



Climate Council of Australia

**Submission to: 2021 Offshore Petroleum Exploration
Acreage Release: nominated areas for
comment**

Addressed to: Manager, Offshore Exploration Section,
Department of Industry, Science, Energy and Resources
Petroleum.Exploration@industry.gov.au

Submission from: Climate Council of Australia Pty Ltd
8 Short Street, Surry Hills, NSW 2010
Tel: 02 9356 8528
Email: info@climatecouncil.org.au

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About the Climate Council

The Climate Council is an independent non-profit organisation funded by donations by the public. Our mission is to provide authoritative, expert advice to the Australian public on climate change and solutions based on the most up-to-date science available.

To find out more about the Climate Council's work, visit www.climatecouncil.org.au.

1. Recommendations

Recommendation 1: Suspend the 2021 offshore gas acreage release and suspend the process to grant new titles for the 2020 acreage release.

Recommendation 2: Introduce a framework to enable impacts of climate change to be considered when assessing future offshore title applications.

Recommendation 3: Fund an independent scientific study, free of industry influence, of gas industry supply chain emissions.

2. Overview

The Climate Council welcomes the opportunity to comment on the 2021 offshore petroleum acreage release.

The Climate Council is concerned that the Department of Industry, Science, Energy and Resources (hereby referred to as the Department) is pushing ahead with plans to open up 84,349km² of new area for gas exploration in offshore Western Australia and Bass Strait – an area greater than the size of Tasmania and the ACT combined – without considering how much this gas could contribute to climate change by increasing Australia's greenhouse gas emissions and without identifying any need for new gas.

Large sections of Australia's offshore waters are already covered by gas exploration and production permits, containing vast quantities of gas reserves. The Department has not identified any need for opening up even more of Australia's offshore waters to gas exploration, and as such there is no case for going ahead with further acreage releases.

There is an urgent need for the Department to introduce a framework to enable a prospective release area's contribution to climate change to be assessed. Highly emissions intensive gas fields, notably the Browse and Bonaparte Basins, should not be opened up for further acreage release.

Until this new framework is developed, the Department should suspend the 2021 acreage release process and the issuance of titles for the 2020 acreage release. Continuing to open up new areas to fossil fuel exploration is totally inconsistent with tackling dangerous climate change and meeting Australia's commitments under the Paris Agreement. It is quite simply not possible to meet the globally agreed temperature goals in the Paris Agreement – and protect Australian livelihoods and the places we cherish in the process – and open up new gas extraction.

This submission will outline:

- The urgent need to rapidly reduce greenhouse gas emissions and end new development of fossil fuels, based on the latest science
- Improvements in scientific research in the measurement of methane emissions
- The large contribution of the gas industry to Australia's greenhouse gas emissions

In light of these findings, the Climate Council makes three recommendations, calling for the suspension of the 2021 offshore acreage release, the introduction of a framework to assess climate impacts of future title applications, and an independent study into gas industry supply chain emissions.

For more information on any of the topics discussed in this report, we refer the Department to the Climate Council's recent report [Passing Gas: Why Renewables are the Future](#) (Climate Council 2020a).

3. Climate change is an urgent threat – Australia must reduce greenhouse gas emissions

The impacts of climate change are already being felt in Australia. We are already in the grip of a climate crisis having lived through one of the most extreme and dangerous years ever recorded. Even before COVID-19 hit, Australia was struggling through a series of destructive climate impacts. Over the past two years, Australians have lived through record-breaking drought, the Black Summer bushfires, intense heatwaves and yet another mass bleaching of the Great Barrier Reef; the third in five years (Climate Council 2020b). Every mainland state was severely affected.

These extreme weather events were driven by climate change. Global average temperatures have increased 1.1°C since the second half of the nineteenth century (World Meteorological Organization 2020). The planet has almost certainly not experienced such a rapid increase in temperature at any time in the past several million years (Hansen et al. 2013).

The burning of coal, oil and gas is driving climate change. It is not possible to tackle climate change unless we rapidly phase out all fossil fuels, including gas. Expanding or developing new fossil fuel infrastructure of any kind means that we put more Australian lives and livelihoods in danger.

Recent analysis has found that existing coal, oil and gas infrastructure is more than enough to push the world past 1.5°C of warming (Tong et al. 2019). Existing and planned fossil fuel infrastructure is sufficient to push the world past 2°C of warming (Stockholm Environment Institute et al. 2019). There is clear benefit to holding global temperatures to the lowest level possible, with 1.5°C, 2°C or higher global average temperatures representing step changes along a path to catastrophically dangerous levels of warming (Hoegh-Guldberg et al. 2018).

The science is clear: we cannot build any new fossil fuel infrastructure or expand fossil fuel production. This includes offshore gas exploration.

4. Methane emissions are rising fast and more powerful than widely understood

Accurately accounting for methane emissions would show that the gas industry is responsible for a large and growing source of Australia's emissions (Climate Council 2020a). It is critically important for the impact of methane to be measured accurately.

While gas is a fossil fuel, its main component is methane. This means that the use of gas directly contributes to climate change in addition to producing carbon dioxide when it is burned.

This year, Australia's reporting guidelines were finally updated to bring them into line with the IPCC's Fifth Assessment Report, released in 2013 (IPCC 2013). However this update does not entirely reflect the information contained in the work of the IPCC. Along with this, improved assessments of methane's climate impact since that time mean that the next IPCC Assessment Report – due in 2021 – will likely include further, significant upward revisions to the calculated global warming potential (GWP) of methane. A complete assessment of methane's climate impact in line with the latest available science would increase the GWP of methane by 60% compared to the value currently used by the Department in reporting greenhouse gas emissions.

The IPCC report makes clear that there is a significant difference in the climate impact of methane emission sources. From a whole-of-system perspective, methane emitted from active biological processes – such as from livestock or landfills – has a different effect on the heating of the planet to methane emitted from ancient sources such as fossil methane, or gas. The release of fossil methane has a greater overall impact on the climate than biotic methane and contributes more to the destabilisation of the global climate (Boucher et al. 2009; Myhre et al. 2013).

Since the publication of the IPCC's Fifth Assessment Report in 2013, scientific knowledge has progressed on the cumulative climate forcing impacts of emitting methane. While some outstanding uncertainty remains (Smith et al. 2018), more recent re-assessments have found that the total impact of methane is substantially higher than was once thought, increasing previous estimates by 14% (Etminan et al. 2016). These well-regarded assessments will inform the position taken by the IPCC in its Sixth Assessment Report.

Taking all of this into account means that Australia is vastly underreporting the impacts of methane, and so Australia's overall emissions. Rather than being only 28 times worse than carbon dioxide – as is now claimed by the Department – a more complete and up-to-date analysis would show that methane is up to 40 times more potent over a 100-year period. Over 20 years, methane is nearly 100 times more potent.

The accounting method used by Australia is allowable under international reporting guidelines. However, by ignoring the difference between sources of methane, subsequent scientific developments and flow-on effects of introducing methane into the atmosphere, the Department's official reports vastly understate the true impact of its methane emissions.

This has serious implications for measuring the gas industry's contribution to Australia's greenhouse gas emissions. If these adjustments are made using the latest science, and in a way that accurately accounts for the different sources of methane, Australia's total reported emissions would increase by a further 10% – adding another Sweden to the planet.

5. The gas industry has been a key driver of Australia's rising emissions

It is a simple fact that along the gas supply chain, carbon dioxide and methane are released in very large quantities. Extracting any of the three major fossil fuels – coal, oil and gas – releases significant greenhouse gas emissions even before the fuel is burned. Proportionally speaking, the gas supply chain emits significantly more pre-combustion greenhouse gas per unit of energy in Australia than coal.

Large releases of carbon dioxide and methane are a routine aspect of operating most forms of gas infrastructure. Cumulatively, this results in a large additional burden on the global atmosphere.

The mismatch between the proportionally high levels of upstream emissions in gas and the smaller – though still large – amount emitted from coal significantly reduces the claimed climate benefit of shifting to gas in many instances.

Emissions of methane, both operational and inadvertent, occur at every stage of the gas supply chain; from extraction, to processing, transport, and even at the point of combustion. The reported quantity of greenhouse gas pollution released by the gas industry is substantial. In the 2018 calendar year, the Australian gas industry released at least half a million tonnes of methane directly to the atmosphere unburned, directly released seven-and-a-half million tonnes of carbon dioxide, and produced another six-and-a-half million tonnes of carbon dioxide as a result of flaring (Department of Industry, Science, Energy and Resources 2020b). This is separate to the nearly three hundred million tonnes of carbon dioxide produced when Australian gas is burned at its final destination. Australia emits far more than its share of greenhouse gases each year (Robiou du Pont et al. 2016). On these official numbers, one twentieth – or 5% – of Australia's total contribution to climate change comes from the gas

industry's venting and flaring operations (Department of Industry, Science, Energy and Resources 2020b).

But this does not tell the full story, and may be a significant underestimate. The impact of upstream emissions of greenhouse gases from the gas industry are poorly reported in Australia. In part, this is because instead of directly measuring the climate impact of the industry, the Department's official estimates of the gas industry's emissions ultimately rely on assessments conducted decades ago, on a different continent, at a time when the unconventional gas industry was in its infancy.

The Department's National Greenhouse Account Factors, which are used to determine project level and national-scale emissions from the gas sector, are based on the American Petroleum Institute's Compendium of Greenhouse Account Factors for the Oil and Gas Industry, which was last updated more than a decade ago (American Petroleum Institute 2009; Department of Energy and Environment 2019). While some more recent assessments are included in the compendium, emissions from the gas industry are largely determined by a single report from the United States Environmental Protection Agency which assessed the climate impact of the US gas industry in the 1992 calendar year (Environmental Protection Agency (US) 1996). Recent studies have shown that the proportion of methane in the atmosphere as a result of fossil fuel extraction is far higher than previously estimated (Hmiel et al. 2020). This finding points to systemic under-reporting of fossil fuel industry emissions of methane across the world.

We already know that gas industry emissions are significant – the prospect that they may be even larger due to systematic under-reporting, is of great concern and should prompt the Department to undertake further studies in this area before opening up any new areas for gas exploration.

6. Expanding fossil fuel development is totally incompatible with reducing emissions

As both a fossil fuel and a greenhouse gas in its own right, gas is part of the problem. While there is a discrete, and short-lived role for some existing gas to firm up renewables, new gas production won't fix the problem – it will only delay the solution.

By holding another annual acreage release, the Department is facilitating the continued expansion of gas exploration and production in Australia, driving up greenhouse gas emissions and contributing to dangerous climate change.

In many industries – including electricity, which is the largest domestic user of gas – zero emissions replacements for gas are cheaper and more reliable. This is most obvious in the electricity sector, where a rapid decline in Australian gas-

powered generation over the coming decades looks increasingly likely as technologies like batteries and pumped hydro storage become even cheaper (Australian Energy Market Operator 2020a).

The Department cannot claim that it is taking Australia's obligations under the Paris Agreement seriously while opening up new offshore areas for fossil fuel exploration. To avoid dangerous climate change, the Department must suspend the 2021 acreage release.

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