

## ENERGY MARKETS : Liberalization of European Gas Markets

### INTRODUCTION

*This edition of ENERGY describes the current structure of European natural gas markets and the impact of the EU's new Gas Directive on transmission access. It outlines The Brattle Group's recommendations to the European Commission for the implementation of the directive and the creation of a competitive European market in natural gas. However, we omit many of the report's more detailed recommendations. The report is available in full from The Brattle Group's web site at [www.brattle.com/articles/method\\_gas\\_europe.pdf](http://www.brattle.com/articles/method_gas_europe.pdf)*

Natural gas markets across Europe face radical reform as a result of the European Union (EU) Gas Directive requiring Member States to open their markets to competition this year. *The Brattle Group* has recently produced a report for the European Commission that examines the principles embodied in the Gas Directive and their implication for liberalizing natural gas markets in Europe. The report, "Methodologies for Establishing National and Cross Border Systems of Pricing of Access to the Gas System in Europe," focuses on the importance of price and non-price terms for cross-border trade and the creation of a single, unified European gas market. It analyzes the fundamental principles of non-discriminatory tariff regimes and competitive markets in Europe.

Our analysis began by identifying a set of principles underlying the Gas Directive. Our report draws upon these principles to recommend detailed economic and financial concepts involved in service and tariff design. This article focuses on perhaps the most important principle of the Directive, that of *non-discrimination*.

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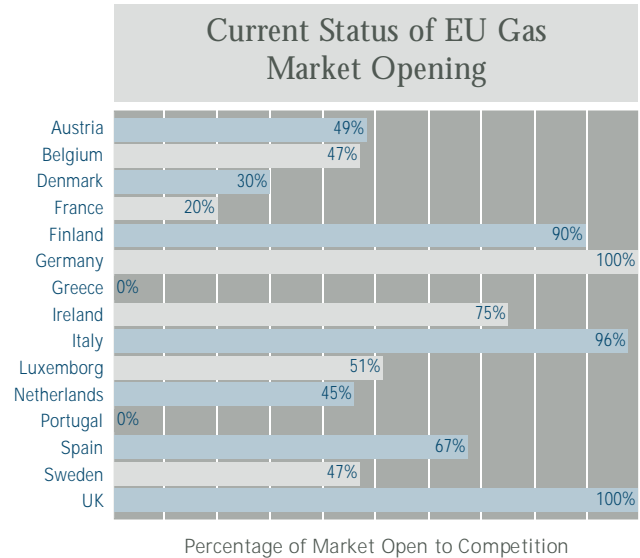
The Brattle Group consults on economic, financial, environmental, engineering, and management matters to corporations, law firms, and public agencies world-wide.

## EUROPE'S NATURAL GAS MARKET AND THE GAS DIRECTIVE

The European gas market was created on the basis of long-term take-or-pay contracts between upstream producers and national or regional monopoly incumbents, often state-owned. In most Member States the industry remains dominated by one or several vertically-integrated incumbent(s). Natural gas transportation services are still largely bundled with gas sales in these long-term contracts and cannot be transferred easily among market participants. Prices are set by reference to the cost of the customer's cheapest alternative fuel (heating oil for homes and heavy fuel oil for industrial users). Third-party access is rare. Because natural gas services are bundled, transportation services generally are not priced separately nor are prices derived from transparent tariff structures. Liquid secondary markets do not yet exist for pipeline capacity or for short-term gas sales.

The main exception is the United Kingdom, where Margaret Thatcher's government privatized and liberalized the industry beginning in 1986. Today the United Kingdom has a highly competitive market for supply, while transmission and distribution remain regulated natural monopolies.

The Gas Directive requires Member states to allow competition in gas supply by providing non-discriminatory access to third party shippers. While the details of liberalization are left for individual states to implement, the principle of *non-discrimination* is mandatory: pipelines may not discriminate between different parties wishing to use their services. In particular, pipelines are forbidden from favoring their own marketing affiliates. Because pipelines in most of Europe are vertically integrated, this is *the single most important challenge to liberalization*.

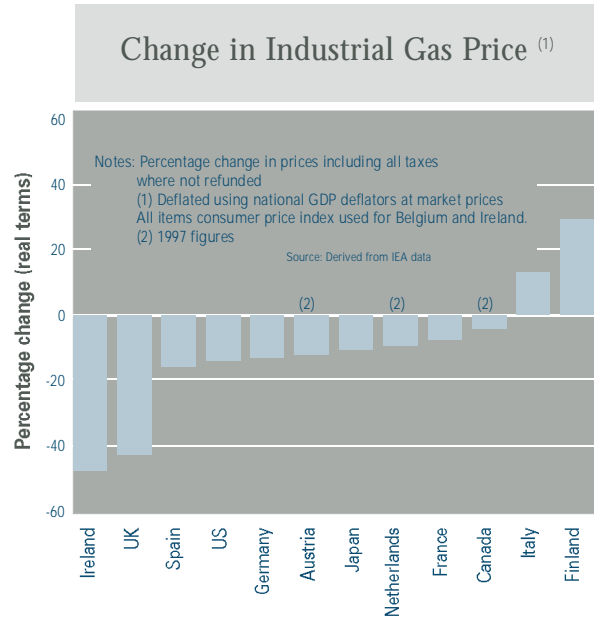
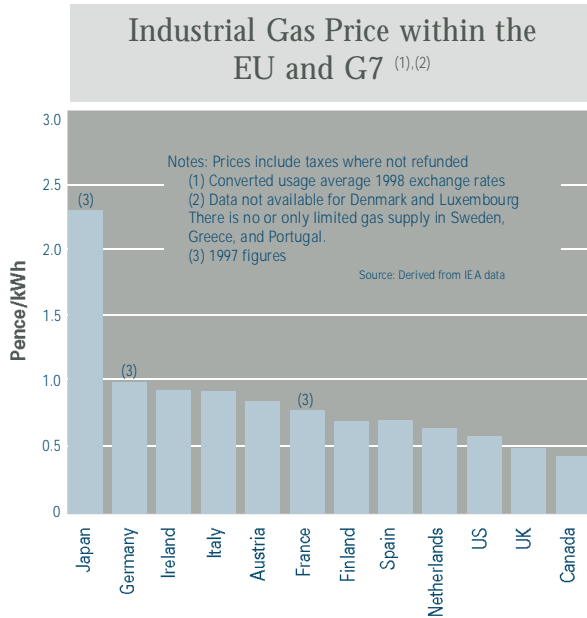


## NON-DISCRIMINATION

One key insight of the report is that discrimination should be interpreted in *economic* rather than purely formal terms. For example, very high charges for transportation that apply to both third-party users of the pipeline and the pipeline's marketing affiliate may not be discriminatory in a formal sense. However, in an economic sense they discriminate against third parties. For the affiliate, the high charge is merely a transfer to another subsidiary with a common owner. It is not therefore a genuine cost of doing business, but an accounting exercise. However, it does represent a genuine cost to the third-party. We recommend that such forms of discrimination be viewed as incompatible with the Directive.

A second and related insight is that discrimination in the natural gas industry may rely on providing different *services* to these entrants not on charging different *prices* to third-party entrants. For example, the incumbent may supply firm transportation to its marketing affiliate but threaten interruption or curtailment of third-party gas. We recommend that national authorities and the European Commission scrutinize rigorously the non-price terms offered to third parties by vertically-integrated incumbents.

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## NEGOTIATED ACCESS

A key provision of the Gas Directive enables Member States to choose between two forms of third-party access: “regulated” or “negotiated.” Under the latter procedure, the terms and price for third-party access to the system are set on the basis of “voluntary commercial agreements” between the pipeline and the party seeking access not by a regulatory authority. The pipeline is obliged to negotiate in good faith and to publish its main commercial conditions. Some states, most notably Germany, have chosen negotiated access.

Our report distinguishes two potential interpretations of “negotiated access.” Under the first, pipelines would have initial flexibility to design and negotiate price and non-price terms of access with customers. It would then publish the contract terms, which would define a set of “basic services” available to all third parties without subsequent negotiation. The pipeline would be required to apply the terms consistently to all parties, including its own affiliates.

The second interpretation of negotiated access is substantially different: the pipeline can negotiate each contract on a case-by-case basis, in a *laissez-faire* manner with few or no safeguards. There is no obligation to make available a standard set of “basic services” or to publicly publish contract terms in detail.

Our report argues that in a newly liberalized market the second interpretation is fundamentally incompatible with the principle of non-discrimination. Case-by-case negotiations are open to delay and abuse by incumbents seeking to protect their marketing affiliate from competition. For example, discrimination occurs if affiliates are able to gain access to the transmission system on short notice without having to bargain for particular terms of service, while third parties face delays and obstruction. Entry becomes impossible under such conditions, as was shown in the United Kingdom which initially adopted negotiated access, only to move toward a regulated system after many years of complaints from customers and would-be entrants frustrated by the obstructive tactics of British Gas.

## REQUIRED SERVICES

*The Brattle Group* report argues that pipelines should be required to provide firm capacity rights to all users (while respecting existing contracts). The failure to provide firm capacity is discriminatory when pipeline affiliates in practice enjoy such rights. International experience has shown that the failure to provide firm capacity entitlement impedes the development of liquid secondary markets in pipeline capacity.

Capacity rights should be allocated in a non-discriminatory fashion. We recommend a particular form of auction. Firm capacity rights should be freely tradable to respect the principle of non-discrimination. When the supply affiliate of a vertically-integrated pipeline company decides that it no longer needs capacity, the pipeline is free to resell the unused capacity to third parties. Third parties should have a commensurate ability to trade unused capacity. To avoid the potential abuse of commercially sensitive information, such trades should not require prior notification of the pipeline. Finally, it is important to note that the ability of third parties to purchase firm capacity rights is only meaningful if pipeline owners publish information on the extent of current and future capacity availability.

During the first few years of implementing the Gas Directive, firm capacity rights should be supplemented by “on-demand” interruptible service at reasonable cost.<sup>1</sup> Interruptible service maximizes system usage and is key for developing short-term markets. Additionally, it reduces the incentive to hoard firm capacity. Once liquid secondary markets have developed and matured, they will provide the same flexibility as “on-demand” interruptible service, eliminating the need to require pipeline owners to continue offering the service.

## PRICING OF SERVICES

Pricing of transportation services must exclude any element of monopoly profit to comply with the Directive and with European competition law. Our report proposes that the “NPV test,” routinely applied to regulated monopolies in several jurisdictions, be a fundamental requirement. The test would require pipeline tariffs whose aggregate revenues have an NPV that just covers the NPV of efficient operating costs, taxes, depreciation and a fair return on capital, but that does not contain any element of monopoly profit. This criterion should apply in both regulated – and negotiated-access regimes.

Pipeline tariffs must avoid discrimination and promote efficient cross-border transactions. *The Brattle Group's* report analyzes several different common systems of tariff design, such as postage stamp, zonal, entry/exit, and path-based tariffs. We conclude that no one approach automatically guarantees appropriate treatment of cross-border transactions. Each approach creates potential avenues for discrimination such as rate “pancaking” in the case of postage stamp and zonal pricing.<sup>2</sup> Instead, our report recommends that whatever methodology is chosen for pricing cross-border transactions, pricing should reflect the principle of “broad cost-reflectivity.” To avoid discrimination against cross-border gas flows, we recommend a specific process for Member states to follow involving the publication of information on different pipeline networks, the analysis of potential problems, and negotiations between interconnected pipeline networks to solve them.

## CONCLUSION

*The Brattle Group's* report concludes that the goals of the Directive involve a significant transition from the current state of most European gas markets. In this article we have focused on the implications for that transition of the principle of non-discrimination. To ensure non-discrimination, Member States must place limits on the discretion allowed for negotiation, at least until markets mature. They must require pipelines to make available to third parties the services typically provided to affiliates, including firm capacity rights and short-term interruptible service. They cannot allow transportation tariffs that produce monopoly profits, and they must ensure that the locational signals provided by different tariff systems are at least broadly cost-reflective.

## ENDNOTES

- 1 Under an "interruptible service" agreement, the pipeline agrees to transmit a party's gas provided there is sufficient capacity available. However, unlike firm service, the pipeline provides no guarantee of availability. Interruptible service may also be provided with some specified probability of service availability.
- 2 Rate "pancaking" is the accumulation of charges analogous to the staking of a pile of pancakes on the plate. Typically, cross-border trades are vulnerable to rate "pancaking" due to the existence of separate and distinct tariffs in each country that result in an aggregation of charges for transactions that flow through both countries.

### *THE BRATTLE GROUP'S* NEWSLETTER SERIES

Our newsletter series includes the:

- ENERGY newsletter, which discusses current issues in energy markets and regulation;
- ECONOMICS newsletter, which focuses on current topics in economic litigation and strategy, such as the estimation of patent damages; and
- ENVIRONMENT newsletter, which reports on issues in environmental litigation.

For more information on any of these newsletters, please contact us at [publications@brattle.com](mailto:publications@brattle.com).

## MARIUS SCHWARTZ JOINS *THE BRATTLE GROUP* AS SENIOR ADVISOR

Dr. Schwartz is Professor of Economics at Georgetown University with research interests focused on antitrust and regulation. He has worked as an expert on a variety of matters, especially involving the telecommunications industries, for the Department of Justice, international agencies, and private clients. Dr. Schwartz recently served at the Antitrust Division, U.S. Department of Justice, as Acting Deputy Assistant Attorney General for Economics and as Economics Director of Enforcement. In these positions, he was responsible for overseeing the Division's economic analysis of numerous mergers and business practices in various industries. Major matters included: the Ameritech-SBC, Bell Atlantic-GTE, Aetna-Prudential, and MCI/WorldCom-Sprint mergers; the AT&T-BT international joint venture; the American Airlines predatory pricing claims; and Bell entry into long-distance telecommunications services. As former Senior Economist on President Clinton's Council of Economic Advisors during the 1995-1996 academic year, he was responsible for industrial organization matters, including the Telecommunications Act of 1996, competition in international telecommunications services, and electric industry restructuring.

## *THE BRATTLE GROUP* IN IRELAND

*The Brattle Group* has recently completed a major report for the Irish government's Department of Public Enterprise. The report makes comprehensive recommendations concerning third-party access tariffs for natural gas transportation and a system of authorization for new pipelines. Due to its current extraordinary economic growth, Ireland faces rapidly rising demand for natural gas and urgently needs new infrastructure. Our recommendations on authorization facilitate competition in the provision of new infrastructure by ensuring a level playing field between potential entrants and the incumbent national utility Bord Gais. We also propose a geographically determined "public service levy" that allows Bord Gais to sustain its policy of a geographically uniform ("postage stamp") tariff while avoiding any distortion of competition. The report has been published by the Irish government and can be downloaded from *The Brattle Group's* website at [www.brattle.com/articles/irishreport.html](http://www.brattle.com/articles/irishreport.html).

## RECENT *BRATTLE* PUBLICATIONS

Members of *The Brattle Group* have recently published several articles on topics of interest to energy specialists.

- Dealing with a Price-Spike World
- Monopoly Power After Reform? A Time for Soul-Searching
- Setting Stranded Cost for Retail-Turned Wholesale Customers: Why FERC Needs to Change Its Approach

If you would like a copy of any of these articles, please contact us at [publications@brattle.com](mailto:publications@brattle.com).

### Next Issue: COST OF CAPITAL FOR GAS PIPELINES AND ELECTRICITY TRANSMISSION

The risks associated with transporting gas and electric energy from source to sink are increasing as these markets become further deregulated. Our next issue discusses the issues that have arisen in recent gas pipeline and electricity transmission cost of capital cases.

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