

# Changing Energy Sector- a Co-regulatory perspective

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## Introduction

There has been a lot of talk in energy circles about change in the electricity and gas sectors. We agree with Keith Turner's comments at the recent National Power Conference that the one thing that is constant about this sector is the continuous nature of change.

This paper reflects on the recent changes to the Government's policy objectives and the implications of those changes for both the industry and for Gas Industry Company as the industry-specific regulator. It begins by restating the role of the Company and providing an update on its work streams.

## Role of industry-specific regulation

Gas Industry Co is a company owned by industry shareholders which has a mix of industry and independent directors (and an independent Chair). It has been approved by Order-in-Council as the co-regulator of the gas industry. Approval gives it the power to make recommendations on a range of gas governance matters to the Minister of Energy. Approval also gives it the power to recover its costs by way of a statutory levy.

The co-regulatory model is unusual. Its key features are:

Co-regulatory model
<ul style="list-style-type: none"><li>• The Minister has the power to pass rules and (with the approval of cabinet) regulations on a wide range of matters affecting the gas supply chain;</li><li>• In some areas the Minister's powers are restricted by a requirement, that the Minister first receives a recommendation from the Gas Industry Co, on the form of those rules or regulations; and</li><li>• Gas Industry Co also has restrictions on its work. It is required to follow certain process requirements and to have regard to the objectives set out in the Gas Act when making recommendations to the Minister.</li></ul>

Figure 1: Co-regulatory model

The process requirements in the Gas Act include consultation obligations and requirements to consider other reasonably practicable options (including non-regulatory arrangements) as well as undertaking cost benefit analysis on the preferred options.

The policy objectives Gas Industry Co must consider when recommending rules or regulations for wholesale market processing facilities, transmission and distribution of gas are set out in Figure 2 below.

<b>Gas Act objectives</b>
<p>Principal objective</p> <p><i>“To ensure that gas is delivered to existing and new customers in a safe, efficient, and reliable manner”.</i></p> <p>Other objectives The facilitation and promotion of the ongoing supply of gas meets New Zealand’s energy needs, by providing access to essential infrastructure and competitive market arrangements;</p> <ul style="list-style-type: none"><li>• Barriers to competition are minimised;</li><li>• Incentives for investment in gas processing facilities, transmission and distribution, energy efficiency, and demand-side management are maintained or enhanced;</li><li>• Delivered gas costs and prices are subject to sustained downward pressure;</li><li>• Risks relating to security of supply, are properly and efficiently managed by all parties, and</li><li>• Consistency with the Government’s gas safety regime is maintained.</li></ul>

**Figure 2: Gas Act objectives**

The Gas Act also permits the Minister to add new objectives and outcomes for the co-regulator to consider. This is done by the issue of policy statements. The current Policy Statement on Gas Governance (GPS) was issued in October 2004. It adds fairness and environmental sustainability to the statutory objectives and requires Gas Industry Co to consider these policy objectives in all its work not just regulatory recommendations. The October 2004 GPS, also sets out a long list of tasks for Gas Industry Co to pursue and report against.

## **Work stream updates**

Those tasks constitute our current work programme. They can usefully be grouped into work streams which:

- Enhance access to key infrastructure;
- Improve efficiency of wholesale and retail markets;
- Ensure optimal outcomes for consumers.

This work is required to support the industry in its transition to a fully competitive market environment.

## Infrastructure access

The GPS invites Gas Industry Co to develop protocols that set reasonable terms and conditions for access to gas processing facilities. Following extensive research, the company concluded that the case for regulating access was not very strong and that the costs may exceed the benefits. It therefore recommended an intermediate step, namely the mandatory disclosure of information about surplus capacity. This will enable us to monitor the efficacy of the gas processing market with a view to making a future recommendation on whether there is a need to regulate access. A recommendation to this effect went to the Minister in February of this year and is currently being considered by officials.

The second part of our infrastructure work relates to access to pipelines. In the last two years Gas Industry Co has undertaken an extensive review of the open access arrangements which exist in New Zealand. We consider that a number of improvements need to be made to the existing arrangements to ensure all shippers can achieve access on reasonable terms and conditions. The company has published a number of papers and consulted widely, but the work is still incomplete. Our current plan is to make recommendation to the Minister early in 2009 following further consultation with the industry in the balance of the year.

October 2004 GPS task	Current Gas Industry Activity	Likely Results
Access to gas processing facilities.	Recommendation for information disclosure only.	Improved transparency of information relating to availability of surplus gas processing capacity.
Recommendation made in February 2008		
Developing and implementing improved transmission arrangements.	Developing new regulatory framework.	Transmission access available to new and existing shippers on reasonable terms and conditions.
Recommendation expected early 2009		

**Figure 3.**

## Wholesale markets

The decline of the Maui gas field and the development of a more fragmented range of gas producers and fields have contributed to a need for the development of more sophisticated arrangements for the trading of gas in the wholesale market.

Gas Industry Co.'s research has indicated some inefficiencies in the markets for short term quantities of gas including high transaction costs. We have therefore developed a standard contract to be used for ad hoc bilateral trading between parties. This was released to the industry in April 2007.

We are currently in the process of putting in place a simple IT platform to facilitate efficient trading of gas using a version of this standard contract. This will be introduced as a trial, which we expect to start in the next few months.

The changing gas markets have also necessitated a review of the current gas contingency arrangements. This work was originally initiated at the industry's request, but is consistent with the objectives and outcomes set out for the co-regulation in the Gas Act and Gas GPS. The current arrangements are voluntary. We are preparing a new set of mandatory arrangements and aim to make a recommendation to the Minister on these in the middle of the year.

October 2004 GPS task	Current Gas Industry Activity	Likely Results
Improvements to wholesale gas trading.	Standard contracts developed last year.  New trading platform being trialled.	Will reduce transaction costs for short term contracts and improve information transparency and efficiency.
Platform design completed  Trading platform "go live" June 08		
Establishing sound emergency management arrangements.	Finalising new regulations following consultation with Industry and MED.	Provides certainty in contingency event and an improved interface with transmission codes.
Recommendation for Minister planned for June 08		

**Figure 4**

## Retail market

Gas Industry Co is also involved in a number of work streams affecting the retail gas sector. In February the Minister accepted our recommendation for new switching rules based around a central registry. We are now working with the industry to implement the new arrangements for a 'go-live date' of 1 March 2009.

Later this month we expect to recommend new arrangements for downstream allocation and reconciliation. Downstream allocation and reconciliation refers to allocation and reconciliation of gas transferred at 'gas gate stations' and where high pressure transmission pipelines interconnect into low pressure networks or major end users. Reconciliation arrangements are a key component of an efficient gas market. Participants in the market need to know how much gas is going into the pipeline system, who is taking what gas out, how much gas is unaccounted for, and how that unaccounted-for gas will be allocated. The proposed start date for the new arrangements is 1 October 2008 to coincide with the gas year.

We also have a range of matters underway in relation to consumer gas supply arrangements. These include model contracts and a complaints resolution schemes.

October 2004 GPS task	Current Gas Industry Activity	Likely Results
Effective switching arrangement for gas consumers.	Rules for central registry in force. Significant implementation work.	Timely and accurate switching of customers between retailers. Enhanced retail competition.
On track for "go live" 1 March 2009		
Efficient reconciliation and allocation of gas transported on common networks.	Improving rules relating to downstream reconciliation and allocation of gas.	Timely and accurate allocation and reconciliation process.
Recommendation by April 08  Full implementation by October 08		
Improvement to consumer outcomes.	Variety of work streams underway.	Consumer obtains safe, fair, efficient and reliable supply of gas.
Issues paper before June 08		

**Figure 5**

### ***Progress summary***

As you have seen, Gas Industry Co is well advanced on the current GPS and expects to complete all policy development work suggested in the October 2004 GPS by the middle of 2009.

We are confident the new access arrangements, contingency management requirements, standard contracts, and switching and reconciliation systems will help markets deliver good outcomes for consumers.

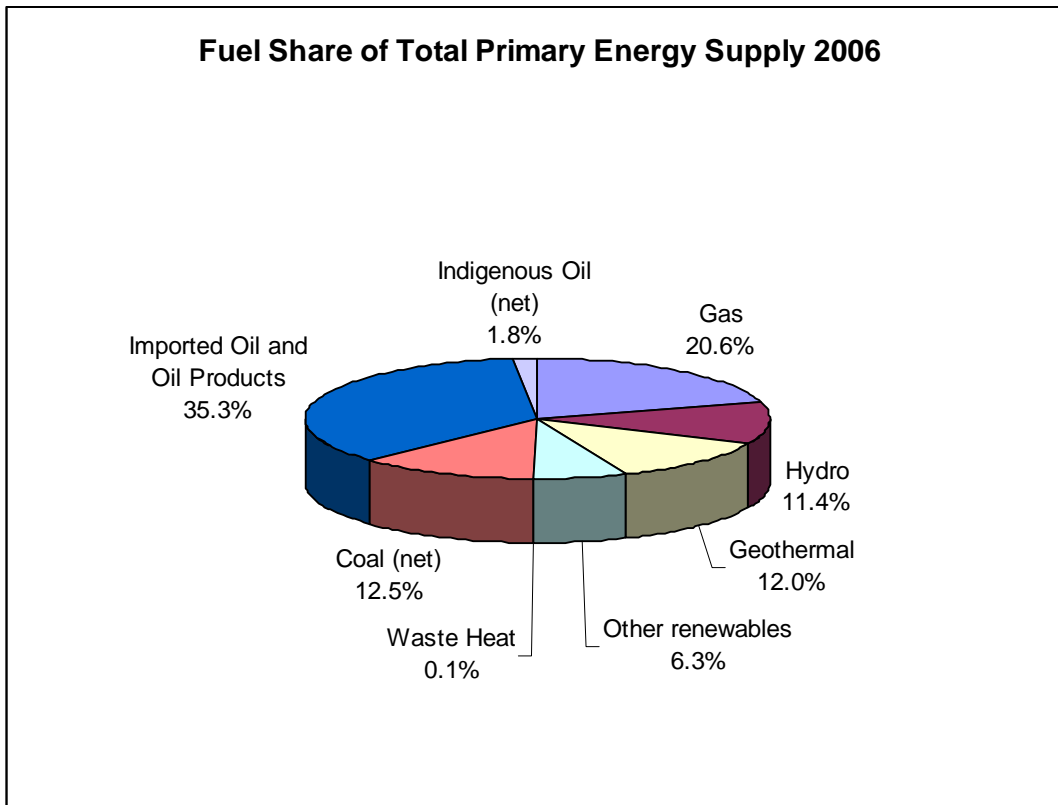
Once our policy work is complete our focus will then turn to implementation, review and oversight of the new arrangements. However we are aware that the Government is updating our GPS.

### **Wider energy policy framework**

In parallel with our market development work Government has been considering the wider energy policy framework. It is therefore appropriate to discuss the current contribution of gas to New Zealand's energy mix, future forecasts, and the implications of the recently released New Zealand Energy Strategy (NZES).

### ***Current energy mix***

We start with the current energy mix. Gas is a very significant contributor towards New Zealand's productivity and growth. As the following chart (Figure 6) shows, natural gas makes up a fifth of New Zealand's total primary energy supply. It contributes more than solar, wind, biogas, wood and geothermal combined. It is the largest indigenous source of primary energy ahead of coal and hydro.



**Figure 6. Fuel Share of Total Primary Energy Supply 2006. Source: Ministry of Economic Development, *New Zealand Energy in Brief June 2007***

How did this come about?

## Role of Government

The current state of the gas industry very strongly reflects the involvement of Government at certain key points in the industry's development.

Gas exploration and production is characterised by high risk, high capital intensity and long lead times. In New Zealand we also face a small domestic market and are geographically isolated. We compete with international players for capital, expertise and equipment.

These challenges have in the past necessitated a helping hand from the Government.

This has come through direct investment at the exploration and production stages and also through various forms of direct and indirect subsidy.

For example, Government involvement saw the establishment of the Natural Gas Corporation (NGC) in 1967 for the purpose of buying, processing, and wholesaling Kapuni natural gas. NGC in turn developed the transmission pipeline to Auckland and Wellington in 1970, through to Hawke's Bay and the Bay of Plenty in 1982 and further expanded the transmission network to Gisborne and Northland in 1984.

In the early 1970s the development of the Maui field was assured with an effective purchase of a 50% interest in the field by the Government and the building of the Huntly Power Station to establish a market for that gas.

In the mid 1980s the Government supported the industry through its role in the development of a methanol plant, an ammonia urea plant and a gas to gasoline plant and by giving subsidies for CNG.

And more recently the Government introduced a suite of measures in 2005 to encourage exploration. These measures are based around royalty reductions and funding for seismic acquisition and are part of the Crown Minerals Programme for Petroleum.

## **Economic policy objectives**

Involvement by the Government in the industry throughout these last forty years has been primarily motivated by economic imperatives. Given Government aspirations for the economy at the time, it made sense to assist the industry establish itself, and grow.

As we have seen, the partnership between the industry and Government was very successful in terms of its contribution to primary energy supply. We now have a range of specialist New Zealand companies supporting the exploration, production, treatment and utilisation of gas.

Natural barriers which apply to exploration and production still exist but these are mitigated to some extent by high liquid fuel prices and rising demand and the fact that New Zealand is still relatively under-explored compared to other places in the world.

With this kind of outlook, it is not surprising that in 2005, the baseline projection was for gas to grow 35% by 2025. Or that, some industry participants expected the development partnership between industry and Government would continue and possibly extend into other segments of the sector. Going forward economic objectives are still important.

## **Introduction of environmental and social objectives**

However, super-layered on top of the economic objectives are new policy goals relating to security of supply, fair outcomes for consumers, and the protection of the environment.

These new goals have significantly changed the regulatory landscape.

This is not unique to New Zealand. Around the globe governments are moving away from the position that all you need to do is set up the structures and systems and the markets will deliver everything a nation requires.

Governments are now seeking an active role in determining their nations' energy mix. They now require the competing goals of economic development, environmental protection and energy security to be accommodated in decision making.

They are also seeking to put in place "safety net" arrangements for consumers.

The obvious tension between these objectives creates uncertainty for stakeholders (and also regulators).

In New Zealand the Government has responded to the call for a clear strategic direction with the issue of the New Zealand Energy Strategy (NZES).

### ***Impact of NZES on the gas sector***

The NZES sets a target for electricity production to be sourced from 90% renewables by 2025. The policy settings to assist in achieving this goal include:

- a ban on thermal generation for the next 10 years;
- the introduction of an emissions trading scheme; and
- a more assertive use of Government's call-in powers under the Resource Management Act to fast-track consents for renewable power generation.

Clearly, the helping hand has shifted from the gas sector to the renewables sector.

### **A sunset industry?**

This raises the question of whether the gas industry is a sunset industry. Can it survive now without a helping hand? The underlying demand for gas provides an answer to this question.

### ***Domestic and commercial use of gas***

There is currently about 220,000 residential consumers and over 3,000 commercial users ranging from hotels to office buildings, schools and hospitals. These consumers use gas for water heating, space heating and cooking.

### ***Industrial use***

For industrial users gas is the fuel of choice. It is used for a range of industrial applications including process heating and steam raising. Indeed two of the largest users of gas in New Zealand are the forestry<sup>1</sup> and the dairy<sup>2</sup> sectors which are both going through significant growth. Many of these users have made substantial capital investments based on the use of gas. It is not an option to switch away from gas overnight.

The Emissions Trading Scheme actually improves the competitiveness of gas as against coal. For example, in the dairy and forestry sectors, MED modelling suggests that as much as 50% of existing coal use in the dairy sector and 25% in the forestry sector will be switched to gas after 2010.<sup>3</sup>

This is very positive for gas.

### ***Petrochemical production***

There are also industries that use gas as a raw product, such as the methanol plants in Kapuni. Their requirements fluctuate in line with international trends and commodity prices.

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<sup>1</sup> <http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/sonzaf/2007/page-13.htm>

<sup>2</sup> <http://www.maf.govt.nz/mafnet/rural-nz/statistics-and-forecasts/sonzaf/2007/page-18.htm>

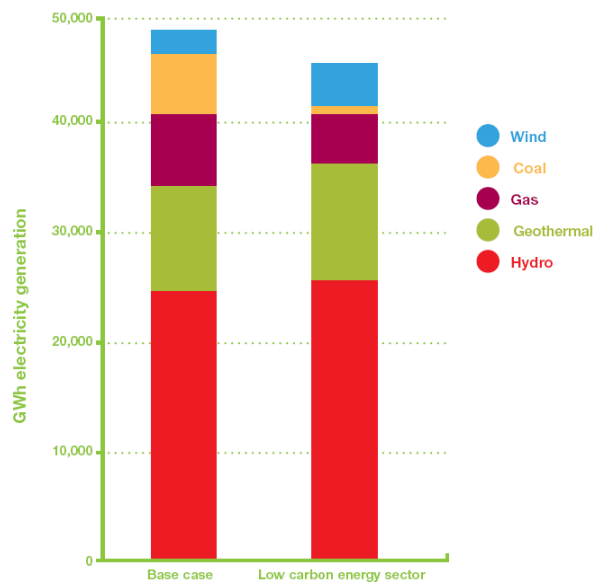
<sup>3</sup> New Zealand Energy Strategy Low Carbon Energy Scenario (October 2007) at page 21. < <http://www.med.govt.nz/upload/52210/Low-Carbon-Energy-Scenario.pdf>>

Recently Methanex announced the re-opening of its plants at Motunui. This raises the prospect that some of the displaced gas from the ban on gas-fired generation could find a home in methanol production.

This also is very positive for gas.

### **Use of Gas for Power Generation**

However, a different picture emerges in relation to power generation.



Source: Ministry of Economic Development

**Figure 7: Electricity generation in 2025 under emissions pricing and efficiency measures**

The above graph (Figure 7) is from the NZES. It shows how electricity generation could be made up in 2025 once the Government's changes are in place. It shows that looking out to 2025 gas-fired generation could decrease by roughly 25% as compared with the business as usual case. The difference will be picked up mainly by an increase in wind generation and decreases in demand.

Importantly, it does not show that gas will no longer be used in electricity generation. Instead it shows that the growth in gas use will not be as large.

Importantly also, this is just one possible scenario for gas. It is a long journey to 2025 and like all long journeys a number of things can happen before the final destination is reached.

As a nation we have yet to define the security standard we are prepared to live with. We do not yet know the full costs of realising the preferred vision for New Zealand's energy mix. These costs will change over time.

This creates the possibility that a different transitioning path may be required. If so, gas is well placed to provide a secure and affordable source of energy while all energy options are evaluated and assessed.

There will be a period of uncertainty but there is opportunity in that uncertainty.

For example, there will still be a need for new peaking plant to ensure that demand can be met as reliance on intermittent generation increases. There will also be a need for other new developments which provide flexibility and enhance system security. Contact Energy's recent decision to invest in gas storage facilities is one example.

### **Conclusion on NZES**

So far from being a sunset industry there is a possibility that the gas industry will continue to play a very important part in the energy mix for many more years.

This much was confirmed by the Minister of Energy in his recent address to the National Power Conference just a couple of weeks ago where he said:

*“We do not shrink away from the reality that in the electricity sector a greater emphasis on renewables means demand for gas will not grow as it might otherwise have. This is axiomatic. But nor do we accept some of the rhetoric being put about that the gas market will fail. The gas for electricity market is not going to disappear. Other uses for gas also exist”.*

However, we have to acknowledge that the gas market must transform.

### **Concluding Remarks**

*What is Gas Industry Co's vision for the industry?*

The standard answer is that it is not Gas Industry Co's role to have a vision for the industry but merely to work with the Government of the day to implement its vision. This is what the Gas Act and Gas Industry Co's constitution require.

*But there is another answer:*

There is clearly a need to transition to a low emissions future. The main issue is timeframes.

With innovation and technology gas can make a significant contribution to a low emissions future. This is the industry's challenge.

As a regulator Gas Industry Co needs to match the industry's innovation with arrangements that promote innovation.

This will mean the gas industry continues its cornerstone role in the delivery of secure and affordable energy long into the future.