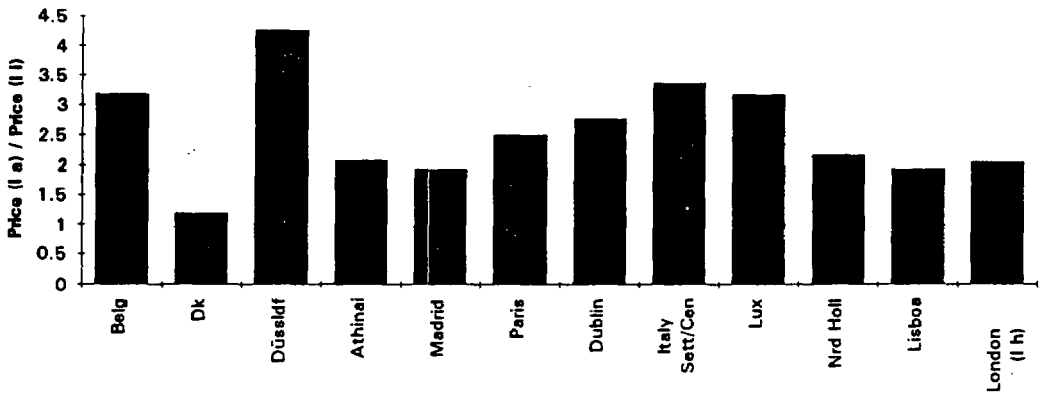
Electricity: SMALLEST Category (I a)



Electricity: LARGEST Category (I i)



Electricity: Price Ratio at 01/07/92 between Small (I a) and Large (I i) consumers



b) The electricity price falls in Italy and to a large extent the UK are in fact due to the ECU exchange rate adjustments between 1 July 1992 and 1 January 1993 (real prices in Lira nett of VAT were unchanged or even higher on 1 January 1993 over 1 July 1992, at which date they had already increased over 1 July 1991). Because of this factor, the sample relationships which are graphed for gas and electricity have been calculated for the date 1 July 1992, before the ERM crisis and its effects. This is considered the most representative date for ECU-base comparisons.

7.2 a) For gas also, price changes over the period are mainly moderate, reflecting relatively stable fuel prices and rather low general price inflation. For the smallest consumers I 1, ECU prices nett of VAT fell moderate amounts over the period in most Member states, to a maximum of about 17% in the U.K. (almost 16% in Milano). They appeared to rise in France and Ireland but actually fell in national currencies. In Germany, real prices for I 1 rose only in Weser-Ems (0.3%). They fell elsewhere but in a few locations such as Dortmund rose in ECU terms (5%). As against this, the apparent big drop in UK and Italy is due largely to the ECU exchange rate adjustment.

b) Unlike electricity, price changes for larger consumers are often as great if not greater than for I 1. In the UK, Italy and Ireland, reductions or increases are maintained across categories; for Belgium, however, the ECU price reduction ranges upwards from 4% for I 1 to 12% for I 4-2; and in Denmark, a reduction of 5% for I 1 changes to an increase of 23% for I 3-1 and I 3-2, and an increase of 28% for I 4-1 and I 4-2 (these in fact are the largest increases evident to date). As against this, the increase in Dortmund of 5% for I 1 contrasts with reductions of from 15% for I 2 to 21% for I 5 (the largest single fall evident to date).

c) The need for caution with ECU price comparisons, is illustrated clearly in the Figure showing gas prices for category I 4-2 on page 10. Here, prices for Milano seem to fall between 1 July 1992 and 1 January 1993, converging with those for Lille, which seem to rise. In fact, in national currencies the opposite happened. The apparent trend in ECU, due to the relative ERM movements, is potentially misleading. But the general pattern of relativities as illustrated and discussed is entirely valid.

7.3 Regarding any possible signs of convergence of prices, the available time series of statutory observations, comprising only four sets, does not allow a rigorous statistical assessment. Since certain structural cost elements such as fuel transport would clearly remain different even if other elements were or could be approximated (such as taxes; environmental costs; capital costs through open public procurement; and even general tariff policies); and also since fuel input choices differ, there is little reason to expect that prices must converge, even less so to a single level. Also, although the degree of observed change clearly varies among locations, it is evident that price differences over time are less significant than other relative differences which can be seen.

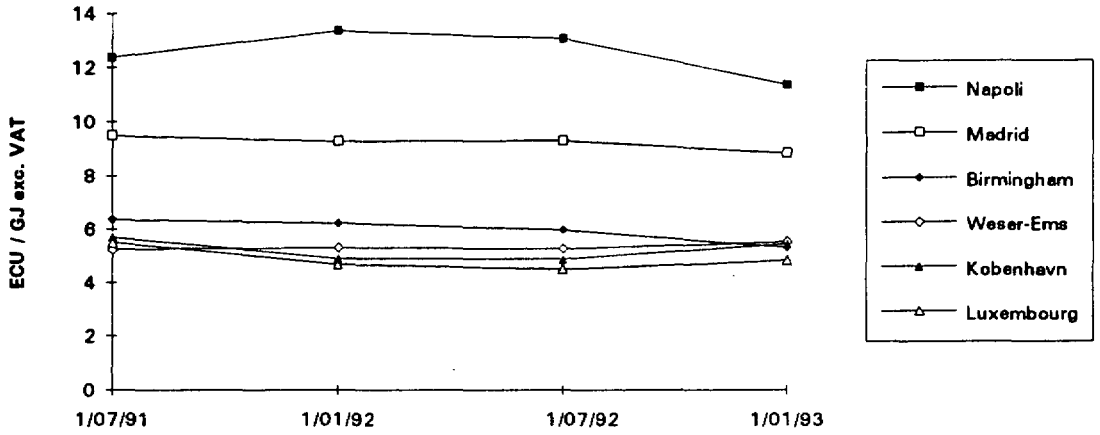
8. Price Ratios between Different Categories

8.1 The range of size of end-consumer considered, whether in terms of volume or peak demand, varies enormously, as detailed in part B of Annex 2. The standard categories refer to very different consumers from the suppliers point of view. Apart from the likelihood of being able to offer volume discounts on the basis of energy units sold, it is also likely that lower direct costs of supply (eg at higher voltage) can justify lower prices when larger consumers are considered. This is generally evident in the published data. (There are some examples of higher prices for larger consumption, but the examples seem to be unsystematic, with prices generally falling for larger categories.) Thus, price ratios observed between smallest and largest consumers for gas range between 1.14 in Luxembourg and 3.48 in Spain (3.66 for Napoli only). For electricity between I a and I i they range from 1.20 in Denmark to 3.18 in Belgium (excluding Düsseldorf only, at 4.26).

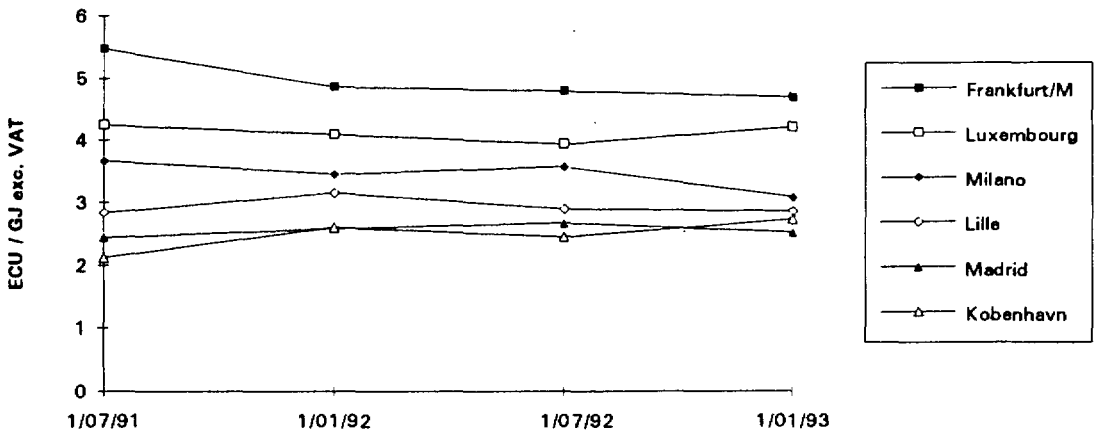
8.2 Gas price ratios: a) Prices are not available everywhere for the largest category, I 5, and so the comparison shown (page 10) is between the second largest category, I 4-2, and the smallest category, I 1. (Greece is excluded as is Portugal for which only gasworks gas prices were available.)

b) Except for Italy, Spain (Madrid), Ireland, Strasbourg, and most German locations, prices for I 1 were at 6.01 ECU/GJ or lower. Napoli was dearest at 13.09 ECU (the other Italian locations ranged 8.2-9.5 ECU) and Luxembourg cheapest at 4.51 ECU. The high nominal prices for Italy and Spain

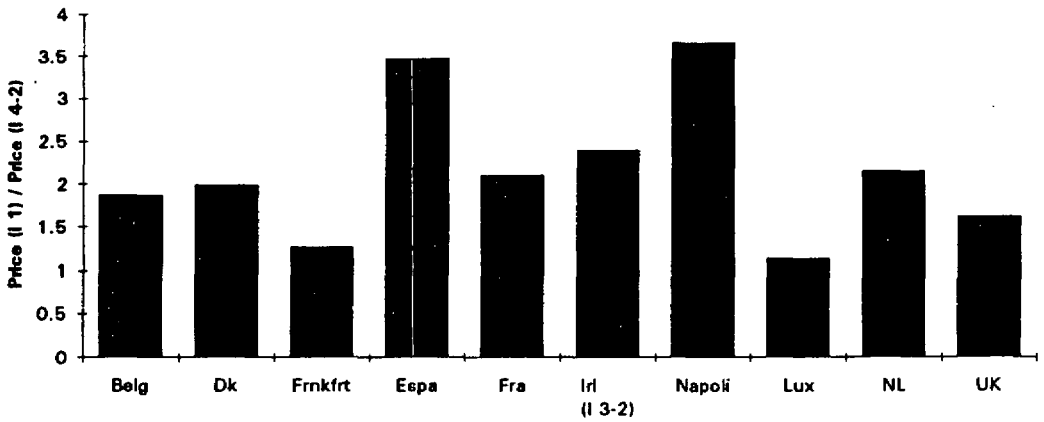
GAS Prices: SMALLEST Category (I 1)



GAS Prices: 2nd LARGEST Category (I 4-2)



Gas: Price Ratio at 01/07/92 between Small (I 1) and Large (I 4-2) consumers



can be viewed in the context that these are importing countries, and that Spain in particular has relatively few gas consumers of this size at present. Prices for the larger consumers I 4-2 are generally a good deal lower as would be expected, ranging from a low of 13% cheaper in Luxembourg to a high of 73% cheaper in Napoli. And in contrast to the situation for the smaller I 1 consumers, prices for I 4-2 in Madrid are among the cheapest in the Community, pointing clearly to a tariff policy to promote volume consumption, in order to help underwrite gas infrastructure requirements. The relatively insignificant variation in prices in Luxembourg also points clearly to a tariff policy different from other locations/Member States. It also leads to the interesting result that whereas gas prices in Luxembourg for consumers I 1 and I 2 are the cheapest in the Community, prices in Luxembourg for I 4-1 and I 4-2 are the second most expensive in the Community. (For electricity prices, virtually the same pattern will be made evident for Denmark.)

c) The last Figure for gas consumers on page 10 shows the range of price ratios which were evident around the Community on 1 July 1992. The highest ratios shown are for Italy, Spain, and Ireland, indicating greater comparative reductions here than elsewhere for larger consumers. This means that their prices for larger consumers are relatively more attractive, which is noteworthy since they were the dearest locations for the small I 1 consumers (most German locations should be included also on this point). The comment made concerning Luxembourg prices in 8.2 b) above is illustrated by a price ratio there of only 1.14 between I 1 and I 4-2 - the lowest in the Community. Price ratios in Frankfurt as shown, and indeed throughout Germany are also low.

8.3 Electricity Prices: a) Price ratios between small and large electricity consumers are shown on page 8 (last Figure). The range of price difference is somewhat narrower than for gas but the general pattern is similar, with high ratios in Belgium, Luxembourg, and Italy contrasting with a very low price ratio in Denmark. Price ratios in the rest of Germany are much lower than in Düsseldorf. Referring to the sample electricity price data which are graphed on page 8, prices in Düsseldorf for the smallest consumers I a were the dearest in the Community by a long margin, at over 28 ECU. Indeed, I a prices in both Germany and Italy were generally much higher - elsewhere prices did not exceed 15 ECU. Noord-Brabant was cheapest in the Community at 7.42 ECU. Prices for I a in Denmark, as can be gauged from the Figure, were second cheapest at 9.53 ECU.

b) For the largest consumer type, I i, highest Community prices were at a different German location - Hamburg (8.23 ECU). Again the lowest were in the Netherlands - Rotterdam at 3.92 ECU and Noord-Brabant at 3.99 ECU. (Both Hamburg and Düsseldorf are within 400 km of virtually anywhere in the Netherlands.) This time Denmark was the second dearest location after Hamburg, giving it the lowest price ratio (1.20), a similar pattern to that reported for Luxembourg in relation to gas. (Even without the energy tax, this Danish electricity price ratio remains the lowest in the Community). Again it points to a clear tariff policy, different to anything seen elsewhere for electricity. For Belgium, Greece, France, Ireland, Luxembourg and the Netherlands, prices for the large I i consumers were in a tight range 3.92-4.79 ECU.

8.4 Does a 'natural' price ratio exist? As seen for Luxembourg gas prices and Danish electricity prices, there can be evidence of a tariff policy leading to price behaviour which is not seen elsewhere. The question arises whether there is not some 'natural' price ratio which can be estimated for gas or for electricity. This natural price ratio would be based on a tariff policy which is neutral to consumer size, with relative prices being determined only by the different real direct costs of supply, as discussed in Part B of Annex 2. The empirical evidence is that such a natural price ratio exists and can be estimated for the Community, arising as it does from mainly engineering variables. It can be estimated by examining price ratios for those countries whose Community ranking 1-12, (whether expensive, moderate, or cheap) varies minimally or not at all, between I a and I i for electricity, I 1 and I 4-2 for gas (and whose ranking ideally, though not critically, varies little for the categories in between). On this basis the following are selected: for gas - France 2.09, Netherlands 2.15, Denmark 1.99; for electricity: Portugal 1.93, Spain 1.93, France 2.33, Netherlands 2.11, Ireland 2.77. The results are remarkably consistent and suggest a natural price ratio for gas based on costs of supply, of around 2.0 with that for electricity higher at about 2.25.

8.5 There is a clear link between the observed differences in price ratios between small and large consumers across Member States and the need for provision of breakdowns of consumers by volume

and category as called for under Article 1 (3) of the Directive. Certainly, where prices for all consumers - in say Germany or Italy - are greater than all the corresponding prices in say, Netherlands, then the situation is clear-cut. But for some comparisons, the only way to determine whether electricity prices in say, Denmark are generally higher or lower than elsewhere by some fair measure, and by what percent factor (which is of interest to both the Commission and the Member State authorities) is to have available all the breakdowns of consumers according to categories, so that weighted-average representative prices can be estimated. In passing, it is worth confirming the unsurprising result that there is no location which is dearest for all consumer categories, whether for gas or electricity, although many are clearly either more or less expensive in general.

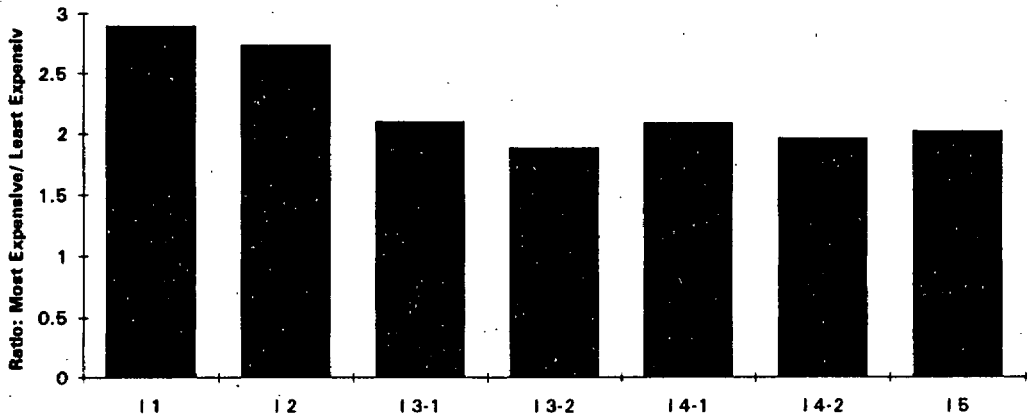
9. Price Differentials among Community locations

9.1 a) Perhaps the most important issue to be considered is the extent of **geographical price differentials**, ie differences in price for the same category of consumer among different reporting locations in the Community. Overall, **electricity price patterns** are marked by the consistently high prices across all categories which are evident in Germany, Portugal and Spain, whose prices never drop below the top 4 in the Community. ('Member State prices' for such ranking are based on a simple average of reported prices for all locations, for Member States such as Germany with several reporting locations). Italian prices figure among the top two most expensive also (for categories I a to I f), and are only relegated to fifth place for categories I g to I i by the entry of 'high' Danish prices for these latter categories (however these Danish prices include the 33 ore/kWh energy tax which is in fact recoverable). At the other end, electricity prices in the Netherlands were cheapest in the Community virtually throughout, except for category I c where they were second cheapest (Greece was cheapest). French prices too were low, never rising above the fourth cheapest in the Community, with prices also low in Greece, Luxembourg, and Ireland. In these countries, prices rose above the bottom half of the Community table for at most one category of consumer. Finally, prices for Belgium and the UK were moderate, except for the largest consumers I h and I i, for whom prices in the Benelux countries along with France were cheapest in the Community.

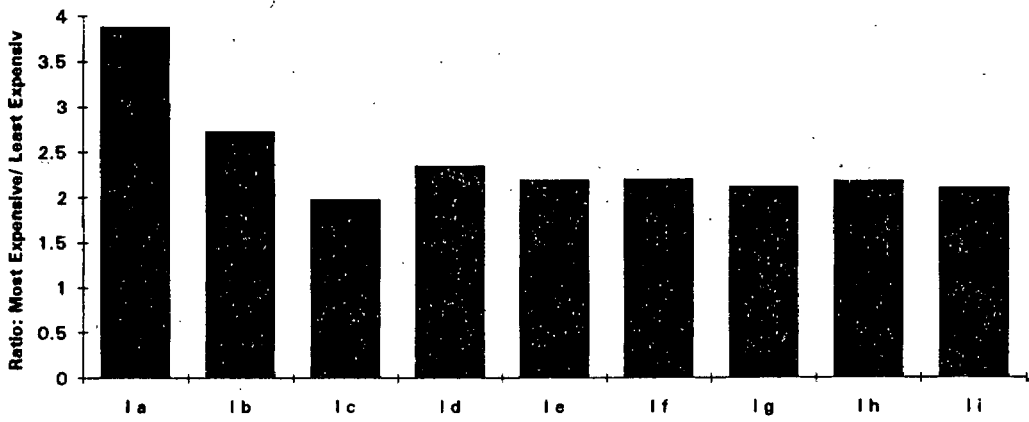
b) For gas prices, the general pattern is less clear-cut. True, German prices, along with Italian ones, are again among the top 4 most expensive for all categories (I 5 is not included); and prices in Denmark are among the lowest 3 Member States for all categories. Also, there is the example of Luxembourg whose price ranking disimproves drastically with consumer size, as for Denmark with electricity (based of course on tariff policy). But other Member States radically switch ranking too, for example Spain and Ireland, who are second and third most expensive for the smallest category I 1, both switch to be among the very cheapest reported for the larger categories (I 3-1 and upwards). On average, UK prices rank third most expensive, with France, Belgium and Netherlands moderate.

9.2 The range of price differentials evident for gas and electricity for each consumer type is shown graphically on the next page. Except for the smallest gas and electricity categories I 1, I 2, I a and I b, the level of price differential is fairly constant, averaging about 2.0 for gas and about 5% more for electricity. That is to say, for most sizes of industrial consumer, there are differences of at least 100% (105% for electricity) which will be evident between the dearest reporting location and the cheapest one. (The most expensive location of course is not the same one for each consumer category.) For the two smallest types of gas consumer, I 1 and I 2, the differentials appear higher than for larger gas consumers, in a pattern which seems similar to that evident for electricity consumers in the second Figure on page 13. In fact, these higher differentials are based on higher prices in just one Italian location - Napoli. If an arithmetic average is taken for the 5 reporting Italian locations (Italy is unmistakably dearest for I 1 and I 2 since all Italian prices are dearer than everywhere else) then the calculated price differential for the Community reduces to little more than the general level observed for other gas categories, ie something over 2.0. For electricity however, the pattern as illustrated graphically (for I a and I b relative to others) is not exaggerated by just one exceptionally high price. The price differential for the second smallest consumer type, I b, is 2.73, meaning a difference of 173% between the cheapest location and the dearest. Remarkably, for the smallest electricity consumers I a, the geographical price differential is a high 3.88. This arises because the most expensive location in Germany, Düsseldorf, at 28.82 ECU was twice as expensive as the cheapest German location - Leipzig (14.39 ECU), which in turn was virtually twice as expensive as the cheapest location overall, Noord-Brabant at 7.42 ECU.

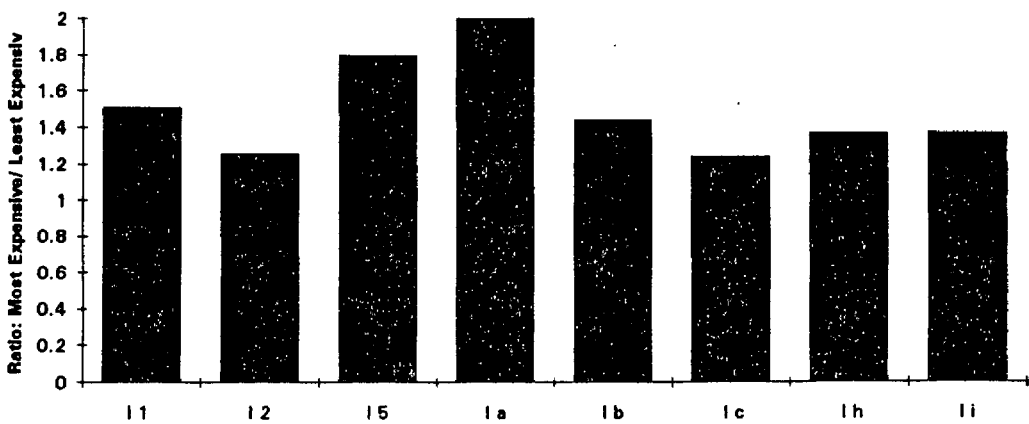
Price Differentials across EC at 1 July 1992 for GAS consumers



Price Differentials across EC at 1 July 1992 for ELECTRICITY consumers



Price Differentials within Germany at 1 July 1992



9.3 The case of Germany is exceptional, not just because it has far more reporting locations than other Member states, but also because of the unparalleled price differentials which exist among various locations there for both gas and electricity (see Figure on page 13). Locations in former East Germany are cheapest for electricity, especially Leipzig, although for all except the smallest categories Ia and Ib, the relative difference in average prices can be accounted for by the 'Kohlepfennig' levy, which applies only in former West Germany. The most expensive locations for electricity are Hamburg (for 6 of the 9 consumer categories) and generally, Düsseldorf and Frankfurt am Main. The contrast with Dutch prices, in particular, is striking. For gas, the cheapest place in Germany is clearly Weser-Ems (for 6 of 7 gas categories: gas prices for former East Germany were not available at 1 July 1992), and for the largest I 5 consumers only, München. In fact for 3 categories, München is the dearest location, as is Düsseldorf for two, and Stuttgart and Frankfurt am Main for one each.

It must be acknowledged that many gas and electricity prices in Germany are higher than those in the bulk of other Member States. This is true despite the fact that gas prices eg for major users, are based on 'market orientation' and in competition with other fuels. In fact only gas prices for Weser-Ems are truly compatible with Community prices in general, since apart from I 1 and I 2, all other German prices outside of Weser-Ems are dearer than anywhere else in the Community; with just a single exception - Luxembourg is a little dearer than Hannover for I 4-2. And as stated in para. 9.1 a), German electricity prices were consistently in the top 4 in the Community at 1 July 1992.

10. Final Comments on Published Prices

As indicated in Annex 2, there are many factors which can impact on gas and electricity prices, indeed energy prices in general. Not only are these factors various, but they can differ in scale from Member State to Member State, even from reporting location to reporting location; and some factors such as taxes, levies or (cross) subsidy elements can exist in some locations and not apply elsewhere. Clearly the economic efficiency of gas and electricity suppliers cannot be measured or compared through examining prices alone, nor is any attempt made to do so. The purpose of the Directive is to ensure the transparency of prices to industrial end-users. Through analysis of the substantial data which has been provided and published to date under Directive 90/377/EEC, this part of the Report has sought to highlight the range of empirical price relationships which are evident, and to characterise them in terms as practically informative as possible.

The price systems which operate for gas and electricity in each Member State have been published. However, the analysis here focussed directly on prices for each consumer category as communicated to the Commission. Where more than one tariff could apply, it is the responsibility of each Member State reporting authority to ensure that the prices quoted for a particular category are the most advantageous ones, in accordance with Para. 13 of Annex I and Para. 6 of Annex II of the Directive.

ANNEX 1 Factors which affect Price Comparisons made in ECU across Member States.

1. (At a particular time): Differences in purchasing power of ECU in different Member States.

(Over time):

2. Differences in inflation among Member States (gas/electricity price inflation or general retail price inflation - linked to factor 1 above).

3. Adjustments in currency values versus ECU (as happened during the ERM crisis between the Price Publications for 1 July 1992 and 1 January 1993). This can alter price relationships in ECU even where prices in national currencies are unchanged. Having regard to this factor in particular, the analysis made in this report is based in the main on the published data for 1 July 1992, except where stated otherwise. This is considered most representative and the patterns highlighted on this basis are evident generally, in any case.

ANNEX 2 Factors which can contribute to Differences in Observed Prices

A. Between different locations, for similar consumers ('geographical price differential'):

1. Differences in - **taxation** (apart from VAT - environmental or energy taxes);
other levies: eg coal, or non-fossil fuel (nuclear, renewables) levies.

2. **Tariff policy** in general, whether determined by the utility or national or regional authority. In particular, how prices are determined for one size of consumer vis-a-vis his larger and smaller counterparts in order to recoup total costs. This can include cross-subsidisation among different classes of consumer, eg among different sizes of industrial consumer or between industrial and non-industrial consumers (eg social tariffs for all or certain domestic consumers). Of course cross-subsidisation can be applied in either direction. Of course too, there can be fully rational reasons for a specific tariff policy, for example one which offers low prices to small industrial consumers but relatively higher prices for the larger consumers - in order to promote use of CHP (combined heat and power) among large industrial energy users. But this is not a primary issue in this analysis.

(Nett of all taxes or recoverable elements):

3. **Differences in - capital cost** elements including environmental costs and supply infrastructure;
operational cost elements including fuel and fuel transport;
various other cost elements such as payment for transmission line right-of-way.

4. **Other subsidies** not energy-related, eg paid to support public services such as public transport.

5. Perhaps the most sensitive element of all: **efficiency of economic operation**. This refers to the relative performance of a gas or electricity supplier in minimising their own cost elements, all else being equal, and how this translates into the prices they charge. Data published under the Price Transparency Directive cannot isolate this or indeed any of the factors listed. Nor was it intended to - the Directive simply provides accurate price information so that price differences can be examined. But it is exactly these price differences which are of interest to industrial end-users. The *actual reasons for any price differences are of little importance to them.*

B. In one location between different categories of consumer ('price ratio'): Apart from tariff policy, the main factor will be differences in the **direct costs of supply**. These are largely network-related, eg pipelines, overhead or underground cabling, transformers and metering. They can include other elements, eg for transmission losses (or savings) and plant costs (to account for a peaky load profile). Considering that electricity consumers in the largest category I i consume over 2300 times the volume of the smallest consumer I a, and have a peak power demand which is higher by a factor of over 300, it cannot be ignored that these differences translate into different supply costs. Equivalent factors for gas are 10 000 (volume) and around 600 (peak demand) between the smallest category I 1 and the largest, I 5.

COM(93) 666 final

DOCUMENTS

EN

12

Catalogue number : CB-CO-93-720-EN-C

ISBN 92-77-62842-1

Office for Official Publications of the European Communities
L-2985 Luxembourg