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Viewpoint

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Regulation in New Natural Gas Markets—The Northern Ireland Experience

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So far gas market liberalization has generally occurred in mature markets—particularly where much of the pipeline system has already been laid, as in Argentina, Britain, and the United States. In these cases a competitive structure is appropriate. In new markets, however, it may be difficult to introduce a competitive regime from the outset, and a different approach and form of regulation, such as a period of exclusive licenses, may be needed.[1] In 1997 the Northern Ireland authorities awarded Phoenix Natural Gas an exclusive license for a limited period to develop a new gas market from scratch in the greater Belfast area. This Note explains the rationale for a period of exclusivity and describes Northern Ireland's approach to gas market regulation.

The Northern Ireland authorities had been eager to develop a natural gas market, both for environmental reasons and to make the province more attractive to foreign investors. Their effort was triggered by the conversion to natural gas of a power plant in Northern Ireland, with commissioning in 1996. The plant was owned by British Gas (now BG), and the gas is transported from Britain by a subsea pipeline. This pipeline provided an opportunity to deliver natural gas to homes and industry.

To take up this opportunity, a license for natural gas for the greater Belfast area was granted to Phoenix Natural Gas in a tender limited to only one other candidate. Phoenix was originally a 100 percent subsidiary of BG, though Keyspan Energy now has a 24.5 percent shareholding. Phoenix was granted a combined license for transport and supply, but different approaches were used for the two activities. An exclusive transport license lasts twenty years, but competition in supply will be allowed after only two to eight years.

Northern Ireland contains 600,000 households, with just over 250,000 in the greater Belfast area. The economics of supplying gas to areas outside Belfast are difficult, though better opportunities may develop. Indeed, in a new gas industry it can be argued that the initial development license should be granted only for part of a region or country. In that case it may be best to develop the network as a series of regional franchises. That way, two or more licensees will be well placed to compete in each other's areas once the industry matures.

Monopoly in transportation

The authorities accepted British Gas/Phoenix's argument that a long (twenty-year) transportation monopoly period was needed to attract an investor into the market. The necessary investments appeared to British Gas/Phoenix to be fairly marginal. Major marketing risks stemmed from having to displace coal, liquefied petroleum gas, and oil in the residential market and from the dependence of Phoenix on the decisions of a single body, the Northern Ireland Housing Executive, the public housing authority that owns more than a quarter of the houses in greater Belfast. There were also substantial technical and

financial risks. The authorities decided that all these risks would be compounded if multiple infrastructure licenses were granted.

The authorities also agreed with British Gas/ Phoenix that a single license would have other advantages. A single developer is more likely to develop an optimal, well-designed "backbone" network (avoiding, for example, multiple pipes and wires running down the same street). And a single developer is easier to deal with in terms of granting approvals, planning traffic, making contingency plans, and providing local authority support services.

Development obligations

One of the authorities' primary goals was to secure the construction of an extensive natural gas pipeline system in Belfast. Thus investment obligations were a key part of the license. Several challenges arise when an investment program is expected of an exclusive licensee: how to ensure that the investment takes place, what sanctions to put in place if it does not, and how to deal with unforeseen circumstances.

The license requires Phoenix to complete its network in twelve years and to perform the work in each of Belfast's twelve districts in a specific order, within a specified timeframe. Moreover, a pipeline must run within 50 meters of 90 percent of the homes in each district. This was a much more detailed blueprint than Phoenix would have liked. Phoenix argued that it already had major sunk investments—in medium- and high-pressure pipelines—and so had the necessary commercial incentives to connect up the maximum load. The detailed blueprint created a risk that Phoenix will fail to meet its obligations. Two safeguards for Phoenix reduce but do not eliminate the risk:

- The regulator can agree to changes in the order and dates of pipeline construction if there are good reasons for doing so.
- Phoenix does not have to lay pipes past housing that the Northern Ireland Housing Executive had not converted to, and does not intend to convert to, natural gas.

If Phoenix does not meet its obligations, it will lose its exclusive license in the districts where it fails. Thus other companies could then be granted transportation licenses.

Transportation charges

From the outset Phoenix has maintained separate charges for the use of the transport network by gas suppliers and for the supply of gas to final customers. Until competition is introduced, the transport charge will simply be a transfer price between Phoenix's distribution and supply businesses.

Both Phoenix and the authorities recognized that the price to final customers would have to be kept low for many years to persuade customers to switch to gas and that the overall costs of supplying gas would be dominated by the transport charges. Thus the debate over pricing focused on the transport charges; the supply prices were less contentious.

Standard approaches to setting transport charges are not appropriate for a new industry. The regulatory asset base starts from zero, changes rapidly, and is unpredictable. If charges are based on a return on assets, they would be exceptionally high at the outset (because of low utilization) and would change sharply from year to year. Thus it was decided to set transport charges at a level that is expected to provide an 8.5 percent real pretax return on cash flows over twenty years, with calculations based on forecast capital and operating costs, sales levels, and mix of sales. Phoenix considered this return rather low given the risks involved in the project. But there was some upside from the prospect of additional transport revenue after the initial twenty-year license period. The big question mark was the enormous uncertainty about all the forecasts. To address this uncertainty, it was agreed that there would be a reforecast every five years, with one possible additional forecast in the initial five-year period. Under these reforecasts the previous five years will be "water under the bridge"—that is,

Phoenix will retain any gains and bear any losses if developments differ from what was forecast. Thus there are incentives for efficient and rapid market development. However, prices for the remaining period of the license would be adjusted in light of changes in the forecasts so that the net present value over the remaining period, given the new forecasts, would be the same as in the original net present value calculations.

One of the most controversial issues in the negotiations over transport charges was how to deal with changes in the distribution of gas sales among market segments and with the effects of such changes on costs and average prices. In addressing these matters the authorities wanted to prevent excessive profits for Phoenix, but also to provide incentives for rapid development of the network and market.

Competition in supply

In a mature utility industry it is generally desirable to separate the transport business and the supply business, as there is different scope for competition and different competitors in the two sectors. In a developing industry, however, too strict a separation is undesirable. For example, the transport arm and the supply arm should plan an integrated rollout of the network to avoid major cost inefficiencies. That process involves information sharing and cooperation that might be unacceptable in a mature industry. Moreover, the cost allocations between infrastructure and marketing are blurred in the early days of a new industry.

Phoenix will face competition in supply in domestic and small industry markets (less than 2.2 million kilowatt-hours a year) in late 2004. Given that customers are being connected gradually over the eight-year exclusive license period, the average monopoly supply period for these customers will be four to five years. The monopoly period is shorter for larger industrial customers—from two to three years, with each district opening up to competition on a rolling basis.

The scope for competition may be limited given the small or nonexistent margins between transport and supply charges for many years. Still, Phoenix wanted an initial exclusivity period. The company was concerned that potential competitors would protest and that the authorities would take action if competition did not develop when it was permitted on paper. In the end the exclusivity periods agreed on were quite short—partly because the rest of the United Kingdom has competitive gas markets.

Prices to final customers

A key challenge for the new gas industry is to win customers who are using competing fuels. The gas industry sometimes argues that it needs neither regulation nor gas-to-gas competition because there is strong competition between fuels. In a mature market with many gas customers, interfuel competition may need to be supplemented, especially in the residential market. But where a gas industry is being established, the industry's argument is valid.

Thus in Northern Ireland there is no regulation of gas prices to consumers, other than rules barring discrimination, for the first five years of the license. After that the regulator can introduce a price formula if he decides that customers' interests are not adequately protected by competition between fuels or within the gas market. This regulation applies only to consumers using less than 2.2 million kilowatt-hours a year; larger industrial customers are not subject to regulation of final prices.

The license sets out extremely broad principles for determining prices to customers if and when regulation is introduced. Moreover, there is a provision for a ruling by the Monopolies and Mergers Commission if the regulator and licensee cannot agree on prices.

Cooperative approach to regulation

The former regulator for electricity in Northern Ireland has become the joint gas and electricity

regulator. But for several reasons the common adversarial approach to regulation is inappropriate in the new gas market. The uncertainty and pace of change mean that the ground rules will change rapidly—both sides need to recognize this. The lack of an asset base and the absence of "entrenched" high operating costs will also affect the regulator's approach. In any case the normal regulatory battle—where the regulator wants low prices and the company wants high profits—will likely be replaced in the early years by a major shared objective: both sides want rapid penetration of the market. Furthermore, at the initial stages the fledgling industry will be a small or medium-size company and should not be burdened by unnecessarily high costs of funding the regulator's office, staffing a big regulatory affairs team, and funding inquiries from the Monopolies and Mergers Commission.

Conclusion

A lack of good precedents and credible competing offers made negotiations over the gas license unusually difficult in Northern Ireland. For good reasons, the approach taken to choosing the licensee was partly but not fully competitive. In some circumstances a more competitive process might be better. Still, the license that emerged may be useful for anyone working on the regulation of new gas industries.

In the two years since license discussions were concluded, Phoenix has completed the initial development of its network, meeting all regulatory targets and overcoming some inevitable difficulties. Moreover, Phoenix's gas prices have been lower than was anticipated.

Still, the market has posed some tough challenges. Competing fuel prices have been low (especially for oil), and threatened competitors, especially in residential markets, have fought back. The Northern Ireland Housing Executive, which had needed to demonstrate impartiality between fuel suppliers, has only recently announced that natural gas is the preferred fuel. As a result fewer of the executive's properties have been refurbished with gas than was expected. There has also been a shortage of appliance retailers and, more important, qualified installers.

It is still early days, but so far it has been the market rather than regulation that has had the major impact on the development of the Northern Ireland gas industry.

This Note has been prepared with the help of Gearoid Lane, Chris Murray, and Martin Plackett of Centrica, United Kingdom.

The European gas directive, which provides separately for emerging markets, recognizes this.

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