

HOW THE WA GOVERNMENT DISMISSED THE CLIMATE IMPACTS OF GAS FRACKING IN ONE OF THE WORLD'S LARGEST FOSSIL FUEL BASINS

POLICY BRIEFING, 12 DECEMBER 2018

The McGowan Government is set to break a key election promise by lifting the WA fracking moratorium without conducting a full assessment of its climate change impacts.

This report details how the WA Fracking Inquiry failed to adequately assess the potential carbon pollution from fracking in WA, providing misleading advice to government that contradicts independent expert analysis and ignores Australia's most respected climate scientists.

CONTENTS



01 EXECUTIVE SUMMARY



03 BACKGROUND



03 WHAT INDEPENDENT EXPERTS SAID ABOUT CLIMATE IMPACTS OF WA FRACKING



05 HOW THE INQUIRY MADE THE CLIMATE IMPACTS OF WA FRACKING LOOK SMALL



11 HOW THE INQUIRY DISMISSED THE REMAINING POLLUTION AS INSIGNIFICANT



14 CONCLUSION



EXECUTIVE SUMMARY

The WA McGowan Government has announced that it will allow one of the world's largest fossil fuel basins to be opened up to the fracking industry, breaking an important election commitment to prevent fracking if it 'contributes adversely to climate change' following a 'full analysis of lifecycle greenhouse gas emissions' from fracking.

Before the decision to lift the WA fracking moratorium, fifty of Australia's most respected climate scientists and experts called for a permanent ban on fracking in WA due to its potentially enormous climate impacts.

Despite this, the McGowan Government's Fracking Inquiry, which did not have a climate scientist on its panel, reached a very different conclusion about the climate impacts of fracking. Rather than adopting a conventional approach to estimating lifecycle carbon pollution from fossil fuel developments, the Fracking Inquiry relied on a series of questionable methods to arrive at its conclusion that fracking in WA would not cause significant material harm to the climate.

- **The largest source of pollution from fracking was not considered.** The Inquiry didn't undertake a 'lifecycle analysis' of carbon pollution from fracking, and therefore ignored the pollution from burning the fracked gas, even though these are likely to account for about 75% of greenhouse gas emissions associated with fracking.
- **It assumed fracking development would only occur at a small scale.** With no economic analysis to support its position, the Inquiry assumed that fracking would only supply the WA domestic gas market. This ignores the potential for a much larger fracking industry to supply already established export markets and the government's own estimates about the size of the economically recoverable resource.
- **It argued fracking would lead to a reduction in conventional gas production.** The Inquiry argued that fracked gas would substitute for use of cheaper, conventional gas and therefore only the difference in pollution between conventional gas and fracking should be considered. There is no evidence to support the assumption that conventional gas production would be reduced by fracking.

The Inquiry then used the following arguments to suggest that the carbon pollution it believed would result from fracking does not matter anyway.

- **It argued that carbon pollution should be minimised, not prevented altogether.** The Inquiry took a policy approach where 'minimisation' is the goal, rather than preventing pollution from exceeding a safe threshold. This ignores the climate science that shows atmospheric levels of carbon pollution are already too high to maintain a safe climate.
- **It argued that further carbon pollution is acceptable because pollution already occurs.** The Inquiry implicitly argued a state-wide fracking ban would be 'highly impractical' and inconsistent with allowing other existing polluting industries to operate, effectively setting a weak, arbitrary threshold for allowing fracking to proceed.

As a result, the Inquiry deliberately and significantly underestimated the carbon pollution potential and climate change risks from fracking in WA. Overall, the Inquiry findings lack credibility on these issues, and are out of step with contemporary science-based policymaking. These findings should not be relied upon when assessing the risks and benefits of fracking or making policy on this issue.

Given the inadequacies of the Fracking Inquiry, and in particular the failure to account for the largest portion of carbon pollution from fracking, the McGowan Government election commitment remains unfulfilled.

In order to rectify this, the McGowan Government must immediately commission a thorough, independent assessment of the climate impacts and lifecycle carbon pollution of fracking, by experts qualified in the technical disciplines of climate science and carbon pollution accounting.

In line with the McGowan Government's election commitment, the fracking moratorium must not be lifted if such an assessment demonstrates that fracking will have an adverse impact on the climate. To do so would be a serious breach of the trust that thousands of voters placed in the WA Labor party at the 2017 state election.

BACKGROUND

WA Premier Mark McGowan made an election commitment in 2017 that fracking would not be allowed in WA if it 'contributed adversely to climate change'. An independent Inquiry into the risks and impacts of fracking was commissioned to determine this.

WA Labor [...] will conduct a public Inquiry to examine environment, health, agriculture, heritage and community impacts (including full analysis of lifecycle greenhouse gas emissions) prior to any fracking activity (including future exploration). WA Labor will place a moratorium on the use of fracking until such an Inquiry can demonstrate that fracking will not compromise the environment, groundwater, public health or contribute adversely to climate change. Mark McGowan, WA leader of the Opposition March 2017 (emphasis added).

The [Inquiry report](#) has now been released. The report has estimated the carbon pollution from fracking in WA would be in the range of 2.5 to 31.6 million tonnes per year, or assuming that the fracking replaces existing conventional gas, the additional carbon pollution would be 0.04 to 1.3 million tonnes per year.

As a result, the Fracking Inquiry claimed the risk presented by fracking in WA to the climate was low and manageable. This contrasts directly with independent expert analysis.

WHAT INDEPENDENT EXPERTS SAID ABOUT CLIMATE IMPACTS OF WA FRACKING

Independent expert analysis shows carbon pollution would be an order of magnitude larger than the Fracking Inquiry has estimated.

In September 2018, 50 of Australia's leading climate scientists and experts signed an [open letter to the McGowan Government](#) calling for a state-wide ban on fracking due to its profound impacts on the climate.

Unconventional gas resources in Western Australia are one of the largest unexploited potential sources of carbon in the world. Opening these to exploitation would, in our view, be grossly irresponsible given urgency of the climate situation.

Leading international climate research institute Climate Analytics has completed the first comprehensive study into the carbon pollution that could result from the development of WA's unconventional gas resources.

Using the government's own figures for how much onshore gas is 'economically recoverable' in WA, the [study](#) found the development of these resources by fracking would release about three times what Australia is allowed to emit in order to comply with the Paris Agreement.

This study estimated the lifecycle carbon footprint from fracking in WA could be 19.5 to 28.9 Billion tonnes (Gt) CO₂e-. This is equivalent to about 3.4% to 5.1% of the global Paris Agreement carbon budget until 2050.

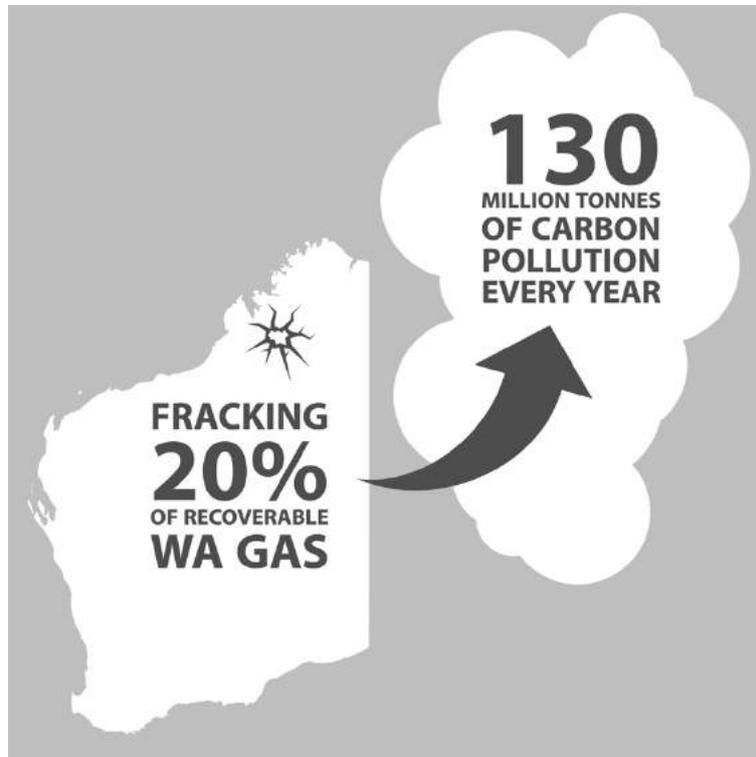
In its report, the Fracking Inquiry report dismisses this research as 'both implausible and highly misleading'.

The Inquiry did not critique or find fault with the methodology used by Climate Analytics to arrive at their estimates of carbon pollution, other than the contention that the Climate Analytics estimates assume a size and scale of development that is, in the unsubstantiated opinion of the Inquiry, 'implausible.' (For a more detailed analysis of this size and scale issue, see below.)

Acknowledging that the full development of all of WA's economically recoverable onshore gas resources is unlikely, we have used the Climate Analytics findings to make an estimate of emissions from a smaller scale of development.

Taking the most conservative estimate by Climate Analytics, and assuming that only 20% the economically recoverable gas will actually be developed over a 30 year period (less than what could be accessed under the McGowan Government's new policy), gives a lifecycle carbon pollution estimate of around **130 million tonnes of carbon pollution per year.**

These numbers are an order of magnitude larger than the estimates contained in the Fracking Inquiry report.



HOW THE INQUIRY MADE THE CLIMATE IMPACTS OF WA FRACKING LOOK SMALL

1) The largest source of pollution from fracking was not considered by the Inquiry

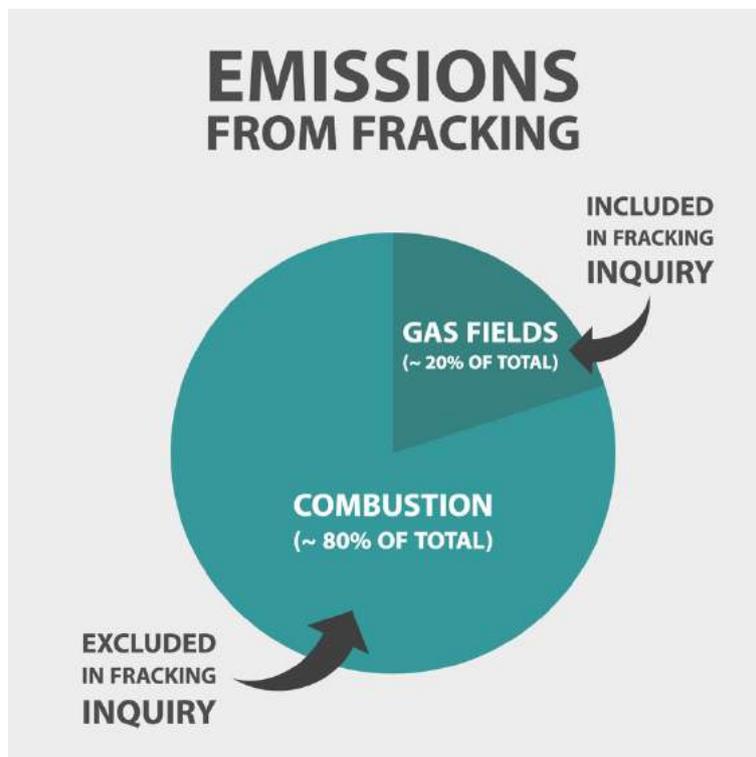
As CCWA anticipated in a [media release](#) the day before the release of the report, the Inquiry failed to consider the full lifecycle emissions from gas fracking, despite the McGowan Government's clear election commitment to do so.

The term 'lifecycle emissions' is used in the field of carbon pollution accounting to describe the full range of pollution sources during the lifecycle of a product or fuel type, including from extraction,

production, transport, use and (where applicable) final disposal. There are numerous published studies available online and in science journals using this well-established methodology.

Instead of following this accepted conventional approach, the WA Fracking Inquiry decided to make up its own definition of 'lifecycle emissions', considering only the emissions from the gas field itself. This includes pollution from diesel use during fracking operations, and the more significant release of fugitive methane.

However, the much larger emissions from combustion of the gas was completely ignored by the Inquiry. In typical lifecycle emissions studies on shale gas developments, combustion of the gas represents 70% to 80% of the total emissions. We believe that an approach to carbon pollution assessment which ignores these emissions is fundamentally lacking in credibility and integrity.



If the same method used by the Inquiry were to be applied to coal mining, it would consider only the direct carbon pollution from the excavation of the coal but ignore the pollution from burning the coal. Not only would that be disingenuous, but test cases in several Australian courts have upheld the need to consider the emissions resulting from the use of a fossil fuel, not just from its extraction.

In defence of their approach, the Fracking Inquiry argued that considering the pollution from the combustion of gas produced by fracking was outside the terms of reference of their investigation.

[...] the emissions associated with the downstream use of gas (from any source) in Australia and overseas, are beyond the Inquiry's Terms of Reference.

The published Terms of Reference¹ provide no such constraint on the scope of the Inquiry, so it appears this is a matter of how the Terms of Reference were interpreted by the Inquiry.

If it is true that the Inquiry was explicitly prevented from looking at the full range of pollution from fracking by the McGowan Government, then it would appear to reflect a deliberate attempt to constrain the Inquiry from the outset to avoid a full examination of the risks of fracking to the global climate, and to make fracking seem environmentally acceptable.

2) The Inquiry assumed only a very small scale of fracking development would occur

It is a given that the total potential carbon pollution from fracking in WA will be directly related to the size and scale of development. There are a range of potential scenarios for how large a fracking industry could be in WA.

No economic analysis on this has been undertaken by the Fracking Inquiry or the WA Government on this question, however the Government's own published estimates of the 'economically recoverable' onshore gas resource in WA are around 280 trillion cubic feet, and a paper published by the WA Department of Mines and Petroleum suggests that the resource actually could be very much larger than that.

Recent analyses of the potentially vast unconventional shale-gas resource in the Canning Basin, onshore Western Australia, estimate nearly 800 Tcf in the Goldwyer Formation alone.²

Instead of using the WA Government's own published estimates of how much gas could be recovered by fracking in WA, and without its own economic analysis, the Fracking Inquiry dismissed the potential for large scale fracking developments, assuming that the size and scale of the industry would be much smaller.

¹ <https://frackinginquiry.wa.gov.au/terms-reference>

² <http://www.dmp.wa.gov.au/Documents/Petroleum/PD-SBD-NST-130D.pdf>

In particular, the Inquiry only considered fracking for the WA domestic gas market, ignoring the potential for a much larger fracking industry supplying export markets. This leads the Inquiry to the assumption that the size and scale of a fracking industry in WA would be small, and therefore have a small pollution footprint.

The future scale of the onshore unconventional gas industry (should the moratorium be lifted) cannot be forecast with certainty, but over the next decade or two it is likely to be limited, at the extreme, by the size of the domestic Western Australian gas market.

We agree with the Inquiry that the domestic gas market is unlikely to sustain very large-scale fracking developments. Projected flat demand growth in the domestic gas market, and the 'domgas' reservation policy is likely to ensure adequate supplies from WA's very large conventional LNG developments into the future.

However, the Inquiry did not even mention the prospect that a gas fracking industry in WA would be developed to supply much larger export market which could potentially support very large-scale developments indeed. Given the acknowledged high capital costs of infrastructure that would be required to support fracking in the Canning Basin, and the economics of shale gas fracking (scale is required to achieve attractive returns on investment), there is a high probability that fracking developments in the Kimberley will only become viable with access to international markets.

Once access to very large international markets export market is established there may be no upper limit to the size and scale of potential development, as the experience in Queensland has shown.

WA is already a world leader in LNG export, and home to some of the world's largest LNG production and export facilities. These facilities are projected to have spare capacity in the future. Given this it seems highly incongruous that the Fracking Inquiry would conclude that ready access to an export gas market would not have the potential to underpin large scale onshore gas development in WA.

While the Inquiry suggests the fracking industry would be small (and the WA Government has relied on this advice to allow fracking) the Premier himself appears to have a different view:

Over time it could be a very significant industry for Western Australia that could generate billions of dollars of royalties for the state and generate thousands of jobs, but obviously when they start these industries, they start small³

The Editor of the West Australian apparently agrees:

It should be possible before long to take the next step, and safely open up more than 2% of the State to an activity which can drive valuable investment and jobs for Western Australians⁴

3) The Inquiry argued fracking would reduce conventional gas production in WA

Rather than considering carbon emissions from fracking to be a net additive contribution to overall carbon pollution (in line with conventional methods of assessment), the report instead makes an erroneous and irrelevant comparison to other forms of oil and gas extraction.

This is used by the Inquiry as justification for only considering the increased pollution from fracking *compared with other extraction methods*.

[...] the most immediate GHG question central to this Inquiry, that the Panel directly addressed is: How much more GHG is associated with oil and gas production requiring hydraulic fracture stimulation over and above that emitted by conventional petroleum developments?

This conclusion requires the Inquiry to accept two separate logical steps which deserve to be separately examined.

The drug dealer's argument

Implicit in this approach is the common 'drug dealers' argument' often heard used by fossil fuel and tobacco companies. This argument holds that if you don't supply the drugs (or in this case the fossil fuels) then someone else will. Therefore, the impacts of your contribution to the problem should be disregarded, or at least not be attributed to you.

³ Premier Mark McGowan on ABC radio November 28, 2018

⁴ The West Australian, Editorial, 29/11/2019

The displacement myth

The second assumption here is that if gas produced by fracking does displace the use of conventional gas in the WA domestic gas market, then this displaced conventional gas supply will somehow no longer be developed or remain in the ground.

We believe it is highly implausible to suggest that conventional gas companies who have approved developments and are already exporting very large volumes of gas to the international market, would not simply export the additional gas that would have otherwise supplied WA were it not for fracking. To consider that these companies would voluntarily reduce their gas production is not credible. Any additional gas not sold in the domestic market will certainly be exported, so the pollution from extracting, burning and processing this gas will still occur. In fact, this exported gas would have to go through additional energy-intensive liquification in order to be exported, so in fact the total carbon pollution from this 'displaced' conventional gas would be substantially higher than if it were to be used domestically.

Extending their implausible assumption that fracked gas will displace conventional gas, the Inquiry has employed a carbon accounting approach that even fossil fuel companies themselves have not been able to get away with.

*[...] the most justified and straightforward assumption is that unconventional gas developed in Western Australia will substitute one for-one with supplies currently produced conventionally and consumed in Western Australia. **As such, the GHG risk reduces to the difference in emissions between those sources.*** (Emphasis added)

The Australian Government requirements for reporting and assessing carbon pollution from projects are set out in the *National Greenhouse and Energy Reporting Act 2007 (NGER Act)*. This framework does not allow proponents to use the highly speculative assumptions regarding displacement of other fuels that has been employed by the WA Fracking Inquiry. Similarly, the State EPA requires proponents to estimate and report on all of their direct emissions, not just the proportion that are above industry averages.⁵

The Fracking Inquiry has employed a methodology for carbon accounting for fracking which is not recognised by Australia's legislation in this area, or by the WA EPA, and would therefore not be

⁵ WA EPA, Environmental Factor Guideline – Air Quality
http://epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Guideline-Air-Quality-131216_2.pdf

accepted if it were employed by a proponent in the gas industry itself. The result of this is to make the pollution from fracking seem much smaller than it would otherwise be.

HOW THE INQUIRY DISMISSED THE REMAINING POLLUTION AS INSIGNIFICANT

Having used the methods outlined above to ensure that the pollution levels would look very small, the Inquiry then went further, to justify ignoring this remaining pollution altogether as an issue.

1) The Inquiry argued that carbon pollution should be minimised, not prevented altogether

By applying a policy approach of waste minimisation instead of pollution control, the Inquiry has dismissed the climate science that shows atmospheric levels of carbon pollution are already too high to maintain a safe climate.

To the average person reading the Inquiry report, it may not be obvious that waste management and pollution control imply two very different policy approaches, at least under the WA *Environmental Protection act 1986*.

In the case of a pollutant, the normal approach would be to determine an upper threshold for what receiving environment (in this case the global atmosphere) can accommodate at a safe level, and then use regulation to prevent pollution levels from exceeding this safe threshold. In the area of waste management however, the approach taken in WA environmental law is very different – this establishes a very different goal of *minimisation* of waste without any specific upper limits to how much waste can be generated. To quote the Inquiry again:

The Environmental Protection Act 1986 (EP Act), does compel due regard for the principal of waste minimisation such that 'all reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment

Rather than treating carbon pollution as a *pollutant* (which it is), the Inquiry has instead treated carbon pollution as a *waste* which enables a very different and much more flexible legal and policy approach to be adopted under WA legislation.

By taking this approach the Inquiry has failed to engage with the climate change science and failed to acknowledge the fact that there is a fixed upper limit to how much carbon pollution can be released into the atmosphere while maintaining a safe climate.

2) The Inquiry argued that because pollution already occurs, further pollution is acceptable

A science-based approach to climate change and carbon pollution would recognise that the safe upper limit of carbon pollution in the global atmosphere in order to maintain a safe climate (or the 'carrying capacity' of the atmosphere) has already been exceeded. Therefore, any additional pollution is cannot be considered acceptable.

Unfortunately, this simple science-based logic was rejected by the Inquiry in favour of an altogether arbitrary measure of 'allowable' pollution which appears to be without any basis in science at all.

[...] to set a level of zero emissions is not only highly impractical, it is not consistent with the fact that all industries emit, and are allowed to emit, some level of GHG.

This seems to be another way of saying that because pollution already occurs, it is ok to pollute even more – even if that pollution is already having a dangerous impact on the climate.

The Fracking Inquiry was established under the *Environmental Protection Act 1986* and as such was constrained by the scope and powers of the Act. These do NOT extend to the consideration of economic factors such as the impact on other polluting industries, which are implicit in the statement by the Inquiry that setting a level of zero emissions is not practical or consistent with other industries. As such, we argue that the Inquiry has gone outside of its legal powers in its conclusion that zero emissions is not a practical goal.

In other examples of pollution control regulation (including in WA), it is considered necessary and routine to prevent new developments which would add to a pollution burden where the amount of existing pollution is already at or exceeding the carrying capacity of the atmosphere. In such cases, zero *additional* pollution is very much an accepted regulatory approach.

Given that many other jurisdictions have banned fracking, it would seem rather obvious that setting a level of zero emissions from fracking could be readily achieved by banning the practice altogether. Unlike the Fracking Inquiry, we argue that this is highly practical - indeed the *only* practical solution. The assertion by the Inquiry that setting a level of pollution to zero is 'highly impractical' seems to suggest that the Inquiry had a strong pre-supposition against a state-wide fracking ban.

Since there is no explanation of the Inquiry's logic or how it reached the conclusion that this was 'highly impractical', we speculate that this position is likely to reflect a pre-determined position by the McGowan Government when the Inquiry was established, and one which the Inquiry apparently adopted unquestioningly.

3) The Inquiry argued that carbon pollution is acceptable (the 'Gangster's argument')

Rather than setting a level of zero emissions (which is what an acceptance of climate science would demand) the Inquiry has set an arbitrary level of pollution minimisation as their 'objective' for climate change and carbon pollution.

[...] the implicit question is 'how big would emissions have to be to be considered significant at the global scale or in terms of Australia's commitments?'

In answer to their own question, and drawing from Australia's political (not science-based) commitments to the Paris agreement set by the Abbott Government, the Inquiry established the following objective:

The contribution to Australian anthropogenic upstream GHG emissions from onshore fields in Western Australia must be 0.5 percent or less of 2016 Australian GHG emissions

Morally, this appears to be no different to the gangsters' argument – that it is OK to murder a person, because hundreds of people are already murdered each year and the addition of one more would have negligible impact on the overall number of murders. This has the effect of focussing debate on how many murders should be considered significant in the overall context of murder rates, rather than whether any murder is acceptable under any circumstances.

The comparison is relevant beyond its illustrative purpose because human-induced climate change is already leading to elevated numbers of human and animal deaths globally due to heat waves, bushfires, hurricanes and other extreme weather events as well as displacement of communities, spread of vector borne diseases, crop failure and many other factors caused or exacerbated by climate change.

CONCLUSION

As a result of the steps laid out above, the WA Fracking Inquiry has significantly and deliberately underestimated the carbon pollution potential and climate change risks from fracking in WA. As a result, the Inquiry findings lack credibility in these areas and are out of step with contemporary science-based policymaking.

These findings of the Inquiry in the area of climate change impacts of fracking in WA cannot be relied upon when assessing the risks and benefits of fracking or making policy on this issue.

Given the inadequacies of the Fracking Inquiry assessment of carbon pollution and in particular the failure to account for the largest portion of carbon pollution from fracking, the McGowan Government election commitment to undertake a full lifecycle assessment of the carbon pollution impacts of fracking remains unfulfilled.

In order to fulfil its election commitment, the McGowan Government must immediately commission a thorough, independent assessment of the climate impacts and lifecycle carbon pollution of fracking, using a more rigorous methodology.

This must include development scenarios that include the potential for very large-scale fracking developments supplying international markets, and that match the government's own published estimates of economically recoverable unconventional gas resources.

In line with the McGowan Government's election commitment, the fracking moratorium must not be lifted if such an assessment demonstrates that fracking will have an adverse impact on the climate. To do so would be a serious breach of the trust that thousands of voters placed in the WA Labor party at the 2017 state election.