

**Submission
No 16**

**INQUIRY INTO THE SUPPLY AND COST OF GAS AND
LIQUID FUELS IN NEW SOUTH WALES**

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Inquiry submission on behalf of the Greens NSW: the supply and cost of gas and liquid fuels in New South Wales

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This submission to the NSW Legislative Council Select Committee inquiry into *the supply and cost of gas and liquid fuels in New South Wales* is made on behalf of the Greens NSW.

It focuses on three main themes within the Committee's terms of reference:

- ◆ Factors affecting the cost of gas in NSW,
- ◆ The impacts of rising prices on NSW consumers, and
- ◆ Possible regulatory responses.

It is surprising that the Terms of Reference for this inquiry fail to mention the environment, employment growth and technology development in gas substitutes.

In 2010-11, Australia consumed¹ 1516 petajoules (PJ) of gas which when combusted would result² in emissions of more than 76.8 million tonnes of CO₂-equivalent. This figure is growing rapidly.

Any consideration of the future of the gas industry in NSW cannot properly proceed without reference to the environmental and climate impacts of gas drilling and combustion and the employment potential in alternatives to gas.

This submission argues that:

1. The decision to develop LNG exports in Queensland is placing upwards pressure on the wholesale price of gas and, in the long run, is likely to do so at an increasing rate as more export trains are developed. Exports are already contributing to rising prices for large industrial consumers and to a lesser extent for retail (mass market) consumers.
2. Other causes of rising gas prices include
 - a. a dysfunctional and opaque gas market that is dominated by commercial-in-confidence point-to-point trading and
 - b. the rising costs of gas supply infrastructure.
3. Temporary price downturns in the Australia's gas export markets cannot be relied on to become permanent. In the long run, wholesale gas prices are expected to rise substantially, due in part to increased costs of extraction as the easier-to-exploit resources are exhausted.

¹BREE 2013, Energy in Australia 2013, www.industry.gov.au/.../energy-in.../bree-energyinaustralia-2013.docx

² Based the factors in Table 2 of Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education "Australian National Greenhouse Accounts: National Greenhouse Accounts Factors" July 2013, available at http://www.climatechange.gov.au/sites/climatechange/files/documents/07_2013/national-greenhouse-accounts-factors-july-2013.pdf

4. The decision to develop East Coast gas exports will have long-term environmental and climate consequences that far outweigh any alleged short-term benefits to the Australian or global economies.
5. The exploration, extraction and use of fossil gas have substantial and unacceptable environmental and climate impacts as well as dire local environmental, health, economic and social consequences.
6. Rapid technological developments in renewable energy, heat pumps and chillers, electrical storage, and industrial process control are creating alternatives to fossil gas use that are reaching into broader classes of applications. Apart from industries that use gas as a feedstock, such as the manufacture of plastics, artificial fertilisers and explosives, most uses of gas can now be substituted with lower running cost electricity, that can be entirely sourced from renewable generation.
7. The barriers to transition away from gas are often related to access to capital required for investment in new equipment and ownership (for example, in rental accommodation).
8. If increasing wholesale and retail gas prices are not accompanied by measures that improve efficiency, facilitate and encourage substitution to other energy forms, generate new jobs in the new energy forms and move to a substantial reduction in gas usage, the impact on employment and low income households will be unacceptable. Those impacts can be causally attributed to the export of LNG.
9. Policy setting should focus on a rapid and planned transition to an economy that does not use or export fossil gas.
10. Policy responses that rely on the development of greater gas supply options in NSW or elsewhere in Australia are doomed to failure because of the potential size of the international market and its capacity to soak up any new sources and because of the environmental and climate impacts of new gas sources. Further, such policies would have unacceptable greenhouse and environmental consequences.
11. Policy responses that rely on the development of new gas transmission infrastructure are also unlikely to achieve any long-term relief in gas prices in NSW. In the short term they could send the wrong investment signal to industrial and mass market consumers, encouraging an increase in gas dependency that will leave the economy more vulnerable to long term gas price increases.
12. In the absence of a response that phases out LNG exports and shrinks the size of the domestic gas market, policies should be developed that:
 - a. Minimise the impact on low and middle income households, including those in rental accommodation, of rising prices,
 - b. Do not create barriers or disincentives to the transition away from fossil fuels but encourage the application of efficiency and renewable substitution measures,
 - c. Provide pathways and assistance to households and industries to substitute renewable energy forms wherever possible,
 - d. Prohibit the substitution of gas electricity generation with new coal-fired capacity, focusing instead on wind, solar thermal, end-use energy efficiency and roof-top solar.
 - e. Protect low and middle-income households by supporting investment in technologies that enable reductions in gas use that match price rises and thus stabilise or reduce bills. This would include benefit sharing arrangements between energy service companies and households and landlords, low or no interest loans on new gas-independent appliances and energy standards for rental accommodation that reduce exposure to gas prices, and

- f. Maximise employment opportunities in new, sustainable industries, especially in communities where gas-intensive industries are unable to make the transition or sustain price rises.
13. Policy responses that rely on suppressing the price for fossil gas, including various forms of reservation schemes, are in effect subsidies on fossil fuel use. They will have profoundly adverse short-term and long-term environmental and social impacts and should be rejected. Artificially low gas prices:
- a. Provide a disincentive for efficiency measures, renewable energy development and fuel substitution,
 - b. Protect gas intensive industries from the need to innovate to adjust to the economic costs of fossil fuels,
 - c. Protect industries such as artificial fertilisers and plastics from an important component of the environmental cost of their activities,
 - d. Undermine the renewable energy and energy efficiency industries and destroy jobs in those sectors, and
 - e. Delay the transition away from fossil fuels, placing the NSW and Australian economics in a vulnerable position and squandering the manufacturing and export opportunities that stem from early adoption.
14. Domestic gas reservation schemes (DGRS) are, in effect, subsidies on gas prices, paid for by a tax on producers or exporters. Larger users will receive greater subsidies, thus rewarding inefficiency and environmental damage. While taxing the production or export of fossil gas will have positive long-term consequences, any attempt to subsidise fossil fuel prices should be rejected.
15. DGRS will lock NSW into the gas economy, creating an even greater demand for CSG extraction.
16. Compared to DGRS, supporting households to transition away from fossil gas and creating pathways for industries to transition away from, or reduce, gas dependency will:
- a. be better for the environment and the climate,
 - b. generate more employment,
 - c. provide greater long-term stability to household energy bills
 - d. create an economy that is less vulnerable to gas prices, and
 - e. create export opportunities.
17. Managing the transition away from gas will require a substantial public sector effort, including the creation of agencies that can support households and small business, and public investment in the renewable alternatives.

The supply of reticulated gas in NSW

A number of commentators³⁴⁵⁶⁷ have pointed to the impacts of the development of liquefied natural gas (LNG) export facilities ('trains') in Queensland on wholesale gas prices in NSW.

³ Stephen King "A gas reservation scheme is protectionism in disguise", The Conversation, January 2013, <http://theconversation.com/a-gas-reservation-scheme-is-protectionism-in-disguise-11810>

⁴ Department of Industry, Bureau of Resources and Energy Economics, c2014 "Eastern Australian Domestic Gas Market Study" <http://www.industry.gov.au/Energy/EnergyMarkets/Documents/EasternAustralianDomesticGasMarketStudy.pdf>

Each argues that connecting the Australian east coast gas market to international consumers creates higher price demands that directly compete with Australian users of gas.

Suppliers will be attracted away from domestic users by the higher prices available overseas, unless prices rise in Australia.

Estimates of the impact on Australian wholesale prices vary. Theoretically, the gas price in Queensland pipelines will rise to the value that suppliers can obtain in internationally, less the price of processing and transport, referred to as the netback.

In the decade prior to the development of LNG exports, wholesale prices in eastern Australia typically averaged \$3 to \$4 per gigajoule (GJ)⁸. A Sinclair Knight Mertz (SKM) modelling study⁹ for the Commonwealth government's Gas Market Study Task Force predicted wholesale prices peaking in a range of approximately \$6/GJ to \$10.5/GJ, representing a two to threefold increase.

Bulk gas is usually sold on long-term contracts (Gas Sales Agreements between suppliers and large industry or retailers) that lock in predetermined prices. The impacts of rising wholesale spot prices will be felt progressively as contracts expire.

Impacts on residential and small industrial consumers will be smaller, as the mass market retail price is dominated by the supply infrastructure costs. For AGL customers, network costs are about 50% of the total bill¹⁰.

In 2013 (the last year in which energy and retail components of bills were reported separately), wholesale gas costs were¹¹ 28% of the typical gas bill, network 48%, retail 19% and the carbon price 5% (which is now no longer charged).

On these figures, a doubling of the wholesale gas costs with all other components remaining equal would result in a 28% increase in the typical residential bill.

A trebling of the wholesale cost would see a 56% increase.

Gas retailers purchase on long term contracts to manage financial risk. In theory mass market prices should rise relatively slowly, depending on the expiration dates of the contracts.

However, as SKM observes,¹²

⁵ Wood, T., Blowers, D., and Chisholm, C., 2014, "Gas at the crossroads", Grattan Institute <http://grattan.edu.au/wp-content/uploads/2014/10/817-gas-at-the-crossroads.pdf>

⁶ Tim Buckley "Briefing Note: The Narrabri Coal Seam Gas Project" December 2014 <http://www.ieefa.org/wp-content/uploads/2014/12/IEEFANarrabriCSGproject.pdf>

⁷ Greg Jericho, 2 October 2014 "Reserving gas for domestic users would hurt the renewable energy industry" <http://www.theguardian.com/business/grogonomics/2014/oct/02/reserving-gas-for-domestic-users-would-hurt-renewable-energy>

⁸ Wood, op cit

⁹ Sinclair Knight Merz (SKM) 2013 "Gas market modelling", Gas Market Study Task Force www.industry.gov.au/Energy/EnergyMarkets/Documents/SKMGasMarketModelling.pdf

¹⁰ IPART July 2013 determination

[http://www.ipart.nsw.gov.au/Home/Industries/Gas/Reviews/Retail Pricing/Review of regulated gas retail prices 2013 to 2016](http://www.ipart.nsw.gov.au/Home/Industries/Gas/Reviews/Retail Pricing/Review_of_regulated_gas_retail_prices_2013_to_2016)

¹¹ Australian Energy Regulator, 2013, "State of the energy market report"

<http://www.aer.gov.au/sites/default/files/Chapter%205%20-%20Energy%20retail%20markets%20A4.pdf>

¹² SKM op. cit.

"it appears that retailers may be intent on increasing the wholesale component of retail prices as if existing contracts were diverted to exports, regardless of whether they are or not, rather than giving retail customers the benefit of continuing low average contract prices."

In other words, gas retailers are profiteering at the expense of their customers from the rising wholesale gas prices, even when they do not affect costs.

As SKM puts it,

"Whether retailers sell their existing contract gas to export projects or to the retail market at an increased price, they will generate windfall profits from 2014 to approximately 2017, after which the windfall will transfer to gas producers."

Specific features of the gas market exacerbate the price increases.

In Australia, the wholesale markets for gas and electricity have evolved along very different pathways, in part because at the time of the establishment of the electricity market, transmission infrastructure was largely in public hands.

In the National Electricity Market wholesale prices are dominated by location-dependent spot prices set by a resolution of bids and offers. Suppliers and large consumers manage the risk in spot prices using financial instruments such as forward contracts and options.

In the Australian gas industry, prices are dominated by two-party sales agreements, which are often hidden behind commercial-in-confidence agreements. Efficient allocation of the pipeline capacity is almost impossible to achieve and it has been argued that supply constraints could in part be the result of poor market design.

Improving market design may prove to be impossible given the private ownership structure of the pipelines. There is a lesson about the inflexibility of private ownership in this for those who would seek to privatise common carriers such as the state's electricity distribution network and rail infrastructure.

Consequences of rising gas prices

Substantial increases in gas prices if not accompanied by other measures will inevitably place substantial financial stress on low and middle-income households, reduce employment opportunities in some industries and have a flow-on effect through the economy.

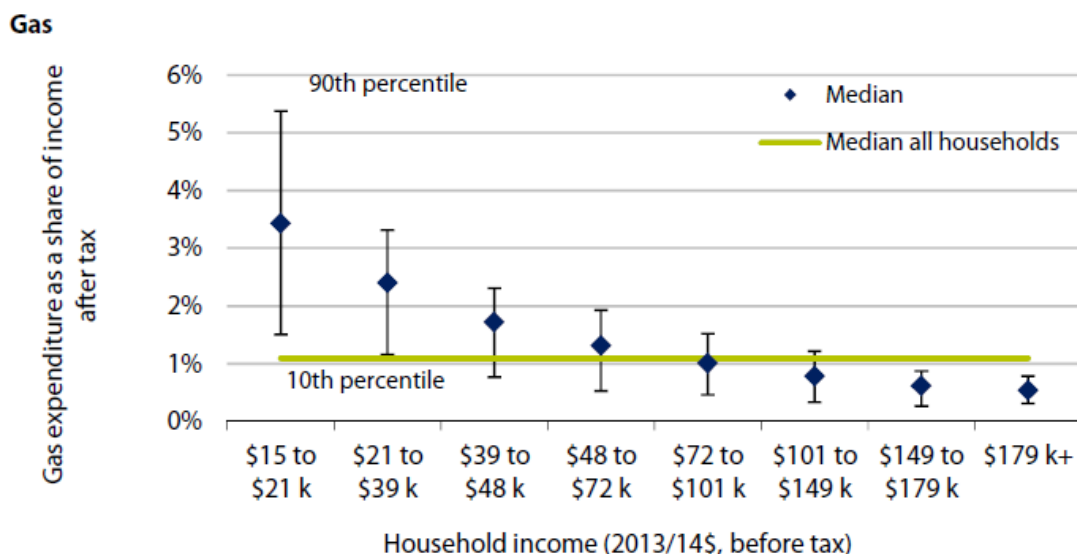
Rising prices risk creating a new wave of energy poverty, particularly for households where electricity price increases over the past six years have eaten into discretionary spending.

The vulnerability of low-income households to rising retail gas prices is illustrated by IPART's analysis¹³ of the spending on gas as a share of disposable income, the results of which are illustrated in the figure below, copied from IPART.

Gas bills are, however, the product of gas consumption and price, plus a fixed component.

¹³ IPART June 2013 "Review of regulated retail prices and charges for gas from 1 July 2013 to 30 June 2016 Final Report"
http://www.ipart.nsw.gov.au/Home/Industries/Gas/Reviews/Retail_Pricing/Review_of_regulated_gas_retail_prices_2013_to_2016/17_Jun_2013_-_Final_Report/Final_Report_-_Review_of_regulated_retail_prices_and_charges_for_gas_-_June_2013

Figure 8.1 Annual spending on gas as a share of disposable household income — Sydney and surrounding regions, 2013/14



Rising price can be compensated by reduced consumption levels, achieved by substitution to other energy forms, improved efficiency (i.e. same outputs achieved for lower gas consumption) or reduction of use.

For example, electric induction cook tops are now affordable and, because they deliver heat directly to the base of the cooking utensil, are highly efficient at converting primary electricity to heat and delivering it to the food.

For many households, the barrier to change will be a shortage of capital to purchase a new water heater or cook top or, for renters, the unwillingness of the landlord to invest in new fixed appliances.

These households risk becoming trapped by higher gas prices.

For industries that use gas for steam raising or other heating or cooling applications, spectacular improvements in the performance and efficiency of solar heaters, heat pumps and chillers provide an alternative to exposure to rising gas prices.

For many of these industries, capital can also be a barrier to change, despite relatively short pay back periods.

The continued cost decline in rooftop solar and the match between the daily energy demand cycle and solar radiation for many industries offer a pathway away from exposure to rising gas prices.

A small number of manufacturing industries use gas as a chemical feedstock. These include the production of artificial fertiliser, explosives, plastics and some other chemicals.

For these industries, small process efficiency improvements are unlikely to produce sufficient reductions in quantities consumed to compensate for the increase in prices.

Cost-effective alternative feedstock that would serve as a direct substitution for gas is likely to be difficult to find.

There is as yet insufficient independent analysis of the vulnerability to international competition of industries that use gas as a feedstock. An assessment of the impacts of increased gas prices is urgently

needed. The capacity of these manufacturers to absorb costs, pass them on to consumers or innovate to reduce exposure is at this stage unknown.

In the meantime, governments should not use the particular difficulties faced by these industries as a basis for a general response to gas price increases, as feedstock forms¹⁴ less than 13% of the total Australian gas consumption.

Options for responding to rising gas prices: Terminate gas exports

One approach to rising gas prices would be to stop the development of LNG exports from the east coast.

Gas exports from Queensland are likely reach¹⁵ more than 1,400 PJ per year by 2020, which when combusted will produce greenhouse gas emissions¹⁶ of more than 71 million tonnes of CO₂-equivalent each year. By way of comparison, this is more than the greenhouse gas emissions resulting from all electricity generation in NSW.

It has been argued that gas is a lower greenhouse substitute for coal. The best technology combined cycle gas turbine (CCGT) emits slightly less than 400 kg CO₂-eq/MWh, while NSW's lowest emissions coal-fired power stations operate¹⁷ at about 930 kg CO₂-eq/MWh.

Substituting coal-fired generation for gas is no cure for global warming. At best it will delay the worst impacts of climate chaos by some years but any large-scale fossil gas use will result in unacceptable concentrations of greenhouse gases in the atmosphere.

LNG export from Queensland is a major driving factor in the development of the CSG industry in NSW, which has unacceptable consequences for local air and water quality, human health and local economies.

The alleged jobs and benefits of LNG exports are outweighed by the long-term social, environmental and economic costs.

There are persuasive arguments for not exporting LNG from Queensland.

However, the Grattan Institute¹⁸ estimates that more \$63 billion is being invested in LNG export projects in Queensland, creating a powerful political barrier to cancelling exiting projects, despite the overwhelming economic arguments for doing so.

At the very least, gas exports should not be allowed to expand and a path should be found to phase them out as rapidly as possible.

However, it is unlikely that the political climate will prevent any restrictions being placed on gas exports in this decade so alternative responses to rising gas prices should be explored.

Even if gas exports were restricted, there are strong arguments that gas prices in Australia should be raised to world export parity (i.e. to a hypothetical netback) over a period of time, as was implemented

¹⁴ Based on data in Department of Industry, BREE, op cit. Industrial demand is 44% of total gas supplied (p. 39) and the chemicals and polymers industrial subsector are 29% of industrial consumption (Figure 3.3).

¹⁵ AEMO "Gas statement of opportunities update" May 2014

¹⁶ Based the factors in Table 2 of Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education "Australian National Greenhouse Accounts: National Greenhouse Accounts Factors" July 2013, available at http://www.climatechange.gov.au/sites/climatechange/files/documents/07_2013/national-greenhouse-accounts-factors-july-2013.pdf

¹⁷ ACIL Tasman "Fuel resource, new entry and generation costs in the NEM" April 2009

¹⁸ Wood et al, op cit

for Australian produced petroleum with a crude oil levy in 1975 and import parity pricing from August 1978.

Such price increases should be managed carefully to ensure that low-income households and vulnerable employees were provided with transition paths to less gas dependent futures.

Options for responding to rising gas prices: Domestic gas reservations schemes

Domestic Gas Reservation Schemes (DGRS) preserve some portion of gas extracted or exported for domestic use, at a lower price than the netback.

The Australian Workers Union is running¹⁹ a "Reserve our Gas" campaign and the Lock the Gate alliance appears to be supportive of DGRS in at least one of its media statements²⁰.

No doubt the large industrial gas users are also lobbying, at least behind the scenes, for protection from rising global prices.

The AWU and Lock the Gate are responding to well-justified concerns that rising gas prices will cost jobs in some sections of the manufacturing sector and create increased pressure for more CSG exploration and extraction.

Their belief is that a DGRS would protect jobs by providing gas feedstock at sheltered prices and that it would undermine those who use rising prices as an excuse to justify the development of a destructive CSG industry.

Both assertions are highly contestable.

Protecting gas-dependent trade exposed manufacturing might support some jobs in those industries in the short or medium term. However, in the longer term, employment that is dependent on subsidised gas prices will be secured at the expense of growth in other sectors of the economy that respond to higher gas prices and create sustainable solutions to the nation's energy needs.

Estimates of the total number of potential jobs in renewable energy vary, but some²¹ are as high as 73,800 in NSW alone.

These figures do not include the potential for export of both manufactured goods and expertise to countries that are slower to make the transition away from fossil fuels.

These jobs are unlikely to eventuate if fossil fuel prices are kept artificially low. The unfair playing field created by a DGRS would retard the transition by removing part of the economic force for change.

Industries that rely on gas would be protected from the need to innovate to develop alternative manufacturing processes that are less reliant on gas. They would be ill prepared when, inevitably, other constraints are imposed on the supply and cost of gas, including genuine scarcity and environmental and climate policy.

In effect, DGRS would shelter Australian businesses and households from the need to transition out of gas to renewable fuels. It would impede employment growth and cost far more jobs that it could ever save.

¹⁹ <http://www.reserveourgas.com.au/>

²⁰ Phil Laird "MacFarlane has missed the point on opposition to CSG" Lock the Gate Media Release June 26, 2014. <http://www.lockthegate.org.au/macfarlane-has-missed-the-point-on-opposition-to-csg>

²¹ Centre for Full Employment and Equity, University of Newcastle, 2008, "A just transition to a renewable energy economy in the Hunter Region, Australia" <http://www.resourcesandenergy.nsw.gov.au/energy-consumers/solar/sustain-renew-fit-subs/sustain-renew-fit-subs-greenpeace-australia-pacific-attach-a.pdf>

DGRS would lock the economy into fossil fuel dependence and leave it completely unprepared for the clean energy and technology environment that will be central to jobs in the rest of the century.

There are strong reasons to believe that a DGRS would perversely increase pressure for CSG drilling. As long as export demand for LNG remains buoyant, the likelihood is that any reserved amount would be additional to export and existing contracted amounts, thus increasing the total demand for gas.

Further, low gas prices would lock NSW and Australia into a fossil fuel economy where little is being done to transition out of gas.

Deakin Law School Associate Professor Samantha Hepburn provides support²² for a DGRS in order to avoid what she claims will be an increase in the nation's greenhouse gas emissions:

"If the cost of gas makes it uneconomic for gas to operate as a replacement electricity fuel for coal, despite its abundance (sic), coal fired energy emissions may not be reduced."

Professor Hepburn presumes that any move away from coal requires gas as either a substitute or as a transition fuel. Neither is true, as established by studies²³ conducted by the University of NSW's Elliston, MacGill and Diesendorf. This work demonstrated the possibility of a transition to a secure and affordable electricity supply based entirely on wind, solar thermal, rooftop solar, non-fossil gas (bio-gas) fired turbines and energy efficiency.

Given the rising costs of building a coal-fired power station, it is almost certain that wind and other renewables would be more attractive²⁴ than coal. A Bloomberg New Energy Finance study²⁵ in 2013 concluded that:

"Unsubsidised renewable energy is now cheaper than electricity from new-build coal- and gas-fired power stations in Australia"

According to Kobad Bhavnagri, head of clean energy research for Bloomberg New Energy Finance in Australia, it *"is very unlikely that new coal-fired power stations will be built in Australia. They are just too expensive now, compared to renewables"*.

Conversely, the Grattan Institute²⁶ mounts a traditional neo-liberal economic argument against gas reservation, stating that the benefits of LNG exports outweigh the costs to the rest of the economy. The inherent weakness of this proposition, as is common to this economic viewpoint, is that the benefits of the unregulated market in gas are largely accrued by the gas industry and its employees while the costs are born by the rest of the community and in particular by low income households and employees in gas-intensive, trade-exposed industries.

A more compelling argument is mounted by Monash University Economist Professor Stephen King who makes²⁷ the useful observation that reserving gas for domestic use at a lower-than-netback price

²² Samantha Hepburn 2014 "Australia needs gas reservation to protect industries and climate," The Conversation,

<http://theconversation.com/australia-needs-gas-reservation-to-protect-industries-and-climate-21267>

²³ Elliston, B., MacGill, I., Diesendorf, M. 'Least cost 100% renewable electricity scenarios in the Australian National Electricity Market', Energy Policy (in press) DOI: 10.1016/j.enpol.2013.03.038

<http://ceem.unsw.edu.au/sites/default/files/documents/LeastCostElectricityScenariosInPress2013.pdf>

²⁴ Giles Parkinson "Renewables now cheaper than coal and gas in Australia" Renew Economy, 7 February 2013

²⁵ Bloomberg New Energy Finance media release, February 2013, "Renewable energy now cheaper than new fossil fuels in Australia"

<http://about.bnef.com/press-releases/renewable-energy-now-cheaper-than-new-fossil-fuels-in-australia/>

²⁶ Op cit.

²⁷ Op cit

is economically equivalent to a subsidy on the gas price, paid for a tax on the exporters (or the drillers, depending on which party has the obligation to fulfil the reservation).

Taxing the export of an environmentally damaging commodity such as gas has many benefits and should be a policy option at the federal level.

However, providing price subsidies to a fossil fuel at the domestic level has severe adverse economic, social and environmental consequences and should not be a policy option.

Suppressing gas prices will unnecessarily impede the growth of renewable energy, destroy potential jobs and leave Australia with an appetite for cheap gas.

Options for responding to rising gas prices: rapid transition to renewables and efficiency

A free market response to rising gas prices is not an option, given the adverse impacts on low-income households and some employees.

Similarly, any attempt to impose price protection will have adverse environmental and employment consequences.

A rapid transition to a renewable electricity supply is now a realistic possibility²⁸, with substantial positive benefits for the long-term resilience of the economy, employment growth, human health, local environments and the global climate.

The starting point for designing a response to increasing gas prices should be the possibilities for cost-effective gas substitution with renewable-sourced electricity, other than in industries that use gas as a chemical feedstock.

This is a strategy that works with rising prices, not against them. It focuses on ensuring that low-income households do not face energy poverty and employees in gas-intensive, trade-exposed industries do not face unemployment.

In residential, commercial and industrial applications, where non-fossil gas is not a realistic option, the focus should be on identifying the barriers to transition to zero-greenhouse energy forms.

Rising gas prices will provide the economic impetus for substitution and improved efficiency but two forms of barriers inevitably arise:

- ◆ access to capital, and
- ◆ split ownership.

Access to capital is particularly binding for low-income households. Benefit sharing combined with low or zero interest loans can provide a financial pathway, provided there is an agency with the capacity and motivation to provide assistance where it is needed.

Given the economic scale of the task and the need to move rapidly, possibly in advance of price rises, there is a critical role for government and public sector agencies.

Profit-driven corporations are unlikely to be motivated to supply the services needed.

Privatisation of the state's electricity retailers is rapidly proving to have left NSW with fewer options for managing the transition away from gas.

²⁸ Elliston et al., op cit

There is a strong case for the recreation of public sector energy services agencies that can work with households and small businesses in a cooperative environment to manage bills. Such agencies could implement benefit-sharing schemes that pay back investments in new end use equipment without imposing large lumped costs onto consumers who cannot afford it.

Split ownership arises for example in rented accommodation where landlords are unlikely to be motivated to provide alternatives to existing gas water and space heating and cooking, which are provided through fixed appliances.

There is a strong case for regulatory standards that impose obligations on landlords to invest in alternatives that reduce gas price vulnerability.

The NSW government provides five energy assistance schemes²⁹:

- ◆ Low Income Household Rebate
- ◆ Family Energy Rebate
- ◆ Medical Energy Rebate
- ◆ Life Support Rebate
- ◆ Energy Accounts Payment Assistance (EAPA) vouchers

The EAPA is only for short-term financial crises and the medical and life support rebates are of limited application, as the names imply.

The Low Income and Family Energy Rebate schemes apply only to electricity bills.

These schemes should be extended to gas bills and be available to a wider class of households.

For the gas-dependent, trade-exposed industries that use gas as a chemical feedstock, research into alternative sources is urgently needed.

Further, the NSW government should develop a just-transitions package for workers whose employment is affected by rising gas prices. Each employee should have access to retraining and establishment in new quality jobs in the clean energy sector.

It would be appropriate for the costs of the rebates and the transitions to be funded by a levy against the exporters. If this were not politically feasible, an additional levy on the state's gas extraction industry would be an appropriate alternative source of revenue.

In contrast to artificial price suppression, this approach would benefit households and employed people, rather than energy-intensive corporations, while at the same time removing incentives for further gas extraction.

Conclusions: visions for a high employment future

NSW sits at the crossroads of energy policy.

Both government and opposition have at this stage rejected the Greens' call for a rapid transition to 100% renewable energy.

Yet all major parties at least pay lip service the potency of renewable energy and the possibilities of reducing vulnerability to fossil fuel prices and impacts.

The choice is now quite clear.

²⁹ <http://www.resourcesandenergy.nsw.gov.au/energy-consumers/financial-assistance/rebates>

NSW could respond by drilling for more gas, building more pipelines or artificially suppressing the price of gas.

Each of these strategies would lock the state into the past, leaving it exposed to international prices, resource scarcity and changes in national or international regulations on greenhouse gas emissions.

A forced change on someone else's timetable would inevitably rely on imported technology. Jobs would be lost and costs would soar.

Alternatively, NSW can get ahead of the curve by plotting a course that steers away from gas, towards high-employment clean technologies.

By determining our own future, rather than that which is dictated by the gas companies and the old-technology manufacturers, the state can begin to build new jobs in an economy that will lead the world in dumping fossil fuels.

This Committee should reject policy options that squander the early adopter advantage by protecting gas prices or drilling for more gas.

Instead it should look to a future driven by wind, sunshine and the capacities and imagination of the people of this state.