

BRIEFING PAPER

A 'GAS-FIRED RECOVERY' IS A POOR CHOICE FOR THE ECONOMY, JOBS AND THE TRANSITION TO A SAFER AND MORE RESILIENT FUTURE

This briefing paper is in response to industry and community concerns about the risks of poor economic recovery investments and in further increasing carbon emissions. It draws on reports, expert analyses and Geelong Sustainability's networks.

Background

Energy Minister Angus Taylor has spoken about a "gas-fired recovery" in having "demand for affordable gas matched with priority upstream investment opportunities to bring gas where it is needed and provide economic stimulus."¹

Neville Power (Chair, National COVID-19 Co-ordination Commission, NCCC) in concurring with Prime Minister Scott Morrison, who stated that gas must be the back-up fuel of choice, commented "In terms of gas, the critical thing is it is the mechanism that allows us to transition to baseload renewables in the fastest way...The key is more supply [of gas]".²

These positions are shared by few energy experts and especially not by those who have followed the growth and impact of renewables over the past decade. Furthermore, there appears to be significant conflicts of interests amongst members of the NCCC, and poor diversity in representation, and this undermines its legitimacy to make independent and good value-for-money recommendations. The leaks of NCCC's economic recovery plans are highly concerning as they propose deregulation of the gas industry, tax-breaks and requesting taxpayers to underwrite losses for private companies which offer increased environmental and financial risk for Australians³.

The absence of a Federal energy and climate policy and the delay in Victoria's announcement regarding its emissions reductions targets makes cost-benefit investment choices much more uncertain of course but, fortunately, several organisations like AEMO and Beyond Zero Emissions are filling that gap. Consistent with evidence from multiples and varied sources, Geelong Sustainability urges against a "gas-fired recovery" for seven key reasons.

Gas is a fossil fuel and its emissions have been increasing

Methane is the primary component of natural gas (hereafter, gas) and is a very powerful greenhouse gas when leaked into the atmosphere⁴:

- After CO₂, methane is the most important greenhouse gas contributing to human-induced climate change
- Methane's global warming potential is 86 times higher than carbon dioxide when averaged over 20 years and 28 times higher over 100 years
- Methane's emissions have grown by almost 10% since the decade of 2000-2006, and
- The atmospheric lifetime of methane is about nine years.

In Australia, methane emissions from the fossil fuel sector have increased due to expansion of the gas industry and associated "fugitive" emissions – those that escape or are released during gas production and transport. Australia's emergence as the world's largest gas exporter has helped drive global emissions higher overseas, as well as locally⁵.

Importantly, the upward trends in methane emissions are incompatible with meeting the goals of the Paris Agreement and avoiding dangerous climate change.

Gas is no longer a “transition” fuel and increasing emissions are dangerous and irresponsible

The idea of gas as a “transition” fuel arose in the time when wind and solar energy were expensive and little used but we are well beyond that point. The cost of solar has plunged 90% in the past decade, wind more than 60%⁶. In Australia we are already seeing batteries starting to compete directly with gas peakers, i.e. power sources that supply energy only occasionally. While we need capacity in gas peaking plants, we don’t need much gas to power them because they are never run for long. Gas peaking plants contributed only 1.8% of the national electricity market’s generation in the year to April 2020 while they account for 13.4% of capacity⁷. Gas usage in gas-fired power plants has declined by 59% since 2014 while renewables have increased to produce 25% of the energy in the national electricity market. **Clearly, more gas is not needed as a “transition” fuel⁸.**

The Australian Energy Market Operator (AEMO) has modelled a future electricity grid in its integrated system plan and has shown that, in a renewables-rich grid, the role of gas is smaller than it is today by 2040⁹.

The health impacts and risks from both climate change and fossil fuel combustion are considerable and well documented. For a local example, doctors have described Viva Energy’s proposed gas import and storage facility in North Geelong as a folly, warning that it poses risks to the local environment and to the health of local residents, as well as fuelling more dangerous climate change¹⁰.

All gas-burning appliances produce pollutants and can reduce indoor air quality, especially if the appliance is faulty, poorly maintained, or there is inadequate ventilation. Human impacts include carbon monoxide poisoning, increased asthma, reduced lung function and acute respiratory tract infections¹¹. The social impacts of a gas import and storage facility in North Geelong will extend further due to impacts on fishing, tourism, two schools and Ramsar wetlands (i.e. Limeburners Bay and the north coast of Corio Bay to Pt Wilson).

Bruce Robertson, energy analyst at the Institute of Energy, Economics and Financial Analysis (IEEFA) said “If LNG import terminals are built, Australia will be exporting Australian gas and then re-importing it for domestic supply to consumers at higher costs due to the expensive liquefaction, re-gasification and shipping costs involved” and, further that “Australia has abundant gas for everyone, and yet the gas companies would have us believe we are running out.”¹²

While there is growing enthusiasm for hydrogen as a key part of Australia’s energy mix, it is in Australia’s best interests to chart a renewable path rather than one based on brown (fossil-fuel produced) hydrogen. The hidden costs of fossil-fuelled hydrogen should be carefully estimated by experts, especially those in the environmental field. With regards to future exports, overseas markets for brown hydrogen appear unlikely, given the enormous push underway to scale-up the use of green power. Regardless, it is crucial that we implement proven renewable technologies now and invest in the R&D to bring those promising opportunities on-board in the near future.

Increased gas infrastructure displaces renewable energy and storage, not coal

Claims that gas reduces emissions presuppose that the gas displaces coal but, viewed in terms of energy transition scenarios consistent with mitigating climate change, increased gas infrastructure displaces renewable energy and storage and not coal. Similarly, gas used for heating houses, hot water and even many industrial uses displaces far cleaner electrical alternatives that can be run off renewable energy¹³. Hence increasing gas supply will UNDERMINE Victoria’s commitment to increasing renewables, slowing our transition to a zero carbon economy rather than accelerating towards it. Reducing demand for gas by increasing energy efficiency in households and businesses and fully embracing the switch to renewables would remove the need for developing any further gas supplies, hence avoiding wasting investment in projects which provide little lasting benefit to the economy or households¹⁴.

Even in the narrow, and largely irrelevant, case of a comparison of coal and gas emissions for electricity generation there are significant questions about whether gas has a significant emissions advantage over coal. If small amounts of methane leak into the atmosphere through mining, processing or transport of gas, the emissions impacts increase¹⁵. Research has shown that gas has no benefit over coal for electricity

production if methane leakage exceeds 3.2% of total production¹⁶. Atmospheric testing on methane emissions on unconventional gas developments in the US has found levels of 2 to 17%¹⁷.

Investing in more gas will not provide a “jobs-led recovery”

The gas industry is one of the least labour-intensive industries in Australia, providing around one eighth of the jobs per dollar spent across the average for all Australian industries.

For every million dollars of sales income, only around 0.4 jobs are created on mining gas. The average for all Australian industries is 3.4 jobs. Investing recovery funds in virtually any other industry would create more jobs¹⁸.

The vast majority of Australians working in power generation are working in renewables, even though renewables only make up 25% of electricity production¹⁹. The data shows renewables are able to employ large numbers of Australians and numbers can be ramped up quickly. As the cheapest form of new power generation, even with storage, there are clear co-benefits for the electricity market.

We already have enough gas and there are risks in further investment

The recent steep drop in electricity demand, down by more than a fifth in some parts of the world, has hit energy producers everywhere. But because renewable energy has zero variable costs (since the sun and wind are largely free once solar and wind farms are constructed) coal and natural gas are often pushed out of the market first²⁰.

Bruce Robertson (IEEFA) said that the COVID-19 pandemic has highlighted the weak investment case for gas²¹. “Globally there is a massive surplus of gas, with prices at all-time lows. Major oil companies are withdrawing from the local gas industry. Conoco Phillips sold its Northern Territory assets last year and Shell, Chevron and Exxon are looking to exit \$11 billion worth of assets. The domestic gas companies, Woodside, Santos and Origin, are cutting exploration and project budgets as they struggle to survive low prices. The Chair of the Australian Energy Regulator recently warned that if the gas pipeline industry did not convert to green hydrogen it faced a shortened economic life.”

The risk is recognised by our country’s major financial institutions and regulators, and has increasingly become a focus for shareholders. Earlier this year they gave resolutions calling for climate action and transparency at Woodside and Santos more than 50% and more than 40% support, respectively²².

A recent report published by the US-based Global Energy Monitor has issued a dire warning about the future prospects for the global gas export industry²³: “Even though only a small portion of the planned increase in liquid natural gas capacity had gone into operation, gas markets worldwide were so oversupplied that prices had fallen far below the levels considered necessary for expensive new infrastructure to be viable.”

The warnings about the transition risks from climate change have been broadcast for several years now. A 66 member coalition of central banks, including the RBA, prepared its first set of standardised climate scenarios for future climate risk assessment, revealing limited climate action could lead to around a quarter or more of global GDP being shed by 2100²⁴.

The warnings about investors exiting from, and accumulating stranded, fossil-fuel assets due to climate change is not new. In 2015, Mark Carney (then Governor of the Bank of England) spoke about the physical, legal and financial risks with climate change. Regarding financials, he said that these “could result from the process of adjustment towards a lower-carbon economy. Changes in policy, technology and physical risks could prompt a reassessment of the value of a large range of assets as costs and opportunities become apparent.²⁵” So, carbon-intensive projects potentially worth trillions risk becoming next-to worthless – stranded – if investors abandon them in favour of emissions-free technology, as required to meet the goals of the Paris Agreement²⁶.

Demand management is not adequately considered in addressing any shortfalls in gas supply

Solutions to any gas shortages are available within existing resources. Corporations should not be allowed to build new infrastructure to explore, process, store and transport gas. While not the only solution, demand management is relatively cost-free, will be publicly acceptable and should be pursued with urgency.

There are many measures that governments can take to get households and businesses to reduce dependency on gas.

Taking the Victorian gas market as an example, analysis commissioned by Environment Victoria²⁷ shows that the state could more than halve its gas consumption by 2030 through a handful of measures:

- Replace ageing ducted gas heating systems
- Replace gas hot water with electric heat pump hot water
- Use existing reverse-cycle air-conditioners for space heating
- Electric heat pump space heating in commercial buildings
- Improve industrial gas use efficiency, and
- Adopt renewable-energy powered process heating in industry.

Australia is a major exporter of gas and so we have abundant resources. Furthermore, we have policies in place to ensure that we will never run out of gas for our own use. The Australian Domestic Gas Security Mechanism is in place to ensure there is a sufficient supply of natural gas to meet the forecast needs of energy users within Australia. "If there is a supply shortfall in the domestic market, LNG projects may be required to limit their exports or find new gas sources".²⁸

The smartest, safest, cleanest and only sustainable investment is in renewables

Confidence is rapidly growing in renewables dominating our future energy supplies. However, the RBA estimates that investment in renewable energy has moderated from its recent peak and is likely to decline further over the next year or two. "The pace of future investment will depend on factors including wholesale electricity prices, the government policy environment and electricity grid considerations. Investment in the transmission network and energy storage will help support a continued increase in renewable energy generation²⁹."

The future of Australia's main federal body supporting clean energy research, The Australian Renewable Energy Agency, is in doubt as its funds dwindle to less than \$70m. There is no indication on whether the Australian Government will replenish it³⁰.

AEMO's draft integrated system plan shows how Australia's grid could and should be managed under a range of different transition scenarios³¹. These scenarios range from "Slow Change" – which is consistent of a world controlled by fossil fuel interests and delivers a catastrophic rise in average temperatures – all the way through to "Step Change", a new scenario developed to consider what must be done to try to keep global warming as close as possible to 1.5°C³².

AEMO's "Step Change" outlines a plan to reach around 90% renewables by 2040. The bulk of this generation comes from large-scale wind and solar, supported by distributed (mostly rooftop) solar, along with hydro power, and "dispatchable" technologies such as pumped hydro, big batteries, and household batteries aggregated in "virtual power plants". Black and brown coal are virtually eliminated from the grid, and gas is also priced out by cheaper and more efficient storage technologies. At least 30GW of new wind and solar will be needed, and up to 47GW, and significant amounts of dispatchable capacity. AEMO warns that delays may well set back the grid's low-carbon transition and force it to lean more heavily on costly and polluting gas³³.

In his book *Superpower*, economist Ross Garnaut argues that, with Australia's unparalleled renewable energy resources and excellent scientific skills, we could be the natural home for an increasing proportion of global industry³⁴. He says "With gas priced out of long-term balancing of intermittent renewables by the move to export parity pricing in eastern Australia, it is becoming clear that storage will play the major role in providing reliability in the National Electricity Market ... Storage will need to be supported by long-distance transmission and demand management."

ClimateWorks has demonstrated that Australia can achieve net zero emissions before 2050 through accelerated deployment of mature and demonstrated zero-emissions technologies, and the rapid development and commercialisation of emerging zero-emissions technologies in harder to abate sectors³⁵. In all of its scenarios, electricity generation reaches about 75% renewables by 2030 and 100% by 2050. The

key factor influencing the speed of the transition to renewable electricity is the rate at which coal generation, and then gas, exits the system.

Beyond Zero Emissions (BZE) has released its *Million Jobs Plan*, the first stage in its project to find and deliver one million new, good, secure, and well-paying jobs, to help rebuild our economy after COVID-19³⁶. The multitude of jobs in clean energy and low emissions industries are brought to life through case studies and ideas from BZE's Zero Carbon Communities and its Business and Industry Partners.

Reducing reliance on gas requires minimising energy use and replacing household gas appliances with clean electric alternatives. Regarding manufacturing, BZE says "It is highly unlikely that Australian manufacturers will ever regain a competitive advantage based on cheap gas. However, in a decarbonising world Australia has a far more compelling competitive advantage – exceptional potential to generate renewable energy."

Internationally, the landscape is changing fast. The European Commission has already announced a A\$1.25t green stimulus plan, that will help the European Economic Zone emerge from the economic crisis while tackling climate change³⁷. If Jo Biden is elected as the next US President, he has promised a national effort aimed at creating the jobs needed to build a modern, sustainable infrastructure and deliver an equitable clean energy future³⁸.

Summary

Australia desperately needs a vision for the 21st Century and investments in 2020 need to be prioritised by those that optimise job creation, community resilience, sustainability and decarbonisation. We also need to reverse the rising inequalities in our country, which will only be exacerbated from climate change.

We have not seen a "gas-fired recovery" business case that ticks those boxes and we are very unlikely to do so. If our recovery spending is squandered on subsidising the gas industry, we will gain few jobs, and lock in high energy prices and emissions for Australian manufacturing for decades to come³⁹. We will also miss a great opportunity to reduce emissions, act on climate change and emerge as a global energy superpower.

On the local front, Viva Energy's proposal for a gas import terminal co-located with the Geelong Refinery is very unlikely to reduce prices for customers. Further, the import terminal, along with plans for other sites, will further the risk of stranded assets and lock-in increasing carbon emissions and numerous health and environmental risks.

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⁶ <https://reneweconomy.com.au/lets-talk-about-gas-its-expensive-dirty-and-struggling-to-compete-with-batteries-44419/>

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¹³ <https://www.tai.org.au/content/gas-fired-backfire>

¹⁴ <https://environmentvictoria.org.au/2020/06/03/victorian-gas-market-demand-side-measures-to-avoid-forecast-supply-shortfall/>

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¹⁶ <https://www.pnas.org/content/109/17/6435>

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²⁰ <https://oilprice-com.cdn.ampproject.org/c/s/oilprice.com/Energy/Energy-General/The-Pandemic-Has-Been-A-Major-Boon-For-Renewable-Energy.amp.html>

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