



COMMISSION
OF THE EUROPEAN
COMMUNITIES

DIRECTORATE-GENERAL FOR ENERGY

**Study on the
ADVANTAGES AND DRAWBACKS FOR THE
EUROPEAN COMMUNITY OF THE INTRODUCTION
OF A SYSTEM OF 'COMMON CARRIER' FOR THE
TRANSPORT OF NATURAL GAS**

Final report - Executive summary

C&L
Belmont

in association with
Prognos AG

January 1989

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our reference

Mr Johannes M. Maters
Head of Gas Division
Directorate General XVII (Energy)
Commission of the European Communities
Rue de la Loi 200
B-1049 Brussels
Belgium

13th January, 1989

Dear Mr Maters,

STUDY ON THE ADVANTAGES AND DRAWBACKS FOR THE EUROPEAN COMMUNITY OF THE
INTRODUCTION OF A SYSTEM OF "COMMON CARRIER" FOR THE TRANSPORT OF NATURAL
GAS

In response to your letter of 19 December 1988 setting out your comments on our Draft Final Report, we have great pleasure in submitting, as requested, twenty-five (25) copies of our Final Report. We have incorporated your various comments and suggestions and have, as agreed, prepared the Executive Summary as a separate document.

We have very much appreciated the opportunity of working with you on this important study and look forward to hearing from you if you wish us to present our conclusions to Commission staff (from within or outside DG XVII) or if we may be of any further assistance to you in the future.

Yours sincerely



W.I.M. Goskirk
Director, Oil & Gas



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EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

I Introduction to common carriage

1.1 The purpose of this study is to identify the principal advantages and drawbacks for the European Community of a common carriage system for the transportation of natural gas. Common carriage is interpreted to mean a qualified legal obligation on the owners of gas pipeline and storage facilities to provide transportation and related services for third parties in return for a reasonable fee, subject to the availability of sufficient unused capacity to allow them to do so. The possibility of introducing such a system at the Community level is identified as a priority area for consideration in the Commission's recent Working Document COM(88) 238 entitled "The Internal Energy Market" and is located within the overall framework of moves to complete the internal market by 1992.

1.2 The main arguments in favour of common carriage are to subject the gas industry to greater gas-on-gas competition and to allow consumers increased freedom of choice among gas suppliers and among differing terms of supply, including the extent of supply security. Arguments against common carriage relate principally to incentives for new investment in supply capacity and possible adverse consequences for overall gas supply security. An assessment of these potential advantages and drawbacks requires a degree of informed judgement - primarily regarding the extent to which competition might emerge and the effect which this might have on the costs of supplying gas to consumers. For reasons discussed at greater length below, the key issues are not susceptible to the sort of quantitative analysis which might be appropriate in relation to the possibility of common carriage in electricity, for example.

1.3 Within the gas sector, common carriage itself is just one of the priority issues for consideration identified in the Working Document. As the document implies, there are a number of essential prerequisites for the introduction of free and effective circulation of natural gas within the Community, via common carriage transportation. In our view, these include the termination of statutory monopolies, exclusive rights, restrictions on free trade in natural gas and restrictive bilateral agreements which could interfere with a pattern of fair and open competition when common carriage

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is introduced. This raises a number of legal and political questions, including national sovereignty over energy policy and the balance in this respect between Brussels and Member State governments.

1.4 The advantages and drawbacks of gas common carriage would depend to a large degree on the way in which that system is defined, the context (gas supply situation) into which it is introduced, the way in which the system is regulated and the manner in which the main market players react to the new business environment. For the Commission, this means that there a number of key issues to be addressed regarding:

- (a) the kind of common carriage system which might be introduced;
- (b) the manner of its introduction; and
- (c) the way in which it is regulated.

1.5 In the light of these considerations, this executive summary sets out:

- (a) key features of the European gas industry which must be taken into account when considering gas common carriage;
- (b) the main potential advantages and drawbacks of a gas common carriage system within the Community; and
- (c) the principal issues of implementation policy which would need to be addressed in order to maximise the potential advantages and minimise the drawbacks of such a system in practice.

II The European gas industry

2.1 The European gas industry is characterised by a series of de jure or de facto monopolies at the national, regional or local level. There is practically no gas-to-gas competition anywhere within the Community, but gas is ultimately substitutable by other fuels in practically all its end uses and often faces intense inter-fuel competition for bulk industrial applications, especially from heavy fuel oil.

2.2 Gas is typically sold to consumers at prices which broadly reflect its market value against competing fuels, subject to the constraint of covering the costs of supply. This is in marked contrast to the situation in the power sector, where many end-users are effectively "captive" to

electricity, regulation is essential and, therefore, output is generally priced on the basis of cost. Gas pricing systems do, however, vary among Member States and include both tariff systems which are subject to close Government scrutiny and individual commercial negotiation of large user gas prices, as in the UK and West Germany.

2.3 For sales from transmission to distribution companies, the basis of pricing is rather different. This usually reflects the competing fuel (often gas oil) prices faced by distributors in selling to smaller residential and commercial customers, less a margin for distribution costs and profits. The responsibility for providing appropriate gas supply security, flexibility and quality typically falls mainly on the transmission companies. Many local distributors are not required to make contractual take-or-pay or capacity commitments and they effectively receive all the gas they need on a daily basis from their transmission company suppliers. In general, their trading margins appear to be fairly well protected against low prices by their gas purchase arrangements with the transmission companies and an argument could be made that there is not sufficient incentive, in some cases, to minimise their own costs or the capacity costs they impose on the gas system as a whole.

2.4 There are a number of statutory monopolies, restrictions, special or exclusive rights and other legal barriers to internal trade in natural gas within the Community. These include priority treatment for national companies in exploration and production (as with AGIP in Italy), rights of "first refusal" over indigenous gas production (as with Gasunie in the Netherlands or SNAM in Italy), exclusive rights to import, export or transport gas over long distances (Belgium, France and Denmark), local monopoly concessions over gas distribution (most Member States) and restrictions on the export of indigenous gas production (as with the UK "landing requirement"). In the much changed circumstances of the current gas market, the 1975 European Council Directive on the use of gas in power stations could also be considered an inappropriate restriction on the free circulation of gas within the Community. There are also bilateral contracts which might be considered restrictive, such as the exclusive supply contract between Gasunie and VEGIN in the Netherlands or the demarcation contracts agreed between West German transmission companies, which effectively divide the country into a number of regional supply areas.

2.5 The only Member State which has existing gas common carriage obligations of any significance is the United Kingdom. Introduced in 1982, this system was refined and given regulatory "teeth" in 1986; common carriage negotiations are underway between British Gas and various third parties, but there is as yet no third party use of the British Gas system. In continental Europe, there are a number of major joint venture pipelines which are used to transport gas over long distances on behalf of the pipeline owners, who are generally gas transmission companies. In other cases, gas in transit is transported on a tariff basis for third parties under voluntary commercial agreements between the pipeline owner and the third party. Transit transportation of this kind is almost exclusively provided for other gas utilities and not for large gas consumers.

2.6 The gas supply situation in the Community is very different from that in the United States and any attempt to transfer lessons too directly from U.S. experience of open access gas transportation is likely to mislead. While the U.S. is 95% self-sufficient in gas supplies, the Community as a whole is projected to be 40% dependent on outside gas sources by the end of the century and in certain Member States the dependence on third countries is significantly higher. The U.S. has several thousand small producers of natural gas, with strong individual interests in getting their gas to market, and no producer accounts for more than about 5% of total sales. By contrast, gas supplies to continental Western Europe are dominated by only four large suppliers - Nederlandse Gasunie, Algeria, the USSR and Norway. In the latter case, gas owned by a variety of producing oil companies is increasingly marketed by a Statoil-led group of Norwegian producers. Turning to the physical capacity to market incremental volumes through third party transportation, falling U.S. gas demand has left considerable spare pipeline capacity; this is not the case in Europe, where demand is generally continuing to grow. It is important to note that there is, in the U.S., no statutory obligation to carry gas for third parties; open access transportation was voluntarily offered by pipeline companies in response to market pressures arising from a "gas bubble" of shut-in production. Gas supplies to the Community could also be stepped up considerably - primarily from non-Community sources. However, the degree of competition between pipelines for long distance transportation is much less than in the U.S. and third party transportation for direct marketing is unlikely to be offered voluntarily.

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2.7 Almost all gas supplies to the Community are bought on the basis of long-term contracts with a substantial "take-or-pay" commitment from the buyer. The purpose of take-or-pay is to assure the producer of a reasonable return on high cost gas field and pipeline facilities. Many continental gas transmission companies have already bought all or most of the gas they need to meet projected demand through to 2000 and beyond, typically on the basis of an 80% or 85% annual take-or-pay commitment. While buyers generally take the risk of a decline in the overall market for gas, gas purchase prices are frequently renegotiated every three years and in such cases the producer bears the price risk. Typically, the producer's margin is squeezed when oil prices are low and expands when oil prices are high. By contrast, transmission companies tend to seek a fairly steady trading margin, while maintaining a level of sales consistent with their purchase contract take-or-pay obligations.

III Advantages and drawbacks of common carriage

3.1 The major potential advantages for the Community of a gas common carriage system include:

- (a) the possibility that a more competitive environment will lead to reduced gas prices, especially for large industrial users who might be able to purchase gas direct from producers via common carriage. Advantages could arise either from lower gas purchase prices or from a reduced non-gas element (see under b below). Whether even large users would be able to buy gas at border prices much below those paid by existing gas utilities is, however, highly uncertain. In any event, the number of consumers both willing and able to conclude direct purchase and common carriage deals in the short to medium term would almost certainly be quite small;
- (b) a chance for industrial users who are currently high-margin customers to cut their costs by buying direct. Even if they cannot secure a lower border price than that paid by their current transmission company supplier, a reasonable carriage charge might still be lower than the transmission company's gross margin on the sale. This could contribute to reducing existing gas price differences as between comparable industrial consumers, both within and between Member States;

- (c) some increased pressure on gas utilities to reduce overheads and operate more efficiently, in order to be able to compete against actual or potential direct marketing by producers. This is a difficult benefit to quantify but we consider that the overall impact is unlikely to be great since non-gas expenses are a small proportion of utilities' total costs, especially at the transmission level;

- (d) an increase in gas purchase options for new gas-fired power stations. Competition between gas suppliers in this market could help provide new low cost sources of electricity generation, with benefits to small as well as large electricity consumers. We do not believe that common carriage is a necessary condition for the development of further gas use in efficient, combined cycle stations. This development may, however, be more extensive in an open, competitive gas market and in turn provides new opportunities for competition in gas supply to take place. In this context, the Commission might wish to reconsider whether the 1975 Council Directive on the use of gas in power stations is still appropriate in the present energy situation; and

- (e) an increase in gas export options for UK producers who are not able to develop their reserves for sale to BG in a timely manner, thus making it more likely that a cross-channel pipeline would be developed to link the Community's largest gas market with the integrated European grid. This could then enhance the security of gas supplies within the Community as a whole.

3.2 The most important potential drawbacks for the Community of a gas common carriage system appear to be:

- (a) the danger that the addition of new gas buyers in the market might lead to competitive "bidding up" of bulk gas purchase prices. This appears rather unlikely in today's "buyer's market" conditions, but the position could conceivably change in future in the event that energy shortages were thought likely. However, substantial new gas discoveries internationally and a fall in the rate of gas demand growth suggest a reduced likelihood of general gas shortage in Europe for some time to come;

- (b) a possible increase in gas prices to smaller consumers who are not themselves in a position to purchase gas direct from the producers. This could arise if gas utilities lose customers to competition via common carriage and the revenue loss is not fully offset by earnings from providing common carriage services to third parties. These utilities could then seek to recover a higher proportion of their fixed costs (particularly gas purchase contract minimum bills) from remaining customers. Some consumers will be protected by inter-fuel competition, but others may have no economic alternative to gas in the short term and could be vulnerable to price increases in this event. This is largely a matter of welfare distribution within the Community rather than a reduction in total welfare, but still raises matters of equity which the Commission may consider important;
- (c) the possibility that transmission companies faced with increased competition, and therefore increased market risk, might be reluctant to invest and purchase gas well ahead of need as at present, or to give the same take-or-pay commitments to gas producers as they do now. This raises the important question of any adverse long-term consequences for gas supply security. Some large non-Community producers such as the USSR or Algeria may already have sufficient low cost gas production capacity for some worsening of take-or-pay terms in new contracts to have little effect. There could, however, be more of a problem in the case of some new North Sea or non-Community LNG projects (such as in Nigeria) which require the very high capital costs to be underwritten by the buyer. In the short to medium term, at least, our view is that the impact of common carriage on overall gas supply security will be modest. Nevertheless, the Commission might wish to consider the possibility of announcing its plans well in advance and phasing in the right to common carriage in order to minimise uncertainty; and
- (d) the possibility of adverse consequences for "new" or "infant" gas industries. Those Member States which have still to build up their basic gas industry infrastructure might find that the uncertainty created by a common carriage right for large industrial consumers makes it very difficult to finance the substantial investments required in the early phases of gas development. In view of this,

the Commission might wish to consider a temporary exemption from the full common carriage system for states such as Greece, Ireland, Portugal and Spain. Such an exemption would only relate to direct sales via common carriage; common carriage for gas in transit to other Member States should be considered as a Community-wide system, even initially, from which there would be no exemptions.

3.3 The potential advantages and drawbacks outlined above are inevitably very general in nature, since we are seeking to cover 12 Member States with rather different gas supply situations. We have also focused mainly on the advantages and drawbacks of common carriage for the Community as a whole. For reference, we set out in tables S1 and S2 at the end of this summary some indications of the advantages and drawbacks for particular classes of gas consumer, the different players in the gas industry and the various Member States.

3.4 The major direct benefits of common carriage would accrue to very large gas users, although there is a potential for small electricity consumers to benefit indirectly from the competitive pricing of gas to combined cycle power stations. Medium sized industrial companies who could not themselves purchase direct might nevertheless form purchasing consortia or buy through independent gas marketers/traders, as in the U.S. or (potentially) with AGAS in the UK.

3.5 In the short to medium term, we do not expect the impact of common carriage to be as great as some proponents or detractors appear to have been suggesting. Even if common carriage is not heavily used, however, there may still be advantages in the mere potential for competition to take place if this in itself causes modifications to restrictive or anti-competitive business behaviour. The Community as a whole will no doubt face far-reaching industrial and energy demand changes over the coming decades. In a general sense, therefore, it may be said that an open, flexible gas supply system is more likely to be beneficial than otherwise.

IV General assessment

4.1 If the European Commission does decide to pursue the introduction of a gas common carriage system, then it is important that the system proposed is as effective, fair and clearly defined as possible. In our view, this would require the Commission to:

- (a) define the nature of the common carriage obligation on owners of gas pipelines and related facilities to provide transportation and other services for third party users;
- (b) clarify the circumstances in which the obligation would apply, in terms of spare pipeline capacity and the projected demands of existing gas customers;
- (c) consider announcing any proposals well in advance and phasing in the obligation to carry gas for competitors (as opposed to gas in transit) over a period of years, in order to avoid creating undue uncertainty in the market and to permit an orderly transition to more open competition without prejudicing reasonable supply security;
- (d) consider a temporary derogation from certain common carriage obligations in the case of Member States at a very early stage of gas development, in order not to hinder the establishment of an adequate pipeline network;
- (e) consider establishing guidelines on what it would regard as a reasonable basis of charging for common carriage, in order to ensure that would-be direct buyers can assess the advantages of such arrangements before putting at risk their business relationship with existing suppliers;
- (f) distinguish in these charging principles between "firm" (year round) and interruptible services;
- (g) take into account the need for obligations and charging principles in respect of storage (load factor), quality adjustment and back-up gas supply services, as well as transportation itself;

- (h) consider an obligation on gas companies and others to "publish" plans for new pipeline development, in order to allow third parties' capacity requirements to be taken into account;

- (i) consider the regulation required to "police" a common carriage system, taking into account the complexity of the gas industry within the Community, the desirability of leaving a role for commercial negotiation and market forces and the need to avoid an over-rigid and bureaucratic regulatory regime which could bring considerable adverse side-effects in its wake;

- (j) develop internal policy positions in advance on a number of unfair competitive practices (such as predatory pricing or unreasonable refusal to provide carriage) and related sanctions, in order to ensure "fair competition" in the new environment and to permit a rapid response to the likely increase in complaints that would follow the introduction of common carriage; and

- (k) review the resources, expertise and procedures available to the Commission for regulating a more competitive gas industry and consider whether a special body with delegated powers is required to exercise this role. The Commission might also wish to consider the possibility of delegating some authority to the Member States, taking into account the need to ensure consistent application and enforcement of the common carriage system.

4.2 Our view is that a series of standard carriage tariffs is most unlikely to do justice to the complexities of the European gas supply situation and would probably lead to anomalies, inequities, protracted disputes and cumbersome over-regulation. We therefore recommend that carriage negotiations be left, as far as possible, in the commercial arena, with the Commission intervening in the event of abuse. On the other hand, an obligation to carry gas with no related guidelines on charging may well be ineffective - in that potential users would have no assurance of a reasonable deal - and would also raise the danger that ad hoc intervention could set inappropriate

general precedents. Our strong recommendation would therefore be that, if the Commission does want a gas common carriage system, it should ensure that clear, published principles are laid out in advance and that it is then equipped to apply and enforce these principles in a complex industry.

4.3 If the Commission wishes to pursue the introduction of a gas common carriage system - whether through new legislation or otherwise - we suggest that it should consider undertaking further studies to identify more precisely:-

- the various steps to be taken to introduce such a system;
- the appropriate nature of the legal and regulatory regime; and
- the institutional arrangements (including staff resources) required to apply the regime and resolve the disputes which would undoubtedly arise.

Table S1Advantages and drawbacks of common carriage for the gas industry and gas consumers

SMALL GAS CONSUMERS	Generally unable to take direct advantage of common carriage. Dependent for benefits on distributors buying direct and passing on part of any gains. May suffer adverse consequences if transmission companies who lose industrial load to competition seek to pass more costs on to smaller users.
LARGE INDUSTRIAL GAS CONSUMERS	Probably need to be very large to buy direct but could make use of independent traders (as in the US). Benefits depend largely on negotiating lower purchase prices or undercutting gas utilities' trading margins.
GAS-FIRED POWER STATIONS	Combined cycle plant especially well placed to buy direct (potentially high load factor, located on the high-pressure grid and able to commit to long-term contracts). The competition between gas utilities and direct suppliers is likely to put downward pressure on gas costs for generation.
GAS DISTRIBUTION COMPANIES	Poor load factor, little storage of their own, specific quality requirements, often bear limited price or market risk at present. Relatively few appear likely to be willing and able to buy direct.

Table S1 (ctd)GAS TRANSMISSION
COMPANIES

Threatened with loss of load to direct marketing or a reduction in margins. Danger of incurring gas purchase contract take-or-pay penalties is a particular threat. Nevertheless in a strong position to compete against new entrants and to adapt to carriage as a profitable activity if forced to do so.

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Opportunities limited for most producers (other than UK) as a result of limited exploration prospects, small fields and marginal economics. Common carriage may be more of a threat than an opportunity, though the advantages of secure indigenous supply and long term scope for tax regime changes if necessary make it unlikely that common carriage would seriously erode the level of Community gas production.

Table S2Particular factors influencing the impact of common carriage on different Member States

- BELGIUM: current tendency to over-supply makes Distrigaz vulnerable to loss of market to competition via common carriage. Slower than expected demand growth may mean some spare pipeline capacity available for direct sales. Intercom/Tractabel interests in both Distrigaz and distribution may make direct buying by distributors less likely. The USSR is not a Distrigaz supplier and is a potential source of direct sales to Belgian consumers.
- DENMARK: a large buyer may be necessary to justify a gas export link from Norway and this makes direct purchasing less likely. Dangas could conceivably try to sell direct to large industrial users who are currently supplied by the distributors.
- FRANCE: current tendency to over-supply makes GdF vulnerable to loss of load to competition from direct sales. Vertically integrated industry precludes direct purchasing by other utilities, except possibly Elf on behalf of SNGSO/CeFeM.
- GREECE: currently no natural gas industry, but plans to import from USSR and Algeria. Likely to remain geographically isolated from the rest of the Community gas grid for some time to come. Direct purchases by large consumers could damage gas industry development, though the strong role of the public sector currently makes direct buying unlikely.

Table S2 (ctd)

IRELAND:

currently isolated from other Member States' gas grids. Direct buying by consumers is rather unlikely. In the longer term, the common carriage option through Great Britain could give BGE a choice of imported gas suppliers (UK or Norway) in the event that indigenous reserves are not adequate.

ITALY:

strong state (ENI) involvement at all levels of the gas industry and in the power sector (ENEL) could make the use of common carriage less likely. Independent producers of indigenous gas might be interested to sell gas direct to consumers on the SNAM grid, but this would be small scale. Norway does not currently supply to Italy, but the distance may be a barrier to direct purchasing from this source.

LUXEMBOURG:

the main industrial consumer (the steel industry) participates in SOTEG and this makes direct purchasing less likely.

NETHERLANDS:

as an exporter, Gasunie is unlikely to make use of common carriage, since it is not looking to expand sales. Low cost Groningen production should enable Gasunie to compete with potential direct sales into the home market, provided the approach to gas pricing is flexible.

Table S2 (ctd)

PORTUGAL:	no gas industry as yet; the possibility of common carriage could pose a threat to its development, as additional market uncertainty would surround the substantial investment required in grid construction.
SPAIN:	the right of large users to buy direct could have a detrimental effect on a gas industry which is still in the fairly early stages of development.
UNITED KINGDOM:	common carriage system already exists and there are signs that some new gas-fired power stations and other industrial users may seek to buy direct. Common carriage elsewhere in the Community could make UK gas exports more likely in the longer term.
WEST GERMANY:	at the centre of the European gas grid. May be among the Member States most affected by common carriage, whether for sales into the West German market or for transit. High margin industrial users may be interested to explore carriage opportunities. Regional transmission companies might possibly buy direct if their existing terms of supply are not regarded as satisfactory.