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Senate Economics References Committee inquiry into Australia's oil and gas reserves: Submission 2

The Senate Economics References Committee is conducting an inquiry into Australia's oil and gas reserves. The Australia Institute welcomes the opportunity to make a second submission to this inquiry highlighting recent research on Australia's oil and gas that relate to the inquiry's terms of reference published since the original submission. As such it should be read in conjunction with the original submission.

The Australia Institute also welcomes the opportunity to discuss research findings in further detail at the committee hearing.

The Australia Institute has appended to this submission the full reports referred to below.

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Submission

SUMMARY

Australians gain so few benefits from the annual $50 billion Liquefied Natural Gas (LNG) exports from Australia that it could be fairly characterized as our governments virtually giving the resource away.

Few of the predominantly foreign owned companies we allow to extract and export Australian gas pay any company tax. Few pay any Petroleum Resource Rent Tax (PRRT) and look unlikely to pay it in the future. None of the companies involved in coal seam gas LNG projects in Queensland have paid any corporate tax in the last four years, and they are not subject to the PRRT.

Some of the largest LNG projects in Australia including Wheatstone, Pluto and Prelude not only pay no company tax or PRRT, but are not subject to any state royalties either. In these cases, Australian governments are literally giving the resource away.

Other countries that export hydrocarbons including Norway, Malaysia, the UEA and Qatar extract far greater benefits from the exploitation of their resources than Australia.

Even though Australia receives so little return from the oil and gas industry the Australian Government continues to subsidise them generously. In the 2021 budget alone the Government committed up to $2.9 billion in subsidies to the oil and gas industry.

Australian taxpayers are also at risk of being left with massive decommissioning liabilities of around $60 billion, although recent legislative changes to prevent offshore gas companies avoiding their decommissioning liabilities offer Australian taxpayers some level of protection.

The gas industry continually highlights its contribution to employment to the point that Australians overestimate the number of people working in the oil and gas industry by a factor of 40.[1] In fact, the oil and gas industry is a small employer, employing just 0.3 percent of the Australian workforce. For comparison purposes, for every person who works in gas there are 56 people who work in the heath sector. It is also one of the

[1] Quicke and Bennett (2020) *Climate of the Nation 2020*, https://australiainstitute.org.au/wp-content/uploads/2020/12/Climate-of-the-Nation-2020-cover-WEB.pdf

least labour intensive industries in Australia employing just 0.4 workers per million dollars output compared with over 10 workers in education or health.[2]

Australia often makes the mistake of focusing on gas supply rather than demand side and fuel switching opportunities. Australians need lower energy prices rather than low gas prices. Fortunately, there are far lower cost alternatives than gas for virtually all the major uses of gas in Australia including electricity generation, heating, hot water and cooking. The manufacturing sector is more challenging but there are significant opportunities for fuel switching that would result in large energy and cost savings.

The acceleration of climate impacts, the recent IPPC report and the International Energy Agency roadmap that excludes any new oil and gas development highlight the urgency of shifting away from this polluting and expensive fuel.

TAX

As shown in Table 1 below, few of these companies pay any Australian company tax or Petroleum Resource Rent Tax (PPRT) at all.

[2] Saunders and Dennis (May 2021) *Too little too late Gas in the COVID recovery*, https://australiainstitute.org.au/wp-content/uploads/2021/05/Too-little-to-late-WEB.pdf

Table 1: Tax and PRRT paid by WA LNG producers 2018-19

LNG Producer	Total Income	Taxable Income	Tax Paid	PRRT Paid
BHP Companies*	$43,059,226,136	$16,278,812,031	$0	$604,858,173
BP Regional Australiasia Holdings Pty Ltd	$23,677,819,311	$1,535,208,625	$455,846,218	$0
ExxonMobil Australia Pty Ltd	$13,293,222,200	$0	$0	$0
Chevron Australia Holdings Pty Ltd	$11,986,037,153	$900,117,295	$0	$0
Woodside Petroleum Ltd	$8,199,321,733	$1,991,703,841	$0	$0
Shell Energy Holdings Australia Ltd	$5,531,026,873	$318,645,923	$0	$0
Santos Companies*	$5,322,312,733	$46,289,914	$3,112,393	$78,767,439
QGC Upstream Holdings Pty Limited	$3,985,352,867		$0	$0
Japan Australia LNG (MIMI)	$2,224,454,174	$1,171,615,733	$348,888,493	$0
CNOOC Companies*	$2,100,806,238	$117,661,600	$35,298,480	$0
ConocoPhillips Australia Gas Holdings Pty Ltd	$1,592,059,105	$29,214,658	$0	$0
KUFPEC Australia Pty Ltd	$1,297,068,670		$0	$0
Inpex Companies*	$1,132,212,147	$18,928,641	$5,645,305	$0
Petronas Australia Pty Limited	$1,107,168,028		$0	$0
Tokyo Gas	$720,498,931	$44,920,448	$0	$0
Kogas Australia Pty Ltd	$667,825,073		$0	$0
PE Wheatstone	$391,547,912		$0	$0
Sinopec Oil and Gas Australia Pty Ltd	$370,722,823	$0	$0	$0
Kansai Electric Power Holdings Pty Ltd	$267,359,092	$86,544,485	$0	$0
Osaka Gas Australia Pty Ltd	$159,870,052		$0	$0
Kyushu Electric Australia Pty Ltd	$133,259,277	$4,783,353	$0	$0
Australia Pacific LNG Pty Ltd	$7,207,473,146		$0	$0
ConocoPhillips Australia Gas Holdings Pty Ltd	$1,592,059,105		$0	$0
Sinopec Oil and Gas Australia Pty Ltd	**$370,722,823**		$0	$0
Total E&P Holdings	1,021,427,560		$0	$0

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Source: ATO (2020) *2018-19 Report of Entity Tax Information*, https://data.gov.au/data/dataset/corporate-transparency/resource/827f68ea-83c0-440e-bb6d-4118644b7efd

*Note: BHP Companies refers to BHP Billiton Petroleum's Australia, Bass Strait and Victoria subsidiaries; Santos Companies refers to Santos Limited and Santos WA Energy Holdings Pty Ltd; CNOOC Companies refers to CNOOC Australia Energy Capital Management Pty Ltd and CNOOC Gas and Power (Aus) Investment Pty Ltd, Inpex Companies refers to Inpex Australia Pty Ltd and Inpex Holdings Australia Pty Ltd.

The PRRT is rendered ineffective by a combination of an overly generous uplift rate, transfer pricing arrangements that allow companies to price the gas in a way that minimizes the taxable profits, and a low overall rate. [3]

Onshore gas projects in Queensland were subject to the PRRT prior to 2019. However, the Government removed the PRRT from onshore gas projects following the Callaghan review of the PRRT even though the review did *not* recommend removing it.[4] As such these projects are not subject to any resource rent tax.

In contrast to Australia, most other countries with hydrocarbon deposits have ownership vested in the State and require joint ventures, partnerships, production sharing and other arrangements to be made with the relevant government/s or state-owned oil companies. The implied company/PRRT equivalent overseas is often very many times the Australian rate.

For example, in the UAE the general company tax rate is zero but is 50 per cent in the case of companies in the oil and gas sectors. Norway imposes a 78 per cent tax on super profits in the petroleum sector, a figure that does not include royalties, production/profit sharing and other arrangements, as noted in APPEA's submission to this review and the Henry Tax review.[5]

As well as paying little or any company tax and no PRRT, several large LNG projects including Prelude, Wheatstone and Pluto pay no state royalties either.[6] As such federal and state governments are literally being given the resource for free.

Despite generating 25 percent less income than the oil and gas industry, the metal ore industry in Australia (predominantly iron ore) paid around four times more tax ($6.5 billion) in 2018/19. In Western Australia, the country's largest producer and exporter

[3] Richardson and Campbell (February 2017) *Review of the Petroleum Resource Rent Tax*, https://australiainstitute.org.au/report/review-of-the-petroleum-resource-rent-tax/, Campbell (June 2019) *Petroleum Resource Rent Tax Gas Transfer Pricing Review*, https://australiainstitute.org.au/wp-content/uploads/2019/11/Attachment-The-Australia-Institute-relevant-reports-Inquiry-Australias-oil-and-gas-reserves.pdf

[4] ACIL Allen (20 March 2019) *Submission to Senate Standing Committees on Economics: Removal Of Onshore Petroleum Projects from PRRT*, https://www.google.com/search?q=ACIL+Allen+(20+March+2019)+Submission+to+Senate+Standing+Committees+on+Economics%3A+Removal+Of+Onshore+Petroleum+Projects+from+PRRT&rlz=1C1GCEA_enAU863AU865&oq=ACIL+Allen+(20+March+2019)+Submission+to+Senate+Standing+Committees+on+Economics%3A+Removal+Of+Onshore+Petroleum+Projects+from+PRRT&aqs=chrome..69i57.575j0j7&sourceid=chrome&ie=UTF-8

[5] Wood Mackenzie (2017) *Independent Report on the PRRT Review in Australia*, p31.

Carter (August2021) *Gas-fired robbery: Assessing the economic contribution of LNG to Western Australia* (Tabled)

of both LNG and iron ore, LNG royalties amounted to $650 million in 2019/20, whereas iron ore royalties amounted to around $7 billion.[7]

SUBSIDIES

Even though Australia receives so little return from the oil and gas industry the Government continues to subsidise them generously. In the 2021 budget alone the Government committed up to $2.9 billion in subsidies to the oil and gas industry. [8]This includes $2 billion in assistance to oil refineries, $174 million to upgrade roads for fracking trucks in the Northern Territory and up to $600 million for a gas fired power station that the Government's key advisers including the Energy Security Board (ESB)[9] and the Liddell Taskforce advised were unnecessary.[10]

The industry itself has identified $52 billion of decommissioning costs that National Energy Resources Australia (NERA) describes as a "multi-generational challenge for Australia." It is worth reflecting on the fact that the industry considers its $52 billion clean-up liabilities a challenge for Australia, rather than entirely its own responsibility.[11]

The Australian Government's recent "trailing liability" amendment[12] to the Offshore Petroleum and Greenhouse Gas Storage Bill gives government call-back powers to force previous owners of offshore oil and gas infrastructure to pay for decommissioning if the current owner cannot. It is a welcome improvement that gives Australian taxpayers a measure of protection from the decommissioning liabilities of

[7] ATO (October 2020) *Company Statistics, Company detailed table, Table 4*, https://www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Taxation-statistics/Taxation-statistics-2018-19/?page=7#Companydetailedtables

[8] Saunders and Dennis (May 2021) *Too little too late Gas in the COVID recovery*, https://australiainstitute.org.au/wp-content/uploads/2021/05/Too-little-to-late-WEB.pdf

[9] Murphy and Karp (April 2021) *Australian energy board chair says gas-fired power plant in Hunter Valley 'doesn't stack up'*, https://www.theguardian.com/environment/2021/apr/30/australian-energy-board-chair-says-gas-fired-power-plant-in-hunter-valley-doesnt-stack-up

[10] Tingle (September 2020) The wrong answer for an energy crisis that does not exist, https://www.afr.com/politics/federal/the-wrong-answer-for-an-energy-crisis-that-does-not-exist-20200918-p55wvx

[11] National Energy Resources (10 March 2021) *NERA leads oil and gas giants in collaboration to address Australia's decommissioning challenge*, https://www.nera.org.au/News/CODA-launch/CODA-launch

[12] Parliament of Australia (2021) *Offshore Petroleum and Greenhouse Gas Storage Amendment (Titles Administration and Other Measures) Bill 2021*, https://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r6714

the oil and gas industry. However it should be noted it doesn't apply to onshore gas projects including the massive CSG LNG projects in Queensland.

JOBS

The generous treatment of the oil and gas industry is often rationalised on the basis of jobs. However, the oil and gas industry is small employer, employing just 0.3 percent of the Australian workforce. For comparison purposes, for every person who works in gas there are 56 people who work in the heath sector. It is also one of the least labour intensive industries in Australia employing just 0.4 workers per million dollars output compared with over 10 workers in education or health.[13]

Australia Institute analysis shows that if the $2.9 billion of subsidies to the oil and gas industry in the in the 2021-22 budget had been spent on health and eduction it would have created over 19,000 jobs (mostly female) compared with around 1,800 jobs (80 percent male) in the oil and gas industry. [14]

While the oil and gas industry presented itself as a bastion of jobs during the pandemic, it cut 3,800 jobs, 10 percent of its workforce between in the year to May 2021. If all industries had behaved the same way, Australia would have had an additional 1.3 million unemployed workers and 15 percent unemployment.[15]

REDUCING GAS DEPENDENCE

Gas reserves should not be considered in isolation from demand side measures and fuel switching. Australia has long made the mistake only focusing on the supply of gas rather than opportunities to in fuel switching and energy efficiency that can provide the same energy services to Australian consumers at a lower cost.

Australians don't need lower gas prices, they need lower energy prices. If the government was serious about lowering energy costs and creating jobs, they would focus on reducing our dependence on this expensive and polluting fuel.

[13] Saunders and Dennis (May 2021) *Too little too late Gas in the COVID recovery*, https://australiainstitute.org.au/wp-content/uploads/2021/05/Too-little-to-late-WEB.pdf

[14] Saunders and Dennis (May 2021) *Too little too late Gas in the COVID recovery*, https://australiainstitute.org.au/wp-content/uploads/2021/05/Too-little-to-late-WEB.pdf

[15] Ogge and Campbell (February 2021) *When the going gets tough…the gas industry sacks workers, Recent job cuts in the Australian oil and gas industry*, https://australiainstitute.org.au/report/when-the-going-gets-toughthe-gas-industry-sacks-workers/

The “gas-fired recovery” is focused entirely on the supply of gas. It ignores other ways of supplying energy, particularly through renewable energy, using electricity instead of gas, and simply reducing gas use through energy efficiency.

Gas prices will inevitably increase as LNG companies continue to export vast quantities of Australia’s more accessible lower cost gas, leaving only more remote and difficult to extract gas for Australian customers.

The only way for Australian households and businesses to get off this upward energy cost spiral is to reduce their dependence on gas.

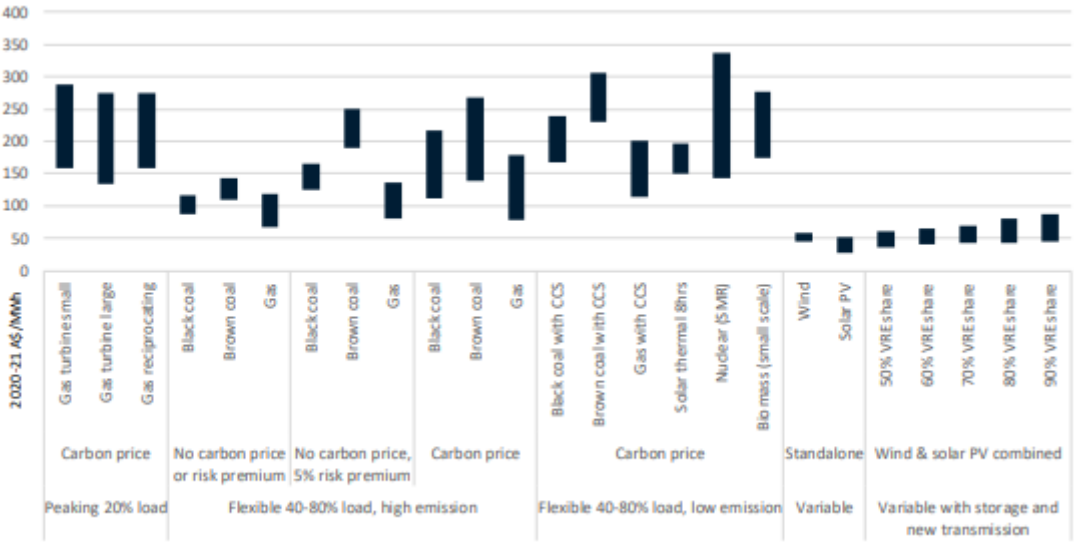
Renewable energy is already far cheaper than gas for providing electricity, and electricity is cheaper than gas for household uses including heating, cooking and hot water.

Most manufacturing processes don’t require gas per se, but energy, predominantly for heat. Fortunately, this can often be provided by electricity, often at a far lower cost than gas.

Electricity generation

As shown in Figure 5 below, CSIRO analysis of the relative cost of producing electricity from various technologies shows renewable energy is far cheaper than gas even when the cost of new transmission and energy storage is added, no matter how high the share of renewable energy in the grid.

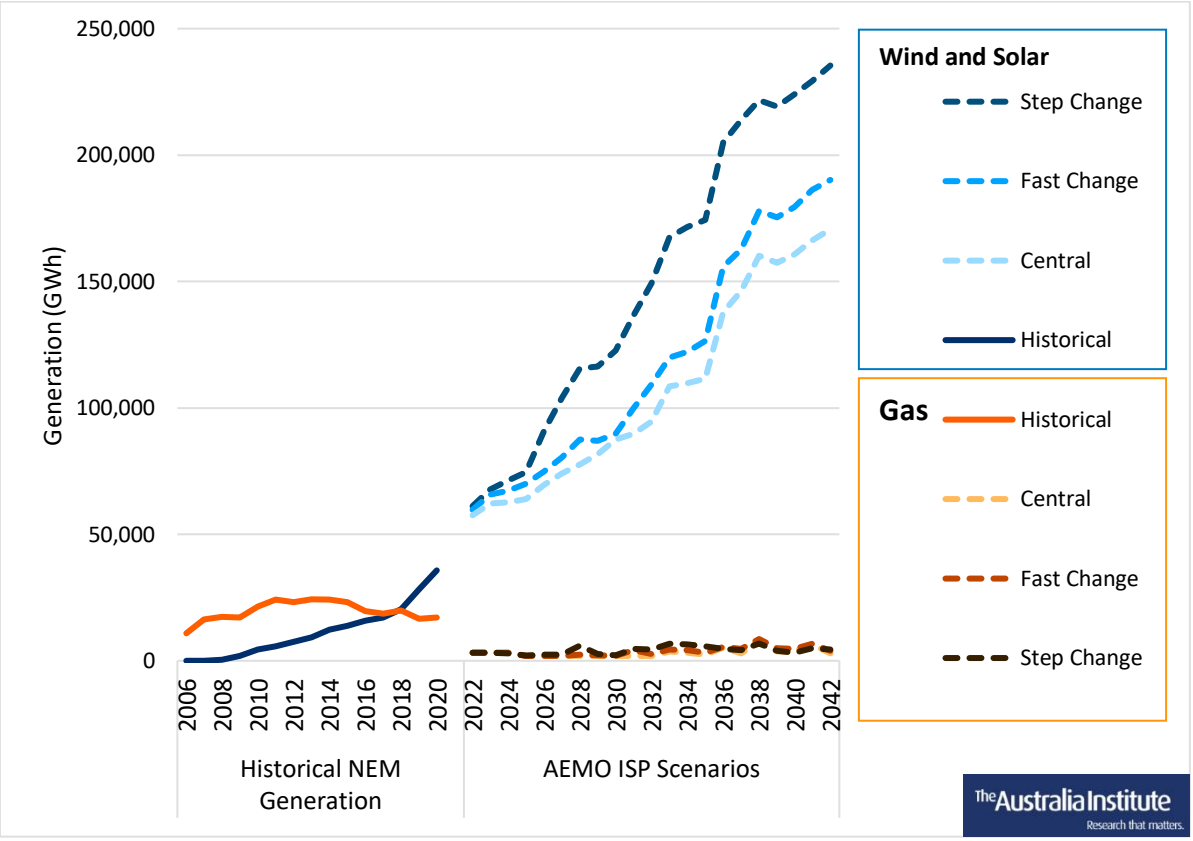
Figure 1: Calculated LCOE by technology and category for 2020



Source: Graham et al (December 2020) *GenCost 2020-21 Consultation draft,* https://publications.csiro.au/rpr/download?pid=csiro:EP208181&dsid=DS1

The Australian Energy Market Operator's Integrated System Plan (AEMO ISP) examines lowest cost development of the NEM over coming decades. In the key scenarios, shown in Figure 6 below, gas-fired electricity collapses and remains low over coming decades, while renewable energy generation grows very strongly.

Figure 2: Gas vs renewables in the NEM – historical & AEMO ISP optimal scenarios



Source: OpenNEM (2020) OpenNEM: An Open Platform for National Electricity Market Data, AEMO (2020) *2020 Integrated System Plan* (ISP), 2020 ISP Generation Outlooks, Scenario 2 for "optimal path" in each case, optimal development pathway for each scenario, as per Table 10 in ISP report.

The AEMO scenarios are "derived by minimising total system cost". AEMO notes that "in practice" gas use may be higher for a range of reasons, like emergency events and "contract positions and strategic bidding by generators", but ads where these factors increase gas generation they also "increase costs to consumers".[16] The immediate reduction of gas use in the ISP modelling indicates gas consumption is associated with higher system costs.

Heat

Most gas is used to create heat. It is used in our homes for space heating, hot water and cooking, and in industry to create heat for industrial processes.

[16] AEMO (2020) *2020 Integrated System Plan (ISP)*, p.56, https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp/2020-integrated-system-plan-isp

Fortunately, there are now there are many efficient electrical alternatives for creating heat in our homes, businesses and industry that also cost less than gas.

Residential

Victoria is the largest consumer of gas in the residential sector, consuming almost half the amount of gas in 2019 (168 PJ) as used in manufacturing across Australia (372 PJ).[17] Almost all of this is used for heating houses and hot water, with a small proportion used for cooking.

Because heating is seasonal, Victorian residential gas use creates large peaks in winter demand for gas. Reducing those peaks alleviates potential shortfalls that result largely from gas pipeline constraints.

Ducted gas heating makes up around 70% of Victorian residential gas use and is extremely inefficient. Efficient electrical heat pumps with a Coefficient of Performance (COP) of between 4 and 6 can deliver the same amount of heat as ducted gas heating using around one tenth of the energy. Heat pumps can also be used to heat hot water, requiring at least 50% less energy than gas hot water systems. Electrical induction cooktops use around 50% of the energy of gas cooktops.[18]

All of these efficient electrical appliances cost far less to run than gas, and modelling has shown switching from gas to electricity can save many households hundreds of dollars each year.[19] The cost of buying new appliances is a barrier to switching from gas, however, many gas appliances are old, and customers are increasingly replacing them with electrical systems. These processes can be accelerated by appropriate policies including replacing gas heating with efficient reverse cycle air-conditioners in public housing, as well as providing incentives to other households to switch.

Northmore Gordon estimates that gas demand in Victoria can be reduced by up to 113 PJ/year through measures with a zero to moderate cost.[20] Coincidentally, this is the same amount of gas used by the entire Australian chemical, polymer and rubber manufacturing sector in 2019.

University of Melbourne research recommends switching 50% of the Victorian gas heating load to heat pumps.

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[17] AES (2020) *Australian Energy Update 2020*, Table F, https://www.energy.gov.au/publications/australian-energy-update-2020

[18] Northmore Gordon (2020) *Victorian Gas Market – Demand Side Measures to Avoid Forecast Supply Shortfall,* pp 20-22, http://environmentvictoria.org.au/wp-content/uploads/2020/06/Vic-Gas-Market-Demand-Side-Study-Final-Report-1.pdf

[19] Moyse et al (2014) *Are we still Cooking with Gas? Report for the Consumer Advocacy Panel*, https://renew.org.au/wp-content/projects/CAP_Gas_Research_Final_Report_251114_v2.0.pdf

[20] Northmore Gordon (2020) Op. Cit. p.4

They estimate this would free up 180 TJ/day (70 PJ/year), the equivalent amount of gas that would be provided by the controversial Narrabri Gas Project if it goes ahead.[21] If LNG exports were capped, preventing gas savings from being exported, this gas would add to the domestic gas supply available to manufacturing.

This research also estimates switching 50 percent of the Victorian gas heating load to heat pumps will add around 2 GW to Victorian peak winter electricity demand with the total annual demand requirement equivalent to the output of about 1.5 GW of installed wind power.[22]

Australian Energy Regulator (AER) data on state peak electricity demand in Victoria shows over the last 3 years summer peak demand has been between 1.6-2 GW higher than winter peak demand in winter, suggesting there is significant winter redundancy to absorb much of the additional electricity load.[23]

The University of Melbourne research also recommends reserving a minimum of 550 TJ/day of Queensland CSG to restore the allocation of Queensland CSG to the domestic prior to the opening up of LNG exports in 2015.

Manufacturing

There are also significant opportunities to reduce gas dependency in the manufacturing industry itself. Almost all the gas used in manufacturing is used to create heat. Just as domestic heat pumps can create heat for homes, industrial scale heat pumps can replace gas to create heat for temperatures up to 150 degrees.[24] While electrification delivers ongoing energy cost savings for manufacturers, the initial capital outlay is still a barrier.

In its 2020-21 budget submission, the manufacturing industry body Ai Group recommended the Commonwealth Government establish a $500 million industry energy transformation fund.

The fund would allocate $500 million over two years for capital grants to rapidly scale up the penetration of existing technologies that are widely used overseas but uncommon in the Australian market. These include electrification of industrial processes with industrial scale heat pumps and electric induction furnaces, as well as energy management systems to enable demand response.

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[21] Sandiford and McConnell (2020), Op. Cit p.1

[22] Sandiford and McConnell (2020*) The gas-fired recovery - new supply v. fuel switching with reservation,* https://melbourne.figshare.com/articles/online_resource/The_gas-fired_recovery_-_new_supply_v_fuel_switching_with_reservation/13133477

[23] AER (2020*) Seasonal peak demand – regions*, https://www.aer.gov.au/wholesale-markets/wholesale-statistics/seasonal-peak-demand-regions

[24] 2XEP (2017*) High Temperature heat pumps for the Australian food industry*, https://022fdef7-26ea-4db0-a396-ec438d3c7851.filesusr.com/ugd/c1ceb4_9b0221a90abf44d18fdc8f393afd9b31.pdf?index=true

Ai Group estimate this funding with a matching rate of 1:1 "would deliver $1 billion of manufacturing investment, equivalent to between 150 and 1,000 electrification projects" enabling facilities to reduce their energy bills by between 5-50% and create "7,000 job-years of employment."[25]

EXTERNALITIES

The oil and gas industry is one of the largest sources of greenhouse gas emissions in the world, and yet contributes virtually nothing to the cost of the impacts. As noted above most of these companies also pay little if any tax.

The costs of these impacts is paid by Australians including through increased taxes, rates, insurance premiums and loss and damage.

It is a fundamental principal of economics that companies should pay the cost of their externalities. As such, the Australia Institute recommends the LNG exports are subject to a levy to contribute to a National Climate Disaster Fund to contribute to the costs their activities are imposing on the Australia community.[26]

CONCLUSION AND RECOMMENDATIONS

Emissions resulting from Australian oil and gas are massive and are contributing to accelerated climate change. As an industry, oil and gas is wrecking the climate and barely paying a cent to do so.

The International Energy Agency have said no new oil and gas fields should be approved anywhere from now on period, and the latest IPCC report underlines the urgency of closing this industry down. Its matter of making sure we extract the maximum benefit for Australians during that wind down, and making sure we are not left with their massive clean-up costs

The Australia Institute recommends:

- No new oil and gas projects are approved in line with the recent IEA and IPCC reports.
- The PRRT be reformed by

[25] AI Group (2020) *AI Group 2020-21 Budget Submission*, p.23, https://cdn.aigroup.com.au/Submissions/Budget/2020/Ai_Group_BUDGET_SUBMISSION_24_August_2020.pdf

[26] The Australia Institute (2019) *The National Climate Fund,* https://australiainstitute.org.au/initiative/the-national-climate-disaster-fund/

- reduction in the uplift factor,
- elimination of transferability of uplift,
- a net-back only approach as the default method for determining a gas transfer price
- Increasing the rate of the PRRT to 70 percent

- A North West Shelf type royalty scheme be imposed on all other Western Australian LNG projects.
- As a matter of urgency, ensure proponent sufficient funds are available in advance for the estimated $60 billion of future decommissioning liabilities.
- A climate levy is imposed on all LNG exports to pay for the climate externalities resulting from the greenhouse gas emissions of these projects that are currently being shouldered by the Australian community.