

Gaslighting Australia: why the gas industry is an emerging climate and environmental disaster



**AUSTRALIAN
CONSERVATION
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The situation

Energy Minister Angus Taylor wants Australia to have a **'gas-fired recovery'**. The government's Technology Investment Roadmap discussion paper **advocates an expansion of gas** as a way to smooth the transition to renewable power generation. But how dirty is gas? And has its time as a 'transition fuel' already come and gone?

This short report looks at the state of gas projects in Australia and its contribution to our climate problem.

The push for a **gas-led recovery**

A leaked report by the National COVID-19 Coordination Commission's Manufacturing Taskforce gives insights into that new and powerful body's plans for Australia's economic recovery.

The Commission intends to use public money to underwrite a huge expansion of domestic gas, which it says would provide cheap energy to energy-intensive industries.

The report echoes calls from Energy Minister Angus Taylor, Resources Minister Keith Pitt and Shadow Resources Minister Joel Fitzgibbon for gas, a polluting fossil fuel, to be a key driver of Australia's economic recovery.

Worryingly, the National COVID-19 Coordination Commission report does not contain a carbon budget or make any connection to the impact of its proposals on climate change, or Australia's commitments under the Paris Agreement.

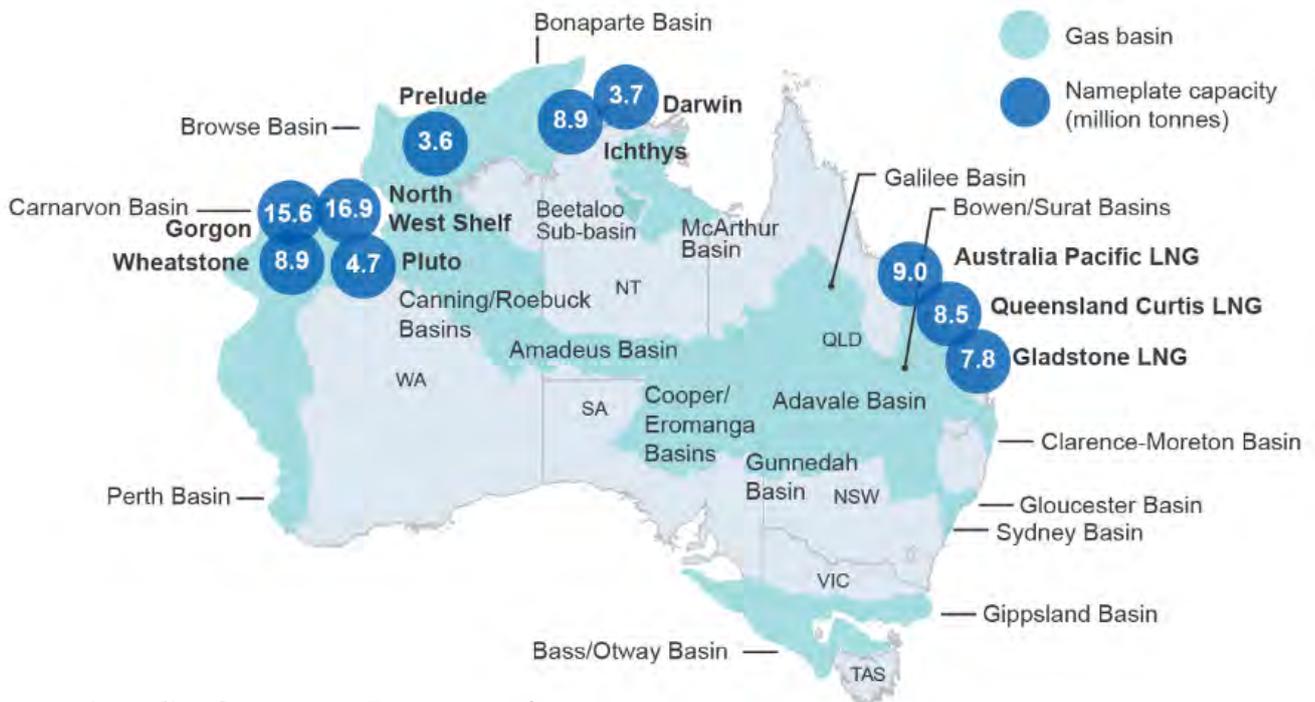
Gas is already a big **climate problem**

Australia is already the world's largest liquefied gas exporter.

EnergyQuest, an Australian energy advisory firm that tracks the liquefied gas market, estimates that Australia shipped a record 77.5 million tonnes of gas overseas in calendar year 2019. This was an increase of 11.4% on the previous year's exports and more than twice that of the USA, which is referred to as '**the world's other fast-growing LNG producer**'.

This massive increase was attributed primarily to the growth of the Ichthys gas extraction project operated by Japan's INPEX in the Timor Sea. Most **recent data released from EnergyQuest** for April 2020 shows Australian projects continued unabated during the COVID-19 pandemic, shipping 6.9 million tonnes of liquefied gas overseas.

Australia's LNG projects and gas basins



Source: Australian Government, Department of Industry, Innovation and Science. Resources and Energy Quarterly, March 2019

ACF has analysed emissions data from the 2018-19 financial year to determine the current carbon impact of gas projects¹ (like extraction, processing and pipelines) and the industrial facilities that consume gas to produce chemicals (like fertilisers), refined metals (like nickel) and other value-added materials (like paper).

Our analysis finds Australian gas projects and facilities using gas in industrial processes in 2018-19 emitted approximately 81 million tonnes of climate pollution in 2018-19.²

This analysis omits the emissions from gas-fired power stations, gas used in mining operations and household gas use, meaning this number is well short of the total climate impact of domestic gas use in Australia.

If the government had purchased the commensurate abatement in the last Emissions Reduction Fund auction, it would have cost the taxpayer \$1.3 billion.³

For further perspective, the total is approximately 49% of the total emissions of the on-grid electricity sector (including brown and black coal-fired power stations).⁴

1. Including gas production and processing for export.
 2. Based on ACF analysis of safeguard mechanism data: 81,284,492 tonnes.
 3. ERF Auction March 2020 average cost per ACCU was \$16.14.
 4. 164,182,719 tonnes.

The annual emissions from Chevron's Gorgon gas project are worse than the annual emissions at AGL's decrepit Liddell coal-fired power station (8.5 million tonnes). Chevron has exceeded its Safeguard Mechanism baseline the last two reporting years (by 683,658 tonnes and 632,028 tonnes respectively) due to the Gorgon project. Chevron has entered a **multi-year monitoring period**, which typically allows a facility a two- or three-year period to manage an exceedance in emissions and get the average down below its baseline. Chevron has not purchased any abatement nor paid a penalty for the 1,315,686 tonnes of excess carbon equivalent emissions over two reporting years, so will need to reduce its net emissions by approximately 15% from 2018/19 levels (either by purchasing abatement or reducing emissions) to avoid paying a penalty in 2019-20.⁵

The annual emissions from Woodside's North West Shelf gas project are worse than Delta Electricity's **40-year-old Vales Point coal-fired power station** (6.8 million tonnes). Woodside also exceeded its Safeguard Mechanism baseline in 2016-17 and 2017-18 (by 86,812 tonnes and 74,522 tonnes respectively). It entered a multi-year monitoring period and managed to reduce emissions in 2018-19 sufficiently to achieve aggregate three-year emissions just 22,555 tonnes below the total limit of 22,712,787 tonnes of carbon equivalent emissions.

The projected climate pollution from proposed new gas projects is staggering and demands further analysis. **Climate Analytics** says one single gas project, Woodside's Burrup Hub, will significantly undermine Australia's international climate commitments.

The leaked National COVID-19 Coordination Commission report advises the government to expand and shore up supply and demand for gas in Australia's future economy. The report was created after consultation with a number of companies responsible for the carbon pollution figures ACF has calculated. These include Santos, Orica, INPEX, Incitec Pivot and Qenos.

The climate pollution caused by gas in Australia is already massive and unacceptable. Ndevr Environmental, which tracks and reports on greenhouse emissions in **Australia has noted that:** "Fugitive emissions for Q3/FY2019 are the highest on record and have increased rapidly for four consecutive quarters." **Australia's National Greenhouse Gas Inventory** also makes clear that gas is an underlying driver of recent increases in Australia's emissions.

If gas is allowed to expand further under the cover of the post-COVID economic recovery, its contribution to climate damage will continue to grow.

The projected climate pollution from proposed new gas projects **is staggering and demands analysis.**

5. Recent changes to the Safeguard Mechanism allow for companies with multi-year monitoring baselines to opt in for an additional year to reduce emissions if the period is due to conclude after 2019/20. It is unknown if Chevron will opt in. Their current period will end after 2019/20.

State of hydraulic fracking across the states and territories

Australia's states and territories are inconsistent in their approach to fracking, but Queensland, Western Australia, the Northern Territory and New South Wales are all expanding fracking - and the implications for greenhouse pollution, food, water, health, wellbeing and the environment are huge.

- Western Australia (WA) lifted a moratorium on fracking in 2018, stating that it would only apply to existing petroleum titles, or 2% of the state. However, 2% of the state is 51 million hectares, nearly the size of Tasmania. According to Climate Analytics, extracting all WA's gas reserves would emit about 4.4 times more carbon dioxide equivalent than Australia's total domestic energy-related emissions budget.
- New South Wales has had a restrictive approach to fracking after strong community opposition. However, despite claiming it has the toughest coal seam gas regulations in Australia, the state allows fracking and several large new projects are close to proceeding. The massive Santos Narrabri project in the Pilliga would dig up to 850 wells on 425 well pads over 95,000 hectares if it proceeds. On its own, the Narrabri coal seam gas field could produce around 94.2 million tonnes of climate pollution. The project poses a range of risks to the community and the local environment with many concerns about the risks to the underground water table and the use of chemicals in fracking. The project is in its final approval phase with the state government.
- In Queensland, rapid industry expansion over a decade means there are now around 6,000 gas wells. Even the fragile and environmentally significant Channel Country is open for exploration. Santos has been granted extended rights – to 2030 – to explore significant parts of the Channel Country for potential commercial gas extraction. In Queensland almost 25,000 km² of country has been released for gas exploration since early 2017.

- The Northern Territory (NT) government lifted a two-year moratorium on fracking in 2018. Shale gas fracking licences and applications cover more than 100 million hectares of the NT. The shale/tight gas industry in the NT is in its early stages, but has the potential to be a huge contributor to climate damage. Proponents are pushing hard for large-scale expansion of production gas fields. A gas pipeline to the east coast is already under construction. About 70% of the shale gas in the Territory is believed to be in the Beetaloo Basin, around 500 kilometres south-east of Darwin. The Beetaloo Basin sits below the Tindall limestone aquifer, a large underground water system that feeds springs and rivers throughout the region. Three petroleum companies – Origin, Santos and Pangea – told the NT government fracking inquiry that up to 1200 wells could be sunk over the next 25 years. The government inquiry estimated greenhouse emissions from a new large shale gas field in the territory would contribute around 6% of all Australian emissions. However, this is likely to be a gross underestimate. The Australia Institute has estimated that onshore shale oil and gas fields in the NT could result in up to 34 billion tonnes of carbon emissions, equivalent to 60 times Australia’s total current greenhouse gas emissions, or 130 large coal power plants running for 40 years.
- The Victorian state government introduced a temporary fracking ban in 2017, effectively making it an offence to conduct coal seam gas exploration or fracking until June 2020. The government has recently announced that the ban will be made permanent by entrenching it in that state constitution. At the same time, however, the state government lifted its ban on onshore gas exploration and announced it would introduce new laws into state parliament to allow for an ‘orderly restart’ of drilling for gas from July 2021.
- In South Australia, the state government passed a 10-year fracking moratorium into law in 2018, which applies to the south-east of the state. However, unconventional gas is still being pursued in other parts of the state.
- Tasmania has a moratorium on fracking that lasts until March 2025.

Onshore shale oil and gas fields in the NT could result in up to **34 billion tonnes of carbon emissions, equivalent to 60 times Australia’s total current greenhouse gas emissions.**

Industrial emissions growing fast, **projected to become largest emissions source**

Greenhouse emissions from Australia's electricity sector have been falling due to the growth of renewable energy and more recently decrease in demand. However, analysts at RepuTex have noted that industrial emissions (excluding electricity) have risen 60% above 2005 levels.

RepuTex has connected this increase to massive increases in the oil and gas sector (621% increase), along with increases in the road transport (122%), aviation (54%) and mining (41%) sectors. RepuTex projects that the industrial sector will surpass electricity as Australia's largest emitting segment in 2023-24, growing to 110% above 2005 levels by 2030.⁶

6. RepuTex, Outlook: Australian industry emissions surge to record high (Q3 FY19-20).

How bad is gas **for the climate?**

Like coal, gas is a dangerous fossil fuel that damages our climate. Gas is made up mainly of methane, a potent climate pollutant. As noted in Australia's Quarterly Greenhouse Gas Inventory (March 2019), in relation to gas, "Emissions occur during exploration, extraction, production, processing, and pipeline transmission and distribution. Emissions also occur from the final conversion of gas to LNG at liquefaction plants where gas is cooled to -161P OPC to become a liquid for export."

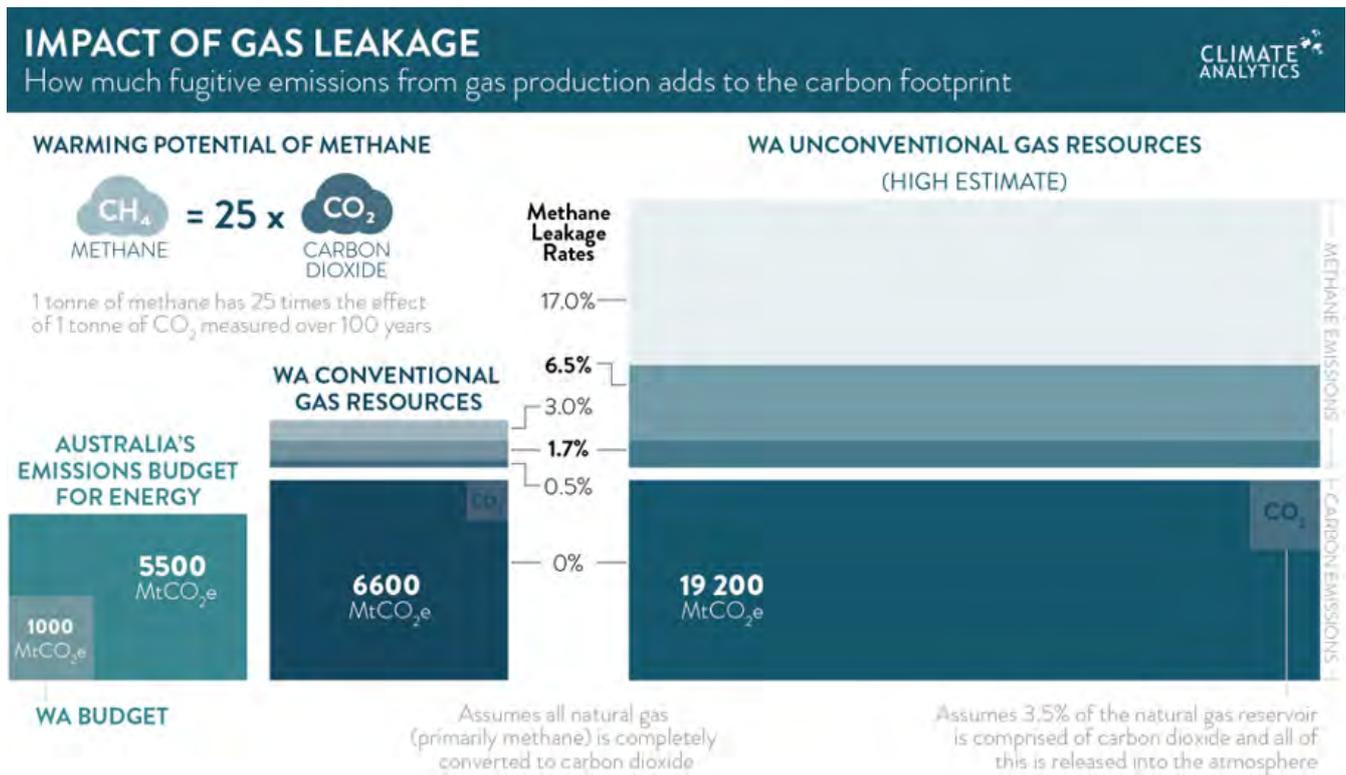
Gas also releases climate pollution when burned as an energy source.

The many points at which the gas lifecycle releases dangerous emissions includes not only carbon dioxide pollution but the potent greenhouse gas, methane.

Called 'fugitive emissions' the methane that escapes, often **not fully measured**, during the production, distribution and combustion of gas – is a **much more potent greenhouse gas than carbon dioxide**.

Over a 20-year timeframe, methane traps 86 times as much heat in the atmosphere as carbon dioxide. It is responsible for about a quarter of **total atmospheric warming** to date.

Estimates of the impact of gas leakage from WA's gas resources by Climate Analytics (see graphic) show that fugitive emissions from gas can far outweigh Australia's emissions budget for energy and there's potential for unconventional gas to be far worse than conventional gas.



Source: Climate Analytics: *Western Australia's Gas Gamble*, 2018.

Concerns are rising globally about the climate impacts of methane including by the **United Nations Framework Convention on Climate Change**. A special report by the World Health Organisation urged governments to take “specific commitments to reduce emissions of short-lived climate pollutants” such as methane, to boost the world’s chances of staying within the Paris Agreement’s 1.5°C ambition.

Australia’s quarterly National Greenhouse Gas Inventory (for the year to June 2019), showed growth in Australia’s emissions from stationary energy (up 3.6% or 3.5 Mt CO₂-e) and fugitive emissions (up 4.4% or 2.4 Mt CO₂-e). Emissions from total export industries increased by 6%, mainly reflecting the increases in LNG exports (up 21.3%). The increases in LNG exports contributed 1.4 Mt CO₂-e to the 3.5 Mt CO₂-e increase in stationary energy emissions and 4.8 Mt CO₂-e to fugitive emissions due to flaring and the venting and leakage of methane and carbon dioxide.

Australia’s quarterly National Greenhouse Gas Inventory (for the year to December 2019), showed growth in Australia’s fugitive emissions increased by 2.5% (see Table 3), and noted that this increase in fugitive emissions was driven by an increase of 17.9% in natural gas production. A comparison of sectoral trends since 1990 in the same Inventory, revealed that fugitive emissions have increased 51.1% or 19.2 Mt CO₂ -e since 1990. It is reported that fugitive emissions were relatively stable until 2015, then increased strongly as a result of the growth of the LNG industry. Stationary energy excluding electricity has increased by 2.8% in trend terms for the year to December 2019 when compared with the previous year. The Inventory reports that this was driven primarily by a 11.0% increase in LNG exports in the year to December 2019.

‘Actual’ annual emissions, by sector, for the year to December 2018 and 2019

Sector	Annual emissions (Mt CO₂-e) Year to December 2018	Annual emissions (Mt CO₂-e) Year to December 2019	Change (%)
Energy - Electricity	180.7	175.4	-2.9
Energy - Stationary energy excluding electricity	99.4	102.1	2.7
Energy - Transport	101.3	100.2	-1.1
Energy - Fugitive emissions	55.3	56.7	2.5
Industrial processes and product use	34.8	34.7	-0.2
Agriculture	73.0	68.8	-5.8
Waste	12.9	13.0	1.4
Land Use, Land Use Change and Forestry	-20.0	-18.5	7.3
National Inventory Total	537.5	532.5	-0.9

Source: From the latest National Greenhouse Gas Inventory, p 7.

Impact of Australia's gas exports on emissions

The gas industry and the government claim Australia's gas exports reduce emissions overseas by replacing dirtier energy from coal. However, there is no evidence Australia's liquefied gas sent overseas replaces coal.

Climate Analytics estimates that gas extraction and production creates about 9–10% of Australia's greenhouse emissions. Climate Analytics concludes that when exported liquefied gas is included, the industry's entire emissions would account for roughly **60% of Australia's total emissions in 2017.**

A recent quarterly update of the **National Greenhouse Gas Inventory** included a 'Special Topic on consumption-based inventory estimates,' which also confirmed Australia's gas exports' growing contribution to the international climate problem.

The consumption-based inventory estimates that emissions released in Australia in producing our exports for 2018-19 were 199 Mt CO₂-e. This is 67 Mt CO₂-e or 50% more than for 2004-05. The preliminary analysis indicates that the net effect of Australia's trade with North East Asia, has been to exert strong upward pressure on Australia's national greenhouse gas inventory.

Right image. Gas plant in Port Bonython, SA.
Photo. Jason Benz Bennee/Shutterstock.com.



‘Transition fuel’ claims are **out-of-date and dangerous**

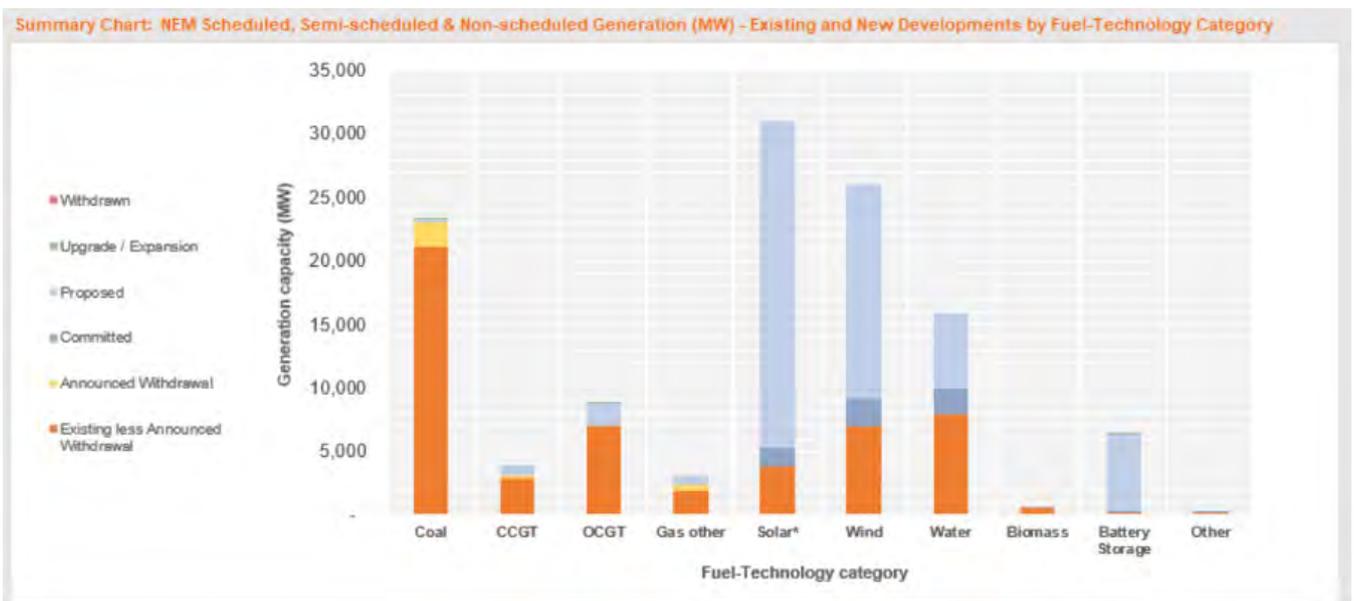
The Morrison Government and gas producers like to say Australia’s gas exports are helping the world transition to a lower emissions future. The Prime Minister used a speech to the National Press Club (29 January 2020) to state:

“There is no credible energy transition plan, for an economy like Australia in particular, that does not involve the greater use of gas as an important transition fuel.”

The government’s single-minded intention to support gas and claim it is a transition fuel has been particularly evident in its call for a ‘gas-led COVID-19 economic recovery’. Gas has pervaded almost every task force, commission, plan and intention communicated by the government for economic recovery.

The ‘transition fuel’ argument is faulty on multiple fronts. IEEFA analysis shows gas has become an uncompetitive fuel source for power generation in Australia. Renewable energy is outstripping coal and gas because of simple economics – i.e., renewable energy is cheaper. New generation capacity in Australia has been dominated by renewable energy for this reason (see AEMO summary chart below).

From an emissions perspective, gas fails as a transition fuel. As mentioned above, this failure is on multiple levels including for export, which requires an extremely energy-intensive process for gas to be super cooled to -162°C for shipping, and fugitive methane emissions in the gas supply chain only need to be at 3.1% to make gas a worse emitter than coal.



Source: AEMO

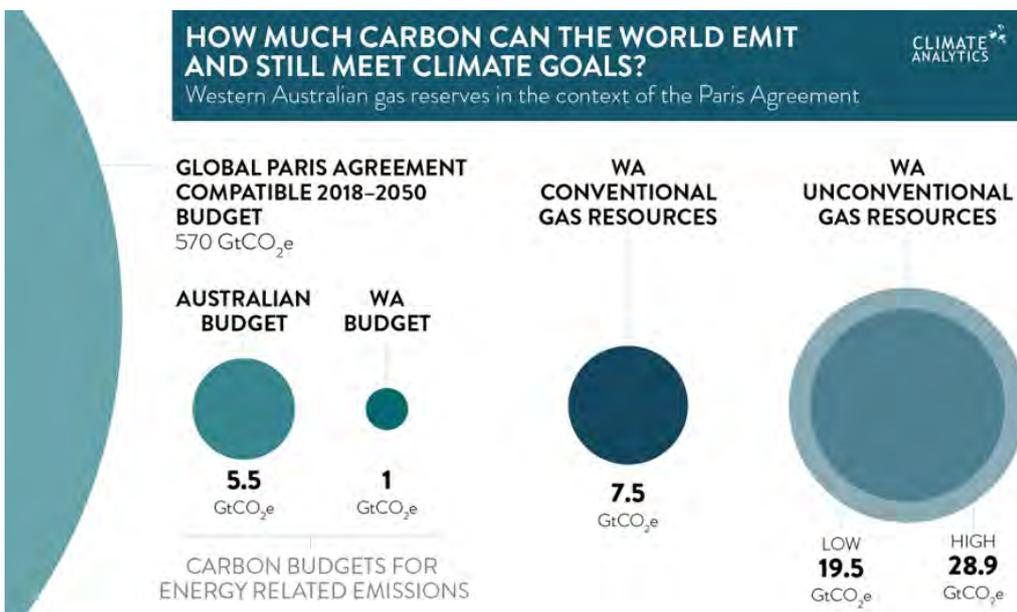
The 'transition fuel' case is out of date and dangerous in a world that is now tracking rapidly toward 3.4 degrees of heating. There is no carbon budget left for the kind of transition that proponents of burning more gas reference.

The climate pollution released when gas is burned for fuel combined with the methane released in multiple stages of gas extraction and distribution processes mean gas is a dangerous fossil fuel that cannot be supported in the name of climate action.

Western Australia's gas industry: Single-handedly blowing carbon budgets

Research by Climate Analytics has determined that carbon pollution from Western Australia's current and proposed natural gas projects would be more than four times higher than what Australia's entire energy system can emit under the Paris Agreement.

At the end of 2018, WA's gas production was projected to account for around 11% of global capacity.



Source: Climate Analytics: Western Australia's Gas Gamble, 2018.

Conclusion

Gas is a fossil fuel. Mining gas is a climate disaster. Last summer's fires and smoke haze were a vivid reminder to all Australians that climate change is here. We have long moved past the point of considering gas, which is mainly methane, as a transition fuel.

The heavily polluting gas industry is not going to help Australia tackle the climate crisis. Clean, renewable energy is the answer.

People power our campaigns and always have

Australian Conservation Foundation

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