

8 April 2009

The Secretary
Senate Select Committee on Climate Policy
Via email: climate.sen@aph.gov.au

Dear Secretary

Inquiry into policies relating to climate change

The Australian Pipeline Industry Association (APIA) welcomes the opportunity to provide information to the Senate Select Committee on Climate Policy Inquiry into policies relating to climate change. APIA's information relates to three distinct issues:

1. **The inability of the Carbon Pollution Reduction Scheme (CPRS) to achieve emissions abatement at the lowest economic cost.** As currently drafted, the CPRS does not ensure that parties to long term contracts are able to pass through carbon costs to end users.
2. **The inappropriateness of complementary measures such as the Renewable Energy Target (RET).** The CPRS (or any future alternative) should be the sole policy mechanism for emissions abatement, leaving the market to determine the most efficient methods to reduce emissions. In setting a limit on the total emissions for the economy, the CPRS actually determines the economy's total emissions, therefore the RET and other complementary measures can undermine the intentions of the CPRS to reduce Australia's emissions.
3. **The need for an increased focus on natural gas as a sensible alternative fuel to achieve emissions reduction.** Natural gas is relatively clean, cheap and abundant in Australia. Natural gas technologies are mature and proven. Government policy is almost universally directed at renewable energy or clean coal (carbon capture and storage), and this influence will reduce the attractiveness of using natural gas as an important alternative fuel in a carbon constrained economy.

APIA would be happy to provide any additional information to the Committee or discuss these issues further.

Yours sincerely

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CHIEF EXECUTIVE



The Australian Pipeline Industry Association (APIA) welcomes the opportunity to provide information to the Senate Select Committee on Climate Policy Inquiry into Climate Policy.

APIA is the peak national body representing the interests of Australia's transmission pipeline sector. APIA's membership is predominantly involved in high-pressure gas transmission. APIA's members include contractors, owners, operators, advisers and engineering companies and suppliers of pipeline products and services.

APIA's members own, operate and service the gas transmission pipelines that supply the gas market and are likely to be the key investors in new pipelines and capacity expansions of existing pipelines that will be required in order to meet the growing needs of the energy market over the next 20 years and beyond. This investment in transmission pipeline infrastructure will be essential to Australia's economic growth and should be part of Australia's strategy for reducing greenhouse gas emissions.

The terms of reference for the inquiry are broad ranging and, in this submission, APIA will provide information on 3 matters:

- a. the choice of emissions trading as the central policy to reduce Australia's carbon pollution, taking into account the need to:
 - i. reduce carbon pollution at the lowest economic cost;
- b. the relative contributions to overall emission reduction targets from complementary measures such as renewable energy feed-in laws, energy efficiency and the protection or development of terrestrial carbon stores such as native forests and soils; and
- f. any related matter.

TOR a(i) - The ability of the CPRS, or any emissions trading scheme, to reduce carbon pollution at the lowest economic cost.

Any emissions abatement scheme that aims to minimise the economic cost at which it achieves a reduction in carbon pollution must ensure that the appropriate price signals are sent to the economy. This enables the economy to determine the most efficient means of achieving the reduction.

In the case of mechanisms such as the Carbon Pollution Reduction Scheme (CPRS) that place a price on carbon emissions to achieve abatement, end users must be fully cognisant of the emissions resulting from a product or service, and the price of that product or service must fully reflect the totality of emissions resulting from the use of the product or service.

In the case of natural gas, the emissions resulting from end use of natural gas for energy include:

- The emissions resulting from the production of this gas;
- The emissions resulting from the processing of this gas;
- The emissions resulting from transporting (both transmission and distribution) of this gas; and
- The direct emissions resulting from the burning of this gas.

In order to ensure the correct price signal for the use of natural gas in the economy, the CPRS costs associated with all these factors need to be reflected in the final price of natural gas. In the current draft of the CPRS legislation, this is not achieved, particularly in the transmission sector.

The gas transmission market is largely based on long-term transportation contracts (often around 20 years). The term of these contracts reflect the desire by customers for transportation capacity to match the term of their gas purchasing arrangements.

The energy use of a pipeline contributes to the total cost of the transmission service being provided by the pipeline company. It is in the interest of a pipeline company to undertake cost and efficiency improvements that will deliver operational savings. But the cost of reducing emissions arising from the transportation of a product should be reflected in the end price of the product.

Many long-term contracts, and some recent contracts, in the gas transmission industry predate the fundamental policy shift reflected in the CPRS. Whilst most contracts contain clauses in relation to changes of law or pass through of tax changes, many do not allow for costs associated with carbon constraints to be passed through. In the current draft of the legislation, the carbon costs are not considered a tax and, according to many long-term contracts, cannot be passed through. In this case, gas transmission companies will bear this cost for many years to come. It should be noted that these companies will not receive compensation. While the anticipated cost impact of the CRPS for each transmission company will vary depending upon the nature of the pipelines owned (the more heavily compressed pipelines will wear the greatest burden), the cost is substantial and represents up to a 20% increase in operating costs.

This issue could not reasonably have been anticipated at the time many of these contracts were executed. Moreover, there is little incentive to enable pipeline owners to renegotiate these contracts in order to pass through the costs. In most circumstances, the customers of pipeline owners are larger entities with greater market power. In negotiations they usually have the power to ensure that costs remain with pipeline owners, or they can simply refuse to enter negotiations regarding a new contract.

While officials at the Department of Climate Change suggest that contracts entered into in the last 5 years should have included carbon provisions or that the contracts could be re-opened as both parties would be incentivised to reach a compromise on the issue of cost pass through, this demonstrates a lack of appreciation of the reality of commercial negotiations as mentioned above. Also, in such negotiations, inclusion of provisions for laws that have not have been announced or developed is fraught. Prior to the election of the current Government in 2007, there was no commitment to a carbon price in Government policies. Commercial negotiations cannot always consider allowances for a mere possibility. In fact, one APIA member factored a “carbon tax” into a contract in an attempt to anticipate Government policy. Under the legislation as drafted, such a contract is unable to clearly identify which party is responsible for the CPRS costs.

The CPRS White Paper, with the Government’s final position on its emissions trading scheme, was published on 15 December 2008. In the White Paper, the Government suggests that it expects many parties will simply renegotiate contracts to allow for appropriate pass through of carbon costs (CPRS White Paper p15-14). Again, such a comment demonstrates a lack of understanding of commercial realities. It is highly unlikely that any party to a contract would willingly renegotiate to accept additional costs. In fact, it would not be in their shareholders’ interests to do so. Clearly, companies that are a party to long term contracts, such as participants in the gas transmission industry, are seriously disadvantaged by this issue.

The Government has also suggested that, if renegotiation of contracts does not occur, a supplier that is unable to pass through carbon costs would leave the market and be replaced by a new supplier. That new supplier would be able to enter new contracts reflecting the legislative requirements of the CPRS (CPRS White Paper p15-14,15). Such a view demonstrates no concern for owners of capital intensive, long-term infrastructure such as gas transmission pipelines and the impact of these unexpected, additional costs. Such comments imply that it is acceptable for Government policy to put some companies out of business simply because their existing contracts do not reflect an economic environment that did not exist at the time the contracts were negotiated. This is a matter of immediate importance to the gas transmission industry, with some pipeline owners in the process of refinancing hundreds of millions of dollars of debt at a time of global financial pressure.

The Government’s policy position on this issue (15.5 of the CPRS White Paper) is to take no action, noting that some submissions suggested that existing contracts would allocate carbon costs “appropriately”. Clearly, such submissions are made by parties that would benefit from such contracts, that is, not face increased costs as a result of the policy. Such companies would be happy with the legislation remaining silent on this issue.

By choosing to not act on the issue of contractual impediments to carbon cost pass through, the Government is putting forward the unreasonable view that industry should, when preparing contracts, make provisions for laws not yet conceived.

In implementing the CPRS, the Government is imposing major structural change on the economy, with the intention of reducing the carbon intensity of the economy in the most economically efficient manner. The CPRS purports to ensure the cost of carbon emissions associated with products and services is given an economic value and, in doing so, provides a signal to end users, thus modifying behaviour and ultimately reducing emissions.

Therefore, in order to ensure the full (CPRS-created) economic value of carbon emissions is represented in the final price, each element of the supply chain should be able to pass through carbon costs. Any carbon costs that remain in the supply chain and not passed on could be viewed as a failure, in principle, of the CPRS system.

In choosing to not act on the issue of contractual impediments to carbon cost pass-through, the Government is allowing these costs to become stranded in the supply chain, increasing the operating costs of many gas transmission companies, with no compensation for such a critical cost increase.

The failure to ensure that the CPRS enables full carbon cost pass-through fundamentally undermines the principle of the CPRS.

General solution

Whilst the majority of contracts do not have mechanisms to deal with the CPRS or an emissions trading scheme, almost all have provisions allowing for new taxes or changes in taxes to be reflected in the agreed tariffs. If an emissions trading scheme is to be the final centrepiece of the Government's emissions abatement strategy, a relatively simple solution to this issue would be to legislate that costs associated with the emissions trading scheme are to be treated as a tax for contractual purposes.

If the CPRS legislation was to specifically allow for costs associated with acquiring Australian Emissions Units from the Government as taxation, the issue of contractual impediments to carbon cost pass through would be largely dealt with for all sectors of the economy.

Given the Government has already prepared for the possibility that these costs will be found to be a form of taxation, such a change to the legislation would be minimal. The exposure draft of the CPRS legislation includes separate bills, which ensure that these costs will be imposed by the CPRS legislation rather than the Tax Act, should the costs be deemed a tax.

It is assumed that the Government has reason to believe that the CPRS might be found to be a form of tax. The Government should acknowledge this and, rather than waiting for a court decision on the matter, declare the CPRS to be a form of taxation and remove any ambiguity from the economy.

TOR b - The relative contributions to overall emissions reduction of complementary measures

If the aim of any emissions abatement policy is reduce carbon pollution at lowest economic cost then it is not appropriate to introduce any complementary measures that dictate to the economy methods to reduce emissions.

In the case of the Renewable Energy Target (RET), the Government is forcing the economy to source 20% of its electricity from the most expensive sources currently available. Whilst it is apparent that the sourcing of electricity from renewable sources results in near zero emissions, it is not necessarily the most economically efficient means of reducing emissions.

In fact, when the RET is combined with the CPRS, it does not actually result in the reduction of emissions at all. In setting its emissions targets, the CPRS places both a ceiling and a floor on Australia's total emissions. Any emissions saved through the use of renewable energy mandated by the RET will be subsequently available to other sectors of the economy. These sectors may well have emission abatement opportunities that are lower cost than renewable energy, but will not necessarily be required to pursue them.

The economy must be free to determine the lowest economic cost methods of reducing carbon emissions. To achieve, an emissions abatement policy must place a value on these emissions, ensure the price signals reach end users, and allow end users to make efficient decisions. Energy producers will eventually employ renewable energy sources – when it is cost effective under an emissions trading scheme. Given the funding allocated to R&D of renewable energy, this outcome is likely to be sooner rather than later.

TOR (f) The emissions abatement potential of natural gas

The increased use of natural gas in Australia, instead of coal for production of energy, would see a significant reduction in national greenhouse gas emissions. Natural gas is a viable, abundant, low cost, low emission option already in use in every sector of the Australian economy.

It is vital for the Australian economy that emissions reduction is achieved at as low an economic cost as possible. The stationary energy sector is the largest contributor to Australia's national emissions and natural gas is the lowest cost method to achieve emissions reduction.

Natural gas provides a significant and immediate opportunity to meet Australia's commitment to emissions reduction.

Government Policy regarding Natural Gas

Natural gas is a clean, inexpensive and abundant energy source in Australia. Despite this, Government climate change policy assistance is directed towards other energy options, primarily clean coal (carbon capture and storage) technology and renewable energy technology.

The only gas specific policy in Australia is the Queensland Government's Gas Scheme, which has a target for natural gas to comprise 13% of the fuels used for electricity generation (increasing to 15% in 2010).

APIA considers the extensive Government policy focus on renewable and clean coal technology will reduce the impetus to invest in natural gas, the clear and obvious alternative – and cleaner – fuel and the most efficient way to reduce Australia's carbon emissions.

Role of Natural Gas in Emissions Reduction

In the short to medium term, natural gas can play a vital role in reducing Australia's greenhouse gas emissions. Emissions from Australia's stationary energy sector totalled 287.4 million tonnes of carbon dioxide equivalent in 2006¹, 52.3% of the total national emissions of 549.9 million tonnes of carbon dioxide equivalent. The vast majority of these emissions result from coal fired electricity. Natural gas fired electricity generation is significantly cleaner than coal fired electricity generation, and it is estimated that every coal fired power station replaced with a gas fired power station would save millions of tonnes of carbon dioxide equivalent emissions (exact figures are not available, as every power station is different). Indeed, Environment Victoria has found, in its November 2008 paper *Turning it around: environment solutions for Victoria*, that:

"The most significant early impact (in the stationary energy sector) comes from the use of gas as early as possible to deliver early reductions in greenhouse gas emissions. Indeed, possible uncertainty in short term investment in coal-fired generation presents an early opportunity for a greater reliance on Gas Powered Generation (GPG) to meet Victoria's base-load energy requirements. Whether coal-fired generation completely goes off-line, or even just varies its generation activities in the interim period until CCS comes on-line, there is certainly an opportunity to move to a greater reliance on

¹ National Greenhouse Gas Inventory 2006, *Australian Greenhouse Office, Department of the Environment and Water Resources, June 2008.*

GPG. However, it is stressed that this wedge would require urgent and major energy infrastructure investment in Victoria.”

Natural gas fired power stations also enjoy an economic advantage over many other types of electricity generation, being significantly lower cost to construct. Natural gas compares favourably to most base load electricity generation options, as shown in the table below and, when the CPRS places an economic value on emissions, will increase its comparative advantage to coal generation.

Households

The advantages of using gas in the home are well known; gas can heat more quickly, more efficiently and has greater control than equivalent electric appliances. In addition to these advantages, using natural gas in the home in place of electricity results in significantly fewer greenhouse gas emissions.

On average, using 3.6MJ of gas produces 75% fewer emissions of 1kwh of electricity, despite it having the same energy content. Combined with the fact that gas appliances are more efficient, most estimates consider gas appliances to result in around 1/6th the emissions of their electric counterparts. APIA estimates that by switching to gas appliances for cooking, space heating and water heating, a household could reduce its home energy related emissions by over 40%.

Switching to gas for home appliances would see households significantly reduce their carbon footprint while, at the same time, improving the efficiency and performance of heating, cooling and cooking appliances.

Electricity generation

Natural gas is the cleanest fossil fuel energy source available. When used in electricity generation, natural gas generates around 40% of the carbon dioxide emissions of a black coal power station and less than 33% the emissions of a brown coal power station. Gas fired power stations also use around half the water required for coal fired power stations. For details on the operation of a combine cycle natural gas power station, see the “Uses of Gas” section above.

Thermal efficiency of gas and coal fired electricity

Generation and Fuel Type	Thermal Efficiency (%)	CO2 Emissions (tonnes/MWH)
Combined Cycle Natural Gas	48-55	0.39
Thermal Natural Gas	38	0.49
Thermal Black Coal	35-40	0.93
Thermal Brown Coal	29	1.23

Also, ABARE predicts that, in the future, as natural gas power stations evolve, they will extend their thermal efficiency (and thus their emissions intensity) advantage over coal power stations. This is because coal fired electricity generation has been in use longer than has gas fired electricity generation. Coal technology has been investigated and improved over a longer period of time, therefore it is expected that gas fired electricity generation will continue to be improved.

Average annual rate of improvement in fuel thermal efficiencies²

Period	Black Coal (%)	Brown Coal (%)	Oil (%)	Gas (%)
2005/06 – 2009/10	0.2	0.53	0.39	1.69
2010/11 – 2019/20	0.37	0.7	0.39	1.35
2020/21 – 2029/30	0.50	0.7	0.39	1.0

Carbon Capture and Storage is an approach to reducing emissions based on capturing carbon dioxide from large point sources such as fossil fuel power plants. The carbon dioxide can then be permanently stored away from the atmosphere, usually underground.

While the focus of carbon capture and storage technology is very much to ensure coal fired power stations remain a viable source of electricity into the future, the technology will also be applicable to gas fired power stations and will also enable gas fired power stations to reduce their emissions.

² ABARE Australian Energy Projections to 2029-20, 2007

Electricity base load generation options:³

Technology	Commercial Operation	Construction Cost \$/kW	Fuel Cost \$/MWh(SO)	CO2 kg/MWh(SO)
Ultra-supercritical coal (USC). The most advanced coal power stations.	currently available	1400 - 1950	8 - 14	785-860
USC with CCS	CCS available 2020	3000 - 3500	11 - 20	~ 100
Natural Gas Combined Cycle (CCGT). The most advanced gas power stations.	currently available	800 - 940	>28	345
CCGT with CCS	CCS available 2020	1300 – 1700	>33	~ 50
Integrated Gasification Combined Cycle (IGCC). Coal is converted to gas and then used as fuel.	2015	2100 – 2600	9 - 14	785 - 840
IGCC with CCS	CCS available 2020	3100 - 3500	9 - 16	~ 100
Nuclear	Currently available but no regulatory regime	2800 – 3000	5	0
Solar Thermal.	Currently available but in early phase	~ 4600	0	0
Hot dry rocks.	unknown	unknown, site specific	0	0
Hydro	Currently available	site specific	0	0
Biomass thermal	Currently available	2000	0* - 30	0

³ NSW Power Generation and CO2 Emissions Reduction Technology Options 2007