

REGULATORY REGIME FOR THE GAS SECTOR

A Smith

Energy Policy, Ministry of Commerce
5th Floor, 33 Bowen Street, Wellington

Abstract

As in many parts of the world, the New Zealand gas industry was subject to State intervention, both through ownership and heavy regulation. Policies of recent Governments have been for the State to withdraw from ownership of gas enterprises, and where possible remove regulations so as to open the industry up to greater competition. A new "light-handed" regulatory regime is now being introduced which is designed specifically to deal with the problems associated with those parts of the industry where there is limited scope for competition — in access to pipelines and the pricing of gas transmission and distribution. The new approach is seen as having the potential to bring significant long run advantages to both producers and consumers of gas.

Introduction

The energy sector has been undergoing some major changes recently. This paper focuses on changes to the regime of economic regulation applying to downstream gas markets. It will not deal with the regulation of petroleum and gas mining and exploration, nor with safety regulation.

The paper discusses three main themes:

- the history of the gas industry in New Zealand
- the reforms which the industry has been undergoing and the general nature of the new regulatory regime which is being introduced
- the future of the gas industry, in terms of its development and the regulatory framework within which it will operate

History of the Gas Industry

Coal gas plants were established in New Zealand in the 1860s. By 1915 there were 56 such plants operating in urban areas. From then on the number of such plants declined, although the volume of gas supplied still tended to increase with increasing industrial demand. From 1915, gas faced increasing competition from electricity as a supply of energy.

After World War II there were electricity shortages, and this raised concern about the security of the energy supply in general. There was special concern about the continuing loss of domestic consumers of gas. In response, in 1958 a Gas Council was established to arrest the decline in the domestic consumption of gas. This Council operated by dispensing various government-funded subsidies to the gas industry.

In 1959 the Shell/BP/Todd oil consortium discovered the Kapuni natural gasfield. The consortium viewed reticulation of this gas to population centres as uneconomic and proposed to supply the gas to the then Electricity Department for the generation of electricity. A Government enquiry ensued, coming to the conclusion that the gas would be more efficiently used if reticulated for direct use. The result was the establishment of the state-owned Natural Gas Corporation (NGC) to accomplish this. NGC put in place treatment plant and pipelines to supply the natural gas to Auckland and

Wellington, and a number of localities in between. Natural gas supply to these centres started in 1970 and 1971.

In 1969 the Maui field was discovered, again by the Shell/BP/Todd consortium. On discovery it was one of the largest known gasfields in the world. In the years immediately following its discovery, energy use internationally was growing rapidly and there was increasing concern about the adequacy of the energy supply generally to meet world demand, and concern about the security of oil supply in particular. It was in this international context, together with electricity shortages in New Zealand in the early 1970s, that the Government was keen to see the development of the Maui field. The outcome was that in 1973 the Government entered into a 50:50 joint venture arrangement with Shell/BP/Todd to develop the field, and the Government also made contractual undertakings for purchasing all the gas.

About half the gas from the Maui field was allocated to the Electricity Department for electricity generation. In addition the Government arranged for NGC to have access to a portion of the gas and NGC expanded the reticulation of natural gas to further areas in the North Island. NGC then supplied gas to other local gas utilities as well as a number of direct users.

There was good reason for New Zealand to be concerned in the early 1970s with security of supply of oil (in effect self-sufficiency in energy) since the oil market was beyond New Zealand's control. This was amply demonstrated when, in October 1973, the Organisation of Arab Petroleum Exporting Countries announced a reduction in production. Between 1 January 1973 and 1 January 1974 the international posted price for Arabian light crude rose from US\$2.59 per barrel to US\$11.65. It was in response to this situation that the Government undertook a detailed examination of alternative uses for the Maui gas, aimed particularly at providing increased self-sufficiency in liquid fuels. The result was a decision to build a synthetic petrol plant that would consume about 60 PJ of gas per annum. In addition, the Government decided to reduce the allocation of gas to electricity generation, and allocate some gas to the manufacture of

petrochemicals (chemical methanol and ammonia/urea) with the aim of achieving export earnings. The prime factor leading to much of the Government involvement in the New Zealand gas industry was concern about security of energy supply. The development of Maui by providing gas as a substitute for oil in electricity generation, and gas to convert into synthetic petrol, allowed New Zealand to insulate itself to some degree from international oil market disruptions.

The story is thus one of major Government involvement in the gas industry with much of this involvement through state-owned enterprises such as NGC. In the post-war period through to the early 1970s there was a prevalent international view that large-scale enterprises required government financing. Also monopolies were considered to be best owned by the government, rather than being privately owned and then regulated. This view was evident, for example, in the widespread nationalisation which took place in the UK. Successive New Zealand governments' efforts in fostering the development of the local gas industry were thus consistent with the contemporary heavy involvement of governments worldwide in large infrastructural developments generally, and energy industries in particular.

It is interesting to observe that up until the 1970s there was heavy reliance on price control in energy markets both in New Zealand and overseas. There seemed to be a widespread view that energy consumption was unresponsive to price and therefore it was necessary to control the price in the interests of consumers. However, the suppression of prices and resultant rapid growth in demand no doubt led to much of the concern with security of supply.

Following the oil price shock of 1973/74 and the later one in 1979, governments both in New Zealand and overseas found that even with the institution of various rationing measures, they could not shield consumers entirely from rising prices. It eventually became clear that consumers did reduce consumption in response to the higher prices and this gave the lie to the contention that energy consumption was insensitive to price. Today it is much more widely accepted that, even for energy, markets can utilise the price mechanism, to ensure that supply matches demand.

Disruption to international oil supply is clearly still possible. However, international oil markets are more sophisticated than in the 1970s and energy self-sufficiency is now of much lower priority to New Zealand due to the activities of the International Energy Agency (which can make arrangements for the sharing of supplies between member countries, that is the major oil using nations, in the event of an emergency). The recent Gulf crisis was accommodated by user nations with relative ease. As a result a present day government would have much less incentive, on the grounds of security of supply or self-sufficiency, to enter into the kind of arrangements made for Maui.

It is also interesting to note the interplay between government involvements with different parts of the energy sector. Part of the reason that electricity had an advantage over gas was because hydro developments, particularly after World War II, were government subsidised. Had this not occurred, the relative growth in electricity demand (and electricity shortages) may have been less, with gas taking a larger share of the energy market. Thus the result was that government intervention in the electricity market led to a requirement for intervention also in the gas market if there were to be redress of the imbalance.

The Reform

So what was the state of the New Zealand gas industry in the mid-1980s?

The Government had retained its 50:50 interest in the Maui field. It had also contracted for all gas from that field through its wholly owned state-owned enterprise, Petrocorp. Either directly, or indirectly through Petrocorp, it was in effect, the sole decider of the allocation of gas at the wholesale level. The single largest portion of gas was allocated to the Electricity Division of the Ministry of Energy for electricity generation, a lesser portion being allocated to Petrocorp subsidiaries for petrochemical manufacture. The Natural Gas Corporation (NGC), now part of Petrocorp, was the only supplier of gas to the reticulation market, with itself a distributor in some areas, and on-selling to other firms distributing in other franchise areas. Around 1984/85 the allocation of gas to markets was approximately as follows (small amounts allocated to LPG production and other purposes have been excluded):

- electricity generation 50 PJ pa
- reticulation market 35 PJ pa
- methanol and ammonia/urea production 20 PJ pa

The synthetic petrol plant began production in October 1985 and this took increasing quantities of gas.

In the mid-1980s there was increasing concern in New Zealand with the performance of the New Zealand economy as a whole, and of certain industries in particular, especially those owned and operated by the government. This led to major moves for reform of telecommunications, post, rail, ports, airlines, shipping and other services as well as the electricity, coal and gas industries. The main thrusts of the reform were:

- To move State trading enterprises away from direct Government involvement into state owned enterprises (SOEs) to be operated as commercial entities. In this way their operations would be more transparent and they would become more accountable for their performance.
- To consider SOES for privatisation where there were not over-riding reasons for public ownership. Private ownership would in particular introduce capital market pressures leading to more efficient investment, and in some cases more efficient performance.
- To move away from price control and place greater reliance on price signals from the market providing the appropriate balance between supply and demand.
- To undertake regulatory reform to facilitate the development of competition which would produce incentives for achieving gains in both operational and investment efficiency.

In the UK too, somewhat similar thinking had developed, with moves toward privatisation of nationalised industries. In the US there were moves toward deregulation to foster competition in certain industries such as the airlines, railways, road freight, and telecommunications, as well as natural gas. New Zealand has, nevertheless, been at the forefront of these kinds of moves.

In the mid-1980s, Petrocorp was already a de facto state-owned enterprise. However, it formally became one when the State Owned Enterprises Act took effect from 1 April 1987. Later in 1987 the Government sold approximately 30 per cent of the shares in Petrocorp to various private parties. And in March 1988 the whole of Petrocorp was sold to

Fletcher Challenge Limited (with the existing private parties being bought out).

In July 1990 the Crown concluded a number of new contracts through which it effectively withdrew from the gas market. The result of these contracts has been that there is now a series of entitlements to Maui gas by three parties that carry through to beyond 2000. The three parties are Methanex NZ Limited (gas used in synfuels and petrochemical manufacture), the Electricity Corporation of New Zealand (ECNZ) and NGC. Of all gas produced (of which some 74 per cent is currently from Maui) it is used (very approximately) as follows:

- electricity generation 60 PJ pa
- reticulation market 40 PJ pa
- methanol, ammonia/urea and synfuels production 90 PJ pa

Most of the gas was allocated to the electricity and petrochemical markets (including synfuels) where it was tied up on long-term contracts and where, given the sunk investments in place, there was little prospect of economically efficient competing uses or users. Although the reticulation market was much smaller, it was this market with its high value uses which had the longest assured future, and it was decided that this market should be the focus of regulatory reform.

In the Energy Companies Act 1992 the Government introduced legislation which required the gas trading enterprises of local authorities to corporatise their activities. This initiative, designed to introduce commercial incentives and accountability, could be seen as a move at the local government level analogous to the establishment of SOEs at the national level.

The Gas Act 1992 provided the main vehicle for introducing a package of major economic regulatory reform (as well as safety reform). The first element of this package was deregulatory while the second was regulatory.

The deregulatory element had two components. The first of these components was specifically designed to facilitate the development of competition within the downstream gas industry, where possible. In principle, the production and wholesaling of gas are considered to be potentially competitive. The transmission and distribution of gas through local reticulation lines are, on the other hand, considered to have natural monopoly characteristics. While there were not considered to be undue legislative barriers to competition in production and wholesaling, the distribution area franchises clearly impeded retail competition. The Gas Act 1992 abolished the area franchises as of 1 April 1993, and in conjunction with this the obligation to supply was removed.

The second deregulatory component was to remove from 1 April 1993 price control that had, in the latter years, been exercised by the Commerce Commission under the Commerce Act. Up until then both wholesale and retail prices of gas had been controlled. Retrospectively, the control seems to have been undesirable since it amounted to a cost plus type of control. This would have been particularly inappropriate for the future when depletion of the Maui field will almost certainly require higher prices to provide the right signals for further exploration and development. In addition, at the wholesale level actual prices (not maxima) were set. This could clearly impede the ability of the gas industry to respond flexibly to competition from electricity.

The second element of the reform package, the regulatory element, was aimed specifically at the natural monopoly parts of the industry, that is the operation of transmission and distribution lines. There are three types of problems with natural monopolies. First, if unregulated they have the ability to set their own prices. Indeed the theory is that left to their own devices they will operate to maximise their profit and the pricing that will achieve this (monopoly pricing) will be above the economic optimum, thus leading to economic losses to the community at large. In this case, users of transmission and distribution lines would be faced with prices such that they would be unduly deterred from using the lines. Secondly, owners of natural monopolies have the ability to use profits from the natural monopoly to cross-subsidise other enterprises which they own. These enterprises can then undercut competitors in their markets, reducing or eliminating competition, and thereby limiting the efficiency gains which can arise from competition. Thirdly, owners of gas line facilities may apply discriminatory access terms to their lines which favour their own gas production, wholesaling or retailing businesses. In this way competition in these potentially competitive activities could be reduced or eliminated.

With the removal of price control there was the possibility that these problems would manifest themselves. Also with the transfer of the transmission network to private ownership and the establishment of the local distribution concerns as corporate entities, the incentives for abuse of monopoly power were increased.

The Commerce Act 1986 contains anti-competitive provisions which bar firms from engaging in activities such as setting prices or access provisions for lines with anti-competitive intent. In addition the Commerce Act contains provisions under which price control can be introduced for goods or services where there is limited competition; the provisions under which the previous price control had operated. The anti-competitive provisions might be seen as providing the requisite safeguard against anti-competitive pricing or access. The price control provisions might be viewed as providing a sufficient threat of re-regulation should the firms operating the line businesses engage in monopoly pricing.

However, the view was taken that given overseas experiences, and experiences with other industry parallels (in particular with the telecommunications industry) further regulatory safeguards were justified. The Government decided that these safeguards would be provided by introducing a regime of so-called "light-handed regulation". The key elements of this were to ring-fence the transmission and distribution line businesses, requiring separate financial accounts and extensive disclosure of price and cost information for these businesses.

The transparency afforded by the information disclosure regime will assist users of line services in negotiating their own access terms and conditions, and facilitate recourse to the Commerce Act in the event of any indications of anti-competitive practices. For example, a line owner will need to offer terms and conditions for access to any party similar to those they offer their own related businesses if they are to avoid complaints to the Commerce Commission and possible court action under the Act.

The advantages of the light-handed approach over explicit price regulation are seen as:

Author

ANDREW SMITH has been Manager of Energy Policy in the Energy and Resources Division of the Ministry of Commerce since 1989. As such he has been responsible for policy for both electricity and gas industry reform, petroleum markets, energy security, and the environmental impacts of energy use. He has also been responsible for the energy forecasting work which the Ministry has been engaged in since 1990.

Early in his career he worked in the coal industry in the United Kingdom, being involved with operational research and planning for coal production and marketing activities, before coming to New Zealand in 1974. From 1974 he was head of the Operational and Economic Research Unit in the Department of Health being responsible for a range of work examining the delivery of health services and developing hospital and health board funding systems. In 1984 he returned to the energy sector, joining the Planning Division of the Ministry of Energy where he was involved in energy planning, and was also responsible for some of the early electricity reform work.