

Offset Upset

The WA EPA's climate offset requirements and the LNG backlash

WA LNG projects are pushing up Australia's emissions. The EPA recommended offsets to stop emissions rising. Contrary to industry claims, FOI documents show the EPA consulted with industry who opposed offsets.

Gas companies can afford to buy offsets at very small shares of their profits. They already use internal carbon prices, which they should disclose.

A large expansion in gas exports is not consistent with solving climate change. If approved, new projects should offset exported emissions or ensure exported gas is burned under climate policies consistent with Paris Agreement goals.

Submission

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September 2019

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ISSN: 1836-9014

Summary

Australia's emissions are rising, not falling, because there is no credible national climate and energy policy. Western Australia (WA) is the only state where greenhouse gas emissions have increased over the past decade, largely due to large expansions in the emissions intensive production and export of Liquefied Natural Gas (LNG).

In the absence of a climate policy, further increases in LNG exports will only further increase Australia's emissions and further damage the climate.

This was the situation confronting the WA Environmental Protection Authority (EPA) earlier this year.

On 7 March 2019, the EPA published comprehensive guidelines under which it would recommend that high emitting new project be required to purchase offsets (pay a price) for all direct emissions. The backlash from the gas industry resulted in the WA Premier taking heed of industry's concerns and soon after the EPA taking the unprecedented move of withdrawing the guidelines and putting them out for further consultation.

Gas companies and their industry groups claimed the guidelines were ad hoc, were not given due consultation, went far beyond requirements under the Paris Agreement, and would have severe negative economic impacts in particular on employment.

This report shows these are all inaccurate, and in the latter case irrelevant to EPA consideration.

One week before the EPA's consultation finished, the WA Government announced a new aspirational 2050 net-zero emissions target. This target is empty without policies to prevent new projects from increasing emissions. The timing of the new policy also raises further questions about how gas industry pressure on the government has led the WA Government to pressure the EPA.

The EPA is an independent advisory body that must by law consider and make recommendations based on environmental science. Contrary to industry and government claims, its decisions are not to be based on economic factors. The pressure on the EPA threatens its independence and sets yet another alarming precedent threatening the future of science-based policy in WA and across Australia.

FOI documents released to The Australia Institute show the EPA did consult as required with industry groups via its stakeholder reference group. Months before finalising the guidelines, the EPA told the group it was concerned about rising emissions in the lack of policy, and that its offset expectations would be increased. Industry group submissions to the consultations objected to offsetting, in particular on the basis of cost. Conservation groups gave detailed environmental and legal evidence and arguments that projects must not be allowed to increase emissions – either through

offsetting, or rejection of approvals. The EPA then told the stakeholder reference group it was likely to require full offsetting for scope 1 emissions, one week in advance of releasing the policy.

Documents tabled in WA Parliament show the WA Department of Water and Energy Regulation (DWER) was also told of the offset requirements in advance of publication, as was the respective Minister at least two weeks in advance. The advice to the Minister was that the cost of offsetting was “likely to be broadly consistent with the internal carbon price such organisations are using for business risk assessment”.

LNG companies are already planning to pay for their emissions by using ‘shadow carbon prices’ in their investment decisions. This includes Woodside, who use prices

“that reflect our expectations of future carbon prices. These vary over time and jurisdiction. We also use include high and low sensitivities to test major decisions, with the high sensitivity reflecting our understanding of a 2°C scenario.”

Carbon pricing is both widely used and widely understood. Even the Australian Petroleum Production & Exploration Association (APPEA), has suggested projects only be approved if they are assessed using a carbon price.

However while some companies do disclose these prices, WA LNG companies Woodside and Chevron do not. The EPA should ask them to do so as part of their assessment. Proponents should be required to demonstrate the role of the project in scenarios consistent with a 1.5-2°C warming under the Paris Agreement. Since Woodside already does this analysis, such disclosure should not be difficult.

While WA LNG projects are a major and increasing source of domestic emissions, the projects are by the company’s own claims very profitable, and so well able to pay to offset those emissions. Offsets at current prices would cost Woodside 1.1% of ‘gross margins’ at Pluto and 1.5% of gross margins at North West Shelf. For Chevron’s Gorgon and Wheatstone projects, current prices would see offsets cost 2.6% of ‘cash margins’. These offset cost estimates were validated by the WA DWER. Even using Shell’s shadow carbon price of US\$40 per tonne of CO₂e, offsets would cost Woodside 4.6% of Pluto’s margins and 6.2% of North-West Shelf’s margins.

Woodside is currently proposing to extend, expand and link the Pluto and North West Shelf LNG projects to develop the Browse and Scarborough fields. The emissions from the projects will be larger than emissions from the existing operations at the LNG plants. Given the projects will use existing infrastructure is therefore reasonable to assume the margins enjoyed on these projects will be similar to if not lower than those enjoyed on the existing NWS LNG project, and the cost of offsetting is likely to be similarly small by comparison.

A key question raised by the EPA in its recent consultation is whether it should assess and put conditions on scope 3 exported emissions. After decades of fossil fuel companies trying to disown responsibility for exported emissions, it is surprising to see the gas industry seek to use scope 3 arguments to justify increased emissions in Australia.

The gas industry and government supporters are fond of saying that exporting more gas “can” reduce emissions by displacing coal. But the fact that gas power is cleaner than coal power has little bearing on whether extracting and exporting more gas results in less coal being burnt. On the contrary, more gas risks displacing zero carbon energy investment required to meet the goals of the Paris Agreement. More gas supply and gas infrastructure locks in more gas use for longer.

While the gas industry usually gives no evidence of its coal to gas claims, when it does it usually points to the International Energy Agency (IEA). A closer look at the IEA’s reports and data shows global gas consumption expands only in scenarios where the Paris Agreement fails to meet its goal. The preferred scenario is the Sustainable Development Scenario (SDS), which delivers economic growth, universal energy access, and rapid decarbonisation. The SDS sees emissions from gas fall out to 2040. Current approved supply is sufficient to meet demand in the short term. Gas production globally increases by a small amount in the short term, then declines again to 2040.

The gas industry cites approvingly a recent IEA report on gas. That report shows coal to gas switching has played a very small role in abatement relative to baseline in China, the US, EU and India. More abatement was from renewables and “structural economic changes and efficiency” than displacement from gas. The IEA says there is abatement potential from more gas generation at existing power stations, but emphasises this needs regulation and does not support new gas generation.

As the IEA warns, new infrastructure locks in future emissions. New fossil fuel infrastructure now makes environmental outcomes more difficult and costly to achieve. Recent studies published in *Nature* examined the stock of fossil fuel infrastructure globally finding locked in emissions from existing infrastructure exhausts the 1.5C carbon budget and most of the 2C budget. As the Intergovernmental Panel on Climate Change recently showed, the peer reviewed literature requires gas consumption not to increase or to fall out to 2030 and then decline dramatically to 2050.

A simple way to prevent environmental damage from scope 3 emissions from LNG projects is to not allow them to be built. However scope 3 emissions could be managed through conditions on the approvals. The EPA could implement export management

plans so that gas is only exported to countries with an emissions cap or price or other policies that ensure any gas does displace coal, does not lock in new long-term emissions, and is in line with the goals of the Paris Agreement. Alternatively, the EPA could require projects to fully offset their scope 3 emissions or pay a levy on exported emissions that could fund domestic mitigation. This could be adjusted so that it applies only where and to the extent that customer countries do not have appropriate mitigation policies in place.

There are risks and costs associated with offsetting that must be considered. If the offsets do not work, then Australia's emissions will increase. The policy of allowing LNG expansion even if offset is still a risk to Australia's emissions targets. The project proponents should be made responsible for this risk, not the government. Moreover, policies used to offset WA LNG emissions cannot also be used to reduce Australia's emissions. If companies get access to lower cost abatement options to offset LNG emissions, this may increase the cost of reducing Australia's emissions.

If, however, the EPA is to approve large increases in emissions in the absence of effective climate policy, the EPA it must ensure they are fully offset.

Introduction

Australia's emissions are rising, not falling, because there is no credible national climate policy. Australia will not meet its current Paris Agreement targets, according to Australian Government projections, despite an essential objective of the Agreement being a commitment to increase national ambition.

In this context, state governments and authorities must act to reduce emissions. Acting now reduces both environmental damage and the economic costs of later action.

WA is the only state where emissions have increased over the past decade mainly due to increasing production and export of Liquefied Natural Gas (LNG). WA accounts for most of Australia's LNG exports and most of the increase in recent years. LNG is very emissions intensive to produce, so as LNG exports from WA have increased so too have WA emissions. In the absence of a climate policy, further increases in LNG exports will further increase Australia's emissions and further damage the climate.

This was the situation confronting the West Australian Environmental Protection Authority (EPA) earlier this year. The EPA is responsible for independently assessing the environmental impacts of projects in WA and recommending measures to mitigate those impacts. The EPA considered the increasingly concerning climate science, WA's rising emissions and the lack of federal climate policy.

On 7 March 2019, the EPA published comprehensive guidelines for how it would assess projects, including the *Technical Guidance- Mitigating Greenhouse Gas Emissions* (the Technical Guidance).¹ New and expanding projects with direct emissions of more than 100,000 tonnes of CO₂e a year would be required to fully offset all those emissions.

The backlash from the gas industry was immediate and fierce. Lobby groups and companies complained about lack of consultation and threats of job losses. They met with the WA Premier in Parliament House. They launched paid advertising campaigns. Swayed by this reaction, the Premier and the Federal Ministers also criticised the EPA. Just one week later, on March 14, the EPA took the Technical Guidance off its website and began a new public consultation.²

¹ WA EPA (2019) *Technical Guidance- Mitigating Greenhouse Gas Emissions* (withdrawn 14 March).

² WA EPA (2019) *Greenhouse gas emissions assessment Technical Guidance- consultation*
<http://www.epa.wa.gov.au/pages/greenhouse-gas-emissions-assessment-Technical-Guidance-consultation>

This report examines the key claims put forward by the industry during its backlash, and the debate that has followed. Gas companies and their industry groups claimed the guidelines were ad hoc, were not given due consultation, went far beyond requirements under Paris, and would have severe negative economic impacts, in particular on employment.

As this report argues, the former claims are inaccurate, and the latter claim is both inaccurate and irrelevant to the EPA's statutory role.

Over the past year, and in response to the EPA's latest round of consultation, gas companies and federal government ministers have argued that increased LNG emissions are justified by the coal power being displaced overseas. The industry should therefore be comfortable with regulation on that basis. The report examines the evidence for their claims.

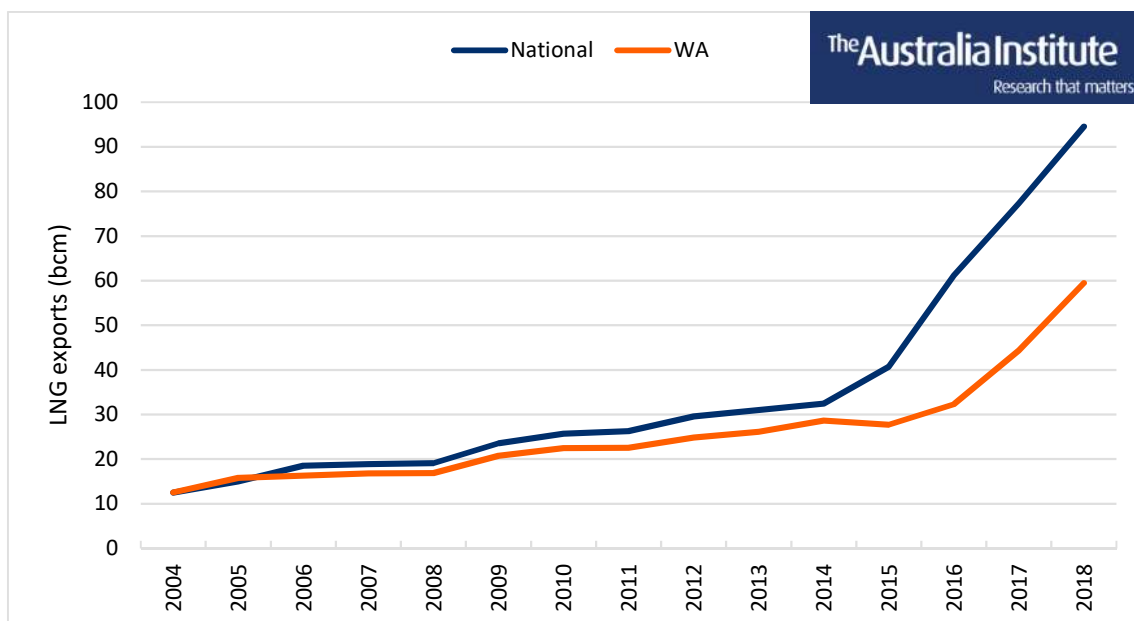
WA LNG pushing up emissions

Australia is the world's largest exporter of LNG and WA is Australia's biggest producer of LNG.³ While emissions in all other Australian states are declining, emissions in WA are increasing, due to the large increase in LNG production and export out of WA.

Extracting and exporting LNG is very emissions intensive, including gas leakage, vented CO₂, flaring and energy-intensive processing. LNG also produces emissions when burnt overseas and while these emissions are not traditionally counted as Australian emissions, they are significant and cause damage.

Most Australian LNG exports are from Western Australia (WA) which has also been responsible for most of the national growth. Further WA LNG projects are under consideration.

Figure 1: LNG Exports – National and WA



Source: National year to December from DEE (2019) *National Greenhouse Gas Inventory Quarterly Update March 2019*, Figure 9; WA from WA DMIRS (2018) *2018 Major commodities resources file*, tonnes to bcm with BP conversion factors.

As large emitters (over 100,000 tCO₂e per year), LNG facilities are subject to the national safeguard mechanism. This mechanism was ostensibly introduced to prevent

³ Western Australian Department of Jobs, Tourism, Science and Innovation (2019) *Oil and Gas*. <https://www.jtsi.wa.gov.au/invest-in-wa/sector/resource-services/oil-gas>

emissions across the economy from increasing, despite government purchases of abatement through the Emission Reduction Fund (ERF), now rebranded the Climate Solutions Fund (CSF). However, the safeguard mechanism allows new high emitting facilities to be built and allowed existing high emitting facilities to increase their emissions.

The Gorgon LNG plant has been granted an emission limit that assumes its carbon capture and storage (CCS) project does not work; Gorgon's multi-year failure to meet the legal obligation to operate CCS has resulted in emissions equivalent to half of Australia's 2018 emissions growth.⁴

Without a credible emissions policy, new LNG projects will push Australia's emissions further up, rather than down, cause more environmental damage, and undermine future efforts to reduce that damage.

NEW WA POLICY STATEMENT INADEQUATE

The WA Government recently announced an 'aspirational' target of net zero emissions by 2050.⁵

Meeting such targets is necessary to align with the global goals of the Paris Agreement. It is not however sufficient. The new target is empty without a credible policy to prevent emissions from increasing.

Greenhouse gases are a stock pollutant. What matters is accumulated emissions over time. A net zero target means little if emissions are allowed to increase.

In its new policy statement, the WA government says it will require new high emitting projects to set out plans to mitigate their emissions. This is already required under EPA assessment. The EPA has a long-established mitigation hierarchy including offsets. The new guidelines merely changed the level of mitigation expected.

The WA government document gives little information on what mitigation will be required. It does not say if the government will prevent new projects from increasing WA and Australia's emissions.

Approving new LNG projects without full emissions mitigation will push emissions up rather than down. Given the lack of credible policy, this is not environmentally sound.

⁴ Swann (2018) *Gorgon-tuan-problem*. <http://www.tai.org.au/content/gorgon-tuan-problem>

⁵ Hon Bill Johnston (2019) Media Statements, *State Government details emissions policy for major projects*. <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/08/State-Government-details-emissions-policy-for-major-projects.aspx>

EPA independence undermined

The WA EPA provides independent, science-based advice to the West Australian government, in particular through principled assessment of development proposals.

That is precisely what the EPA was doing in drafting the GHG Technical Guidance.

The WA EPA is established under the *Environmental Protection Act 1986* (WA) (The EPA Act) as an independent body that assesses the environmental impacts of development proposals and provides advice and recommendations to the Minister for Environment.⁶

The WA EPA provides advice but has no approval power. That resides with the Minister for Environment who, in accordance with the EPA Act must consider the EPA's independent environmental advice and recommendations along with economic, commercial and social factors.

The WA EPA is required to consider only environmental factors. Its Act gives it no power to consider non-environmental factors, including economic considerations, in themselves. This was expressly stated by the Western Australian Supreme Court in the case of *Coastal Waters Alliance* (1996), where it held the EPA could not weigh environmental against economic and commercial considerations.⁷ Justice Rowland stated:

“An overview of the [EPA] Act would seem to confirm that there is some limit to the powers of the Environmental Protection Authority. There is nothing in s 17 which sets out the Environmental Protection Authority powers which would indicate a function that its advice is to be given on other than "environmental matters" in that s 17(3)(b), in particular, so limits the matter.”⁸

As the detrimental effects of GHG emissions on WA's environment have been clearly established, under the EPA's governance framework it is proper and indeed necessary for the EPA to consider and seek to mitigate these emissions.

It is expressly *not* within their governance framework to balance environmental against economic impacts of requiring emissions to be offset.

⁶ EDO (WA), Media Release, 14 March 2019. <http://www.edowa.org.au/2019/03/14/media-release-edowas-response-to-epa-Technical-Guidance-on-greenhouse-gas-emissions/>

⁷ *Coastal Waters Alliance of Western Australia Incorporated* (1996) 90(2) LGRA 136.

⁸ Rowland J, *Coastal Waters Alliance of Western Australia Incorporated* (1996) 90(2) LGRA 136, 151 p2.

The backlash to the GHG Technical Guidance demonstrated widespread misunderstanding of the EPA's statutory obligations. APPEA complained the EPA "has not considered the social or economic impact of its guidelines".⁹ Even Premier Mark McGowan flagged threats to jobs as a major criticism of the Technical Guidance.¹⁰

The EPA may consider economic factors *in so far* as they relate to the environment and measures to protect the environment. But industry complaints went far beyond this and so were inconsistent with their legal role.

The removal of a WA EPA policy from the EPA website pending industry consultation is unprecedented.¹¹ EPA chair, Dr Hatton indicated this is the first time West Australian EPA guidelines have been published after consultation with the Stakeholder Reference Group, only to be withdrawn pending further consultation.¹²

It threatens the independence of the EPA and sets yet another alarming precedent threatening the future of science-based policy in WA and across Australia.

⁹ Dr Malcolm Roberts (APPEA Chief Executive) (2019) *Media Release: WA EPA Guidelines put investment at risk*. https://www.appea.com.au/media_release/wa-epa-guidelines-put-investment-at-risk/

¹⁰ Elicia Kennedy et al (2019) *WA Premier Mark McGowan arracks EPA guidelines aimed at cutting carbon emissions* <https://www.abc.net.au/news/2019-03-08/mark-mcgowan-attacks-epa-carbon-emissions-policy/10882946>

¹¹ Tom Hatton (2019) *Greenhouse gas emissions- Where to from here in WA?* ABC <https://www.abc.net.au/radio/perth/programs/focus/epa/10912410>

¹² Ibid.

FOI shows EPA consultation

Gas companies and lobby groups claim the Technical Guidance was produced without adequate consultation, warning or rationale. APPEA described the Guidance as “ad-hoc”.¹³ Premier Mark McGowan echoed their views:

“They [industry] indicated they thought the consultation in relation to the Technical Guidance was not sufficient and they were not given sufficient opportunity to provide their views on the policy that was ultimately released.”¹⁴

The WA EPA is required to consult with stakeholders over proposed changes to its policies and guidelines. For this purpose the EPA consults with an EPA ‘Stakeholder Reference Group’ (SRG).¹⁵

The SRG includes multiple industry groups representing the resource sector, including

- the Australian Petroleum Production and Exploration Association (APPEA),
- the Association of Mining and Exploration Companies (AMEC),
- and the Chamber of Minerals and Energy (CME).

The SRG also includes the West Australian Local Government Association (WALGA) and conservation organisations.

Given consultation is required and established practice for the EPA, it would have been unusual if the EPA had not consulted, as the gas companies claimed.

CONSULTATION WITH STAKEHOLDERS

The Australia Institute requested the documents sent between the EPA and SRG members over this matter under Freedom of Information (FOI) laws. After delays, the Department processing the request released most of the requested documents.

¹³ APPEA (2019) WA EPA Technical Guidelines put investment at risk, https://www.appea.com.au/media_release/wa-epa-guidelines-put-investment-at-risk/

¹⁴ Mercer and de Kruijff (2019) *Industry carbon emissions guidelines*, The West Australian. <https://thewest.com.au/news/environment/epa-bows-to-pressure-withdraws-industry-carbon-emissions-guidelines-ng-b881135984z>

¹⁵ EPA (2019) *Stakeholder Reference Group- Terms of Reference*. <http://www.epa.wa.gov.au/stakeholder-reference-group-terms-reference>

APPEA objected to release of their submission, which was curious given industry complaints about alleged EPA secrecy. However APPEA later released this document, as part of their new public submission to the new EPA consultation.

The documents confirm that the EPA did indeed consult with SRG, including the industry groups for the gas and other resource companies. This is outlined in Table 1.

Table 1: FOI documents: EPA Consultation over emissions guidance and offsets

Date	Events
21 Nov 2018	EPA SRG Meeting No 47. EPA tells SRG members they will soon receive a draft copy of the EPA's new <i>Technical Guidance on GHG Emissions</i> . EPA explains the elements of the new Technical Guidance will include offsetting provisions and the EPA's expectations will be higher than in previous versions. ¹⁶
21 Jan 2019	CME submission: opposes state-based offset programs.
1 Feb	AMEC submission: offsets will be a major additional impost on proponents. APPEA submission: four sentences on offsets; should not be required "over and above any national emissions reduction approach".
4 Feb	WALGA submission: if offsetting cannot be implemented to prevent emissions from rising, projects should <i>not</i> be approved.
6 Feb	Conservation NGOs submission: includes detailed legal and environmental argument supporting rejecting proposals or requiring full emissions offsetting.
27 Feb	SRG Meeting No 48. The EPA updates the SRG that, as a result of submissions, the EPA has clarified offset requirements: the EPA will recommend offsets for all residual scope 1 emissions.
7 Mar	EPA publishes <i>Draft Technical Guidance</i> on their website. They require offsets for all residual scope 1 emissions.
7-13 March	Industry backlash, including advertising campaigns and industry meetings with the Premier, who criticises the EPA.
14 Mar	EPA withdraws <i>Draft Technical Guidance</i>, pending further consultation.

Source: documents from WA EPA released under FOI to The Australia Institute, media reports.

¹⁶ FOI (2019) DN 2_SRG meeting, p7.

In November 2018 the EPA Chairman met with the SRG. The minutes record the following:

Figure 2: Minutes of EPA meeting with stakeholder reference group November 2018

7. Air Quality Environmental Factor Guideline and Technical Guidance – Greenhouse Gas (GHG) Emissions

The EPA Chairman noted that:

- SRG members will soon receive a draft copy of the EPA's Air Quality Environmental Factor Guideline (revised) and Technical Guidance on GHG Emissions (new) which set out how GHG emissions will be considered by the EPA;
- In its preparation, the EPA has considered advice from the Climate Change Unit of the Department of Water and Environmental Regulation, and has also taken into account that Australia appears unlikely to meet its GHG emissions commitments in 2030, particularly given the projects in WA;
- The elements of the new technical guidance will be familiar to members (benchmarking, continuous improvement, offsetting), but the EPA's expectations will be better defined and will be higher;
- SRG members are asked to provide comments on the draft documents, prior to finalisation by the EPA early in 2019;
- SRG Members were also asked to consider the draft documents under embargo until finalised and published by the EPA.

Source: FOI, SN 2_SRF meeting 21 Nov, highlight added

The minutes show the EPA told the SRG it was acting on WA projects pushing up emissions, that there would be new guidance, it would include offsetting and that the expectations would be better defined and higher than previous. AMEC was present, CME was an apology and APPEA is not listed. All members of the SRG were sent the minutes.

January 2019, SRG members were provided with Draft Technical Guidance.¹⁷ It said;

“The EPA will consider carbon offset proposals with the capacity to make very large contributions to the State’s emissions. In particular, offsets will be considered for those emissions not likely to be addressed by adoption of best practice technologies. ...

The EPA notes that offset requirements are prescriptive, and likely to be non-complementary to a broad-based market mechanism such as a carbon price or ‘cap and trade’ emissions trading scheme. Until emissions from proposals are covered in this manner, offsets will continue to be considered where relevant and appropriate.”¹⁸

¹⁷ FOI (2019) D4_CME feedback.

¹⁸ FOI (2019) D10_Draft Guidelines, p 7-8.

From February 2019, SRG members provided the EPA with their submissions on the Draft Technical Guidance, including feedback on GHG offsetting.

APPEA, CME and AMEC all commented directly on the offsetting provisions of the Draft Technical Guidance. All raised concerns about offsets although with limited argument.

APPEA for example provides only four sentences on offsets almost as an afterthought at the end of its submission. While offsets “provide a potentially important way to reduce emissions”, they should not be required “over and above any national emissions reduction approach”.¹⁹

But this is consistent with what the EPA proposed. The EPA proposed offsets because there is no national or indeed state emissions reduction approach. The EPA’s proposal, to which APPEA was responding, made explicit offsets were not complementary to a carbon price or cap and would only be required “Until emissions from proposals are covered in this manner”.

Bizarrely, the APPEA submission also pleads that “the level of emissions from a facility may be influenced by many factors outside of the control of facility proponent”.²⁰ Plainly, a proponent is primarily responsible for the existence of the facility. Under the EPA Act, the EPA must pursue “the polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance or abatement.”²¹

A range of more detailed submissions from conservation groups provides extensive environmental and legal arguments in support of offsets. Submissions from the WA EDO point to the *Gloucester Resources (2019)* judgement in which the Chief Justice of the NSW Land and Environment Court rejected a mine proposal on grounds that emissions from the exported coal would cause climate change by undermining the Paris goal of ‘net zero emissions’.

On 20 February 2018, SRG members were told they would soon receive a draft of the new Technical Guidance. They were again told the elements would:

“be familiar to members (benchmarking, continuous improvement, offsetting), but the EPA’s expectations will be better defined and will be higher.”²²

¹⁹ APPEA (2019) *SRG Submission to WA EPA*. <https://www.appea.com.au/wp-content/uploads/2019/09/WA-EPA-GREENHOUSE-GAS-EMISSIONS-ASSESSMENT-GUIDANCE---CONSULTATION-APPEA-Submission.pdf> p 16.

²⁰ Ibid.

²¹ *Environmental Protection Act 1986 (WA)* s 4A- Objects and principles of Act

²² FOI (2019) DN 16_Email EPA to SRG, SRG Agenda notes, p6.

At a meeting on 27 February, the EPA provided the SRG with an account of the Draft Technical Guidelines. The minutes show the EPA made clear they will “likely recommend offsets for all residual (after avoid/reduce) scope 1 emissions from a facility”.²³

Figure 3: Minutes from EPA stakeholder meeting, 27 Feb 2019

- Provided clarity on the degree to which the EPA will advise on offsets; specifically, the EPA will likely recommend offsets for all residual (after avoid/reduce) scope 1 emissions from a facility; the EPA will expect the offsets to be legitimate and will encourage the development to achieve those offsets in WA, recognising that because these emissions affect us through a global process, they could be achieved anywhere on the planet and have the same effect in terms of climate. The EPA understands the significant impost that this advice places on industry, but the objective of the Authority is to use its best endeavours to protect the environment and it is the Government’s role to consider social and economic factors. The EPA advice will apply to all new projects and changed projects, recognising the need for a transition phase to give proponents time to develop plans.

Source: FOI DN 1_SRG meeting 27 Feb

The documents released under FOI clearly show the EPA consulted with LNG industry representative groups and told them about potential offsetting requirements months before the Technical Guidance was published. The industry groups were made aware that the requirements would apply to the whole of a project’s emissions more than a week prior to the Technical Guidance being published.

The EPA was persuaded by environmental evidence and performed its legal duty.

The gas companies that criticised the EPA appear not to have criticised their own industry groups for their performance in the consultation process.

INFORMING GOVERNMENT

Documents tabled in WA Parliament show the EPA also informed the Department and Minister about the Guidelines.²⁴

Advice to the Minister on 20 February regarding the EPA offset requirements, noted that there would be costs “broadly consistent with the internal carbon price such

²³ FOI (2019) DN_SRG meeting 27 feb, p5.

²⁴ WA DWER (2019) *Tabled Paper No. 2783*

[http://www.parliament.wa.gov.au/publications/taledpapers.nsf/displaypaper/4012783c201a3c779f812573482584180035d7b8/\\$file/tp-2783.pdf](http://www.parliament.wa.gov.au/publications/taledpapers.nsf/displaypaper/4012783c201a3c779f812573482584180035d7b8/$file/tp-2783.pdf)

organisations are using for business risk assessment purposes” and would include potential “environmental and economic co-benefits for the State”.²⁵

Figure 4: Advice to WA Environment Minister, 20 February 2019

The EPA's revised approach to offsets may place significant burden on proponents, with proposed requirements to offset all residual direct (scope 1) emissions. In addition, the threshold for consideration of offsets has been lowered from very large proposals to all proposals with emissions (scope 1 and scope 2) above 100,000 tonnes of carbon dioxide equivalent, noting that only scope 1 emissions will be subject to offset requirements.

Compliance costs for large liquefied natural gas projects are likely to be substantial, although these are likely to be broadly consistent with the internal carbon price such organisations are using for business risk assessment purposes. As different offsets have significantly different cost profiles, compliance costs associated with offsetting scope 1 emissions from the Wheatstone project may be between \$30 and \$130 million per annum at full production. As the EPA guidance acknowledges, offsets are not complementary to some national emissions policies and, if applied, should be removed if national market-based measures are in place.

In terms of economic co-benefits for the State, offsets applied under Part IV of the EP Act have the potential to be a significant source of demand for the local offset market. This would include potential environmental and economic co-benefits for the State.

Source: WA DWER (2019) *Tabled Paper No. 2783*

The advice to the Minister also suggested that the government might instead pay companies to pollute less, and the Department would consider alternative policies.

A further Ministerial briefing dated 27 February responds to the 21 February advice. It notes “the EPA’s new guidance ... adds requirements for offsets for scope 1 emissions.”

It further notes the benefits of requiring local offsets “have the potential to be a strong demand source for State offsets, with associated benefits for regional economies, diversification and jobs.”

Rather than look at ways of maximising benefits to the state, the Department note they were “evaluating options, including the establishment of a carbon abatement fund underpinned by industry contributions.”²⁶

Such a fund could be an adequate alternative only if it is mandatory and delivers revenue sufficient to offset the increase in emissions.

²⁵ Ibid.

²⁶ WA DWER (2019) *Tabled Paper No. 2783*
[http://www.parliament.wa.gov.au/publications/taledpapers.nsf/displaypaper/4012783c201a3c779f812573482584180035d7b8/\\$file/tp-2783.pdf](http://www.parliament.wa.gov.au/publications/taledpapers.nsf/displaypaper/4012783c201a3c779f812573482584180035d7b8/$file/tp-2783.pdf)

LNG companies are planning to pay

Despite claims the EPA proposal was ‘out of the blue’, most LNG companies have been planning to pay for their pollution for some time. All of the major WA gas companies are preparing to pay for carbon, and disclose these risks to their shareholders.

DISCLOSURES TO SHAREHOLDERS

Annual reports show that both Chevron and Woodside consider GHG emissions policy to represent a material risk. Woodside’s 2018 Annual report states:

Woodside faces climate change related risks including changes in product demand, carbon pricing, uncertainty surrounding future regulatory frameworks and increased stakeholder expectations.”²⁷

Chevron’s 2018 Annual report notes:

the potential liability for remedial actions or assessments under existing or future environmental regulations and litigation; significant operational, investment or product changes required by existing or future environmental statutes and regulations, including international agreements and national or regional legislation and regulatory measures to limit or reduce greenhouse gas emission²⁸

The companies and their shareholders are not blind to the risks of future climate policy.

²⁷ Woodside (2018) *Annual Report 2018*, <https://www.woodside.com.au/investors/reports-publications/report/annual-report-2018>, p 62.

²⁸ Chevron (2018) *Annual Report 2018*, <https://australia.chevron.com/-/media/shared-media/documents/annual-report-supplement-2018.pdf>, p 56.

SHADOW CARBON PRICES

It is common for major corporations to assess investment decisions against an internal or ‘shadow carbon price’. For example, Woodside’s disclosure to CDP (a voluntary but widely used climate disclosure platform) makes clear that Woodside uses

carbon prices that reflect our expectations of future carbon prices. These vary over time and jurisdiction. We also use include high and low sensitivities to test major decisions, with the high sensitivity reflecting our understanding of a 2°C scenario.

Woodside says the “Type of internal carbon price” includes “Implicit” prices as well as “Offsets”. As rationale Woodside states:

By including carbon prices in our commercial and operational decisions, we ensure that the actual regulatory costs associated with these decisions are considered and results in more efficient design and operation than would be the case if we did not apply carbon prices.

Woodside does not however disclose its shadow carbon prices. This contrasts with other major oil and gas companies, and indeed other major Australian corporations.

Shell for example has applied internal carbon prices of US\$40-\$80 per tonne since 2000, while BHP has applied prices of US\$24-\$80 per tonne since 2004.²⁹ Wesfarmers discloses a shadow carbon price starting low but reaching A\$26 per tonne by year 8 and \$53 per tonne by year 16.³⁰

Such actions have not of course prevented these companies from obstructing policy progress to implement such policies over many decades. They do however leave little doubt that the companies are prepared to pay for the cost of their emissions.

This is widely understood, including by the WA government. Documents tabled in Parliament show the Departmental officials advising that the cost of purchasing offsets are “likely to be broadly consistent with the internal carbon price such organisations are using for business risk assessment”.³¹

²⁹ Centre for Climate and Energy Solutions (2019) *Companies set their own price on carbon*
<https://www.c2es.org/2017/09/companies-set-their-own-price-on-carbon/>

³⁰ Wesfarmers (2018) *Wesfarmers sustainability report 2018*
<https://sustainability.wesfarmers.com.au/our-principles/environment/climate-change-resilience/shadow-carbon-price/>

³¹ WA DWER (2019) Tabled Paper No. 2783, p 2.
[http://www.parliament.wa.gov.au/publications/tailedpapers.nsf/displaypaper/4012783c201a3c779f812573482584180035d7b8/\\$file/tp-2783.pdf](http://www.parliament.wa.gov.au/publications/tailedpapers.nsf/displaypaper/4012783c201a3c779f812573482584180035d7b8/$file/tp-2783.pdf)

Similarly, in APPEA’s February 2019 submission to the SRG consultation APPEA argues that assessment of major projects should be based on “leading indicators” of how well project design mitigates emissions. As an example, APPEA cited “has the proponent applied an international carbon price in assessing design options?”³²

While this proposal is not repeated in APPEA’s subsequent submission, it is worth supporting, but only if substantially strengthened. For such considerations to be effective, proponents should be required to disclose the carbon prices applied and what climate scenarios they consider this consistent with.

Such disclosure would implement the key recommendations of the G20 financial Stability Board’s *Taskforce on Climate Related Financial Disclosures*. The disclosure could be made through existing platforms, such as CDP. Such disclosures would also enable scrutiny of gas industry claims that their projects are necessary for tackling climate change.

Requiring full offsetting would impose the same incentives to design for abatement as a rigorously applied shadow carbon price.

³² APPEA (2019) *SRG Submission to WA EPA*. <https://www.appea.com.au/wp-content/uploads/2019/09/WA-EPA-GREENHOUSE-GAS-EMISSIONS-ASSESSMENT-GUIDANCE---CONSULTATION-APPEA-Submission.pdf> p 16.

Cost of offsetting LNG emissions

While WA LNG projects are a major and increasing source of domestic emissions, the projects are so profitable they are well able to pay to offset those emissions.

As noted above, the EPA is required not to assess economic factors themselves. If a project cannot afford to fully mitigate its emissions, in the absence of credible climate policy conditions the EPA would be justified in recommending conditions that would prevent the project from going ahead.

However it is necessary to correct misleading industry claims about the impacts of offsetting. The gas industry claimed fully offsetting scope 1 emissions would put jobs at risk.

The Australia Institute's calculations show the cost of offsetting emissions, in line with the EPA's Technical Guidance would represent a very small share of the project's profits, as outlined below (detailed calculations and all references in Appendix).

The offset cost estimates have been validated by the WA Department of Environment Water and Resources (DWER), in documents tabled to the WA Parliament.

The offsetting requirements of the Technical Guidance would only affect new projects. However calculations for current projects can be used as a proxy for future projects.

There are four operational LNG projects in WA (excluding the floating Prelude):

- Woodside's Pluto and North West Shelf projects, and
- Chevron's Wheatstone and Gorgon projects.³³

The calculations use scope 1 project emissions. Multiplying these by offset prices per tonne gives the total offset cost by project. The companies disclosed figures for revenue less key production costs. This allows comparison of offset costs compared with profits.

EMISSIONS AND OFFSET COSTS

For Woodside, data is from disclosures under the safeguard mechanism. For Chevron, as Gorgon has faced problems during ramp up, especially with its carbon capture and

³³ APPEA (2019) *Australia LNG Projects* <https://www.appea.com.au/oil-gas-explained/operation/australian-lng-projects/>


storage (CCS) commitment, the data are full capacity expected emissions, with and without CCS.

The base offset cost is the average per Australian Carbon Credit Unit (ACCU) in the eighth Emissions Reduction Fund held in December 2018 (\$13.87 per tonne CO₂e).³⁴ For sensitivity we also use the Shell shadow carbon price of US\$40 (A\$58) and a much higher price of A\$150 / tonne.

On 13 June 2019, the WA Department of Environment Water and Resources (DWER) tabled documents in the WA Parliament estimating the cost to large Liquefied Natural Gas (LNG) projects of offsetting greenhouse gas emissions.³⁵

Table 2: Cost estimates for offsetting emissions from WA LNG projects

LNG Projects	WA Government estimate (\$m)	The Australia Institute estimate (\$m)
Wheatstone + Gorgon (Chevron)	\$242m	\$228m
North West Shelf (Woodside)	\$100m	\$106m



DWER’s figures validate The Australia Institute earlier estimates using the ACCU costs. Indeed, the Department provides even lower estimates using far cheaper, less rigorous units.

WOODSIDE - NORTH WEST SHELF, PLUTO

Woodside’s annual report discloses the “gross margin” for their interest in Pluto and North West Shelf projects.³⁶ This is revenue less production costs, depreciation and amortisation, and “other”. The gross margins in 2018 were 55%-56% respectively.

At current ACCU prices, fully offsetting scope 1 emissions would cost Woodside 1.1-1.5% of gross margins for Pluto and the North-West Shelf respectively.

³⁴ CER (2018) *ERF Auction Results, December 2018*

<http://www.cleanenergyregulator.gov.au/ERF/Auctions-results/december-2018>

³⁵ WA DWER (2019) Tabled Paper No. 2783

[http://www.parliament.wa.gov.au/publications/tailedpapers.nsf/displaypaper/4012783c201a3c779f812573482584180035d7b8/\\$file/tp-2783.pdf](http://www.parliament.wa.gov.au/publications/tailedpapers.nsf/displaypaper/4012783c201a3c779f812573482584180035d7b8/$file/tp-2783.pdf)

³⁶ Woodside (2018) *Annual Report 2018* [https://files.woodside/docs/default-source/investor-documents/major-reports-\(static-pdfs\)/annual-report-2018.pdf?sfvrsn=c9a46145_6](https://files.woodside/docs/default-source/investor-documents/major-reports-(static-pdfs)/annual-report-2018.pdf?sfvrsn=c9a46145_6), page 28-30

At the Shell shadow carbon price, it would cost Woodside 4.6%-6.2% of gross margins.

Even up to \$150 per tonne of CO₂, Woodside would be paying only 12%-16% of gross margins for these projects.

Woodside boasts “Our high margin, low cost operations will generate cash flow” in a range of scenarios.³⁷ These calculations support Woodside’s self-assessment.

CHEVRON - GORGON, WHEATSTONE

Last year Chevron boasted to media and investors that the Wheatstone and Gorgon projects were “becoming strong cash generators with cash margins of more than \$US30 per barrel at a \$US50 Brent price”. The reporter noted this would have been delivering margins of \$32 million per day.³⁸ The offset costs would take around a week to pay off.

At the time (February 2018) Brent prices were at US\$68 per barrel. At the time of The Australia Institute’s earlier analysis (March 2019) they were at US\$66 per barrel; presently (September 2019) they are at US\$58 per barrel.

At current ACCU prices and Brent prices of between \$58-\$68 per barrel, offsetting these emissions would amount to just 2.1%-2.6% of Chevron’s cash margins.

While Chevron’s development approval for Gorgon requires it to sequester most of the CO₂ fugitives it produces, this did not occur for the first years of its operations. Chevron has now announced its carbon capture and storage (CCS) facility is ramping up, but it is unclear at what rate and given previous problems ongoing operation is uncertain. Chevron’s failed CCS project led Gorgon to emit the equivalent of half of Australia’s annual 2018 increase in emissions.³⁹

The cost of offsetting Chevron’s two major projects would drop to only 1.6-2.0% if the long-awaited carbon capture and storage (CCS) facility becomes fully operational.

The Shell shadow carbon price would see Chevron paying between 6.9% of its margins, at the higher oil price and assuming CCS operates, and 10.8% if CCS fails and at the lower oil price.

³⁷ Woodside (2018) *Annual Report 2018*, p 20.

<https://www.woodside.com.au/investors/reports-publications/report/annual-report-2018>

³⁸ Peter Milne (2018) *Chevron LNG projects Gorgon and Wheatstone earning \$32 million a day*
<https://thewest.com.au/business/oil-gas/chevron-lng-projects-gorgon-and-wheatstone-earning-32-million-a-day-ng-b88734044z>

³⁹ Swann (2018) *Gorgon-tuan-problem*. <http://www.tai.org.au/content/gorgon-tuan-problem>

WOODSIDE - BROWSE, BURRUP, SCARBOROUGH

Woodside is currently proposing to extend, expand and link the Pluto and North West Shelf LNG projects. It plans to develop Browse and connect it to the NWS LNG project via a long sea pipeline, to replace input gas from fields due to phase down, extending the NWS LNG terminal's operations by many decades. Woodside also has plans to develop the Scarborough field, with gas piped for export from Pluto, expanding Pluto, and connecting Pluto to NSW.

These are all separate development applications. From an environmental perspective they should be considered in terms of the emissions they enable, not simply emissions from point sources under each proposal.

The Browse gas field is far offshore. Parts of Browse are in state waters surrounding a reef far from the coast. Most proposed wells are in Commonwealth waters. However, the EPA should consider all emissions from extracting and processing gas that would be exported from NWS, including gas extracted from Commonwealth waters.

These projects will require some new capital expenditure, especially the very long sea pipeline from Browse. However much of the plant already exists, especially the capital-intensive LNG processing and export facilities.

It is therefore reasonable to assume the margins enjoyed on these projects will be similar to those enjoyed on the existing NWS LNG project, and the cost of offsetting is likely to be similarly small by comparison.

EPA should consider scope 3

A key question raised in the EPA background paper is whether the EPA should consider scope 3 emissions. These are emissions not directly emitted from projects (scope 1) or their electricity supply (scope 2). For fossil fuel extraction, scope 3 emissions are primarily emissions from burning the fuel; exported scope 3 emissions occur overseas.

Exported emissions are beyond the scope of greenhouse accounting under the UN Framework Convention on Climate Change. This approach is, however only one half of the picture. This is clear when considering countries like Australia that export most of what they extract. Australia is the 14th largest direct emitter but fifth largest miner and third largest exporter of fossil fuel CO₂.⁴⁰

The Australia Institute has argued for many years that climate policy should address both fossil fuel demand *and* supply. The arguments for supply policy are well elaborated elsewhere. In short, attempting to reduce demand without reducing supply is like trying to cut emissions with one arm of a pair of scissors; both must work together.

For decades fossil fuel companies in Australia, their lobby groups and governments have all argued that climate policy should not try to constrain supply, and that exported emissions are another country's responsibility.

It is therefore surprising to see gas companies, lobby groups and governments now appeal to scope 3 emissions as justification for increased domestic emissions from increased LNG supply. At least it is now agreed that Australian environmental policy should consider scope 3 emissions.

APPEA argues such 'displacement' emission reductions should be disclosed and considered as part of the approval process. APPEA then caveats (in bold) "this disclosure should not be confused with a requirement for regulation."⁴¹

If gas companies want to claim reductions in emissions overseas to justify increased emissions in Australia, they cannot expect to avoid regulation on exported emissions.

⁴⁰ Swann (2019) *High Carbon from a Land Down Under*

https://www.tai.org.au/sites/default/files/P667%20High%20Carbon%20from%20a%20Land%20Down%20Under%20%5BWEB%5D_0.pdf

⁴¹ APPEA (2019) *Background Paper on Greenhouse Gas Assessment Guidance: APPEA Comments*, p10

<https://www.appea.com.au/wp-content/uploads/2019/09/WA-EPA-GREENHOUSE-GAS-EMISSIONS-ASSESSMENT-GUIDANCE-%E2%80%93-CONSULTATION-APPEA-Submission.pdf>

COAL TO GAS CLAIMS

Surprisingly, gas proponents rarely provide evidence for their claims that gas exports reduce emissions.

Woodside claims “LNG can displace higher emissions energy sources in transport and power generation”.⁴² The key word here is ‘can’. They give no evidence it *is* happening.

Recently the federal Minister for Energy and Emission Reduction Angus Taylor made a stronger claim:

"In the last year there is a 0.6 per cent increase but it was more than accounted for by the very strong growth in LNG exports that are reducing global emissions. We're seeing a reduction in emissions as a result of Australia's gas exports, but we have to wear a small increase as a result of that. While that is not great for carbon accounting it is a good outcome for the world."⁴³

Yet again no evidence is provided.

The fact that gas power is cleaner than coal power has little bearing on whether extracting and exporting more gas results in less coal being burnt.

On the contrary, more gas risks displacing zero carbon energy investment required to meet the goals of the Paris Agreement. More gas supply and gas infrastructure locks in more gas use for longer.

WHAT THE IEA SAYS ABOUT GAS

On the rare occasions gas proponents do give evidence, they usually point to the International Energy Agency’s New Policies Scenario (NPS).

The NPS sees gas consumption increasing to 2040. It assumes failure on climate change with global warming of 3-4 degrees.

The preferred scenario is the Sustainable Development Scenario (SDS), which delivers economic growth, universal energy access, and rapid decarbonisation. The SDS sees

⁴² Woodside (2019) *Climate Change* <https://www.woodside.com.au/sustainability/climate-change>

⁴³ Taylor quoted in Long (2019) *Australia’s carbon emissions continue to rise despite Government assurances about climate change policy*, ABC Online, <https://www.abc.net.au/news/2019-08-30/emissions-drop-but-year-long-trend-on-the-rise/11464816>

emissions from gas fall out to 2040.⁴⁴ Under the SDS, gas production globally increases by a small amount then declines again to 2040.⁴⁵

Current LNG proposals “approved for investment” would exceed even the NPS in the short term.⁴⁶ While the IEA does not compare the infrastructure ‘pipeline’ with the SDS, it is clear that increased supply to meet the NPS would breach the SDS and the climate goals of Paris.

The IEA has set out short term actions to enable mitigation in line with SDS. Reviewing the first two years of progress, the IEA finds the world is going backwards on oil and gas methane leakage, and is far behind on reducing inefficient coal power generation. Only renewable energy installation is ‘on track’.⁴⁷

The increase in gas is not delivering the result the gas companies claim.

In a recent report on gas, the IEA examines historical coal to gas switching and potential for further switching. APPEA cites this approvingly, in their submission to the most recent EPA consultation. However, the IEA gas report is in fact highly circumspect:

[Gas] can bring environmental benefits, but it remains a source of emissions in its own right and new gas infrastructure can lock in these emissions for the future. ... the benefits provided by gas need to be weighed against the risks of locking in future gas-related emissions

... beating the most carbon-intensive fuel is not in itself a persuasive case for gas if there are lower emissions and lower-cost alternatives to both fuels. The falling cost of renewable technologies in the power sector is the clearest case in point. In many markets, wind and solar PV are already among the cheapest options for new generation.⁴⁸

The IEA finds coal power has fallen and gas power has increased in some countries (relative to baseline). They call this ‘switching’. However in every case study – US, EU, China, India – coal to gas switching has played a very small role in abatement, smaller than renewable energy and far smaller than “structural economic changes and efficiency”. For example, Figure 5 shows the tiny role of gas in abatement in China.

⁴⁴ IEA (2018) *WEO*, page 88

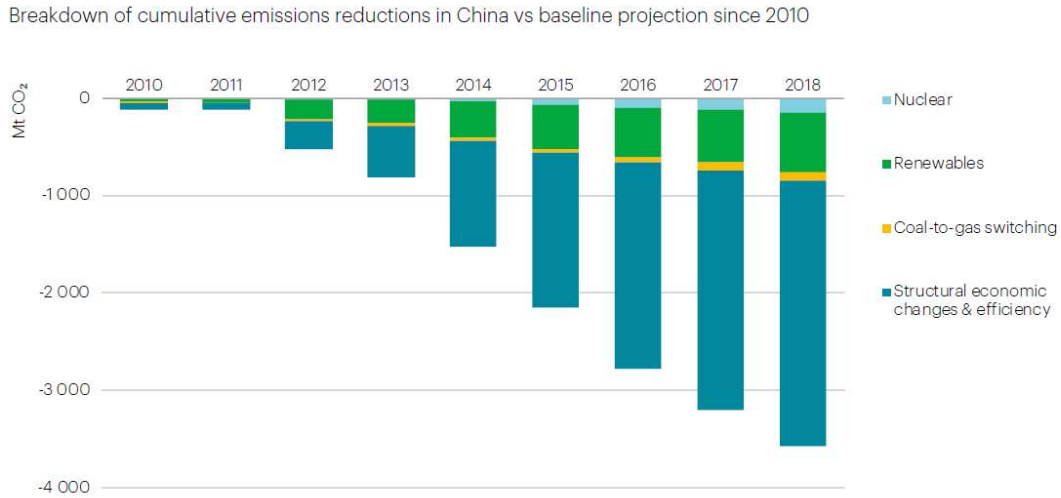
⁴⁵ IEA (2018) *WEO*,

⁴⁶ IEA (2018) *WEO*, Annex A, Current Policies and Sustainable Development Scenarios, page 521

⁴⁷ IEA (2018) *WEO*, page 109

⁴⁸ IEA (2019) *Role of Gas in Today's Energy Transitions*, p42

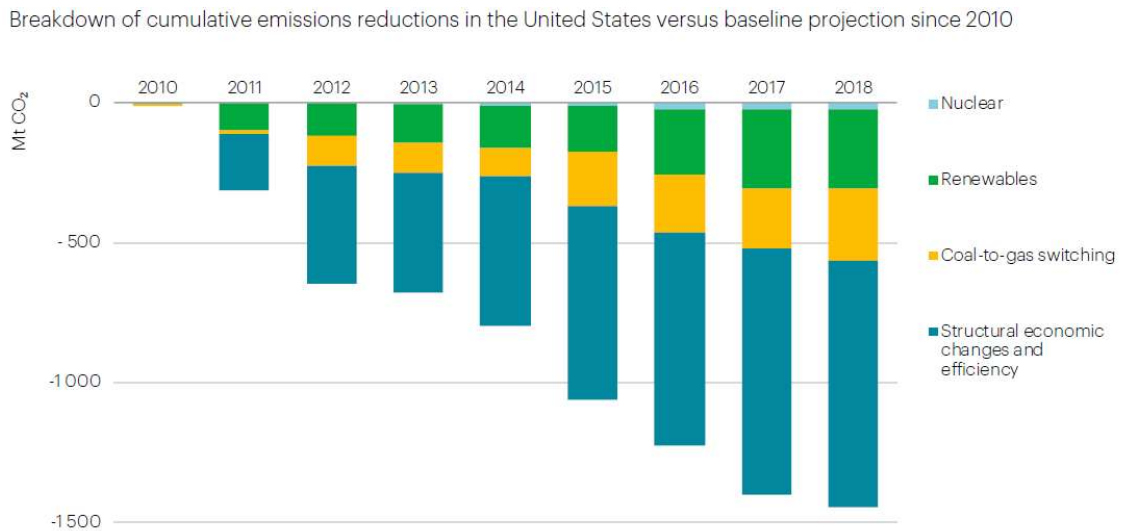
Figure 5: IEA estimate of source of abatement in China



Source: IEA (2019) *Role of Gas in Today's Energy Transitions*, page 73

Figure 6 shows somewhat more switching has occurred in the US, however even there it is smaller than from renewables and most abatement has occurred from structural and efficiency changes.

Figure 6: IEA estimate of source of abatement in USA



Source: IEA (2019) *Role of Gas in Today's Energy Transitions* page 47

The IEA gas report finds “We estimate that up to 1.2 gigatonnes of CO₂ could be abated in the short term by switching from coal to existing gas-fired plants, if relative prices and regulation are supportive.”⁴⁹ APPEA quotes this directly in their submission

⁴⁹ IEA (2019) *Role of Gas in Today's Energy Transitions* page 4

to the EPA consultation but ignores the IEA's following sentence is that "The vast majority of this potential lies in the United States and in Europe." These are not major customer countries for Australia's LNG. APPEA also ignores IEA focus on *regulation* for increased use of *existing* generators, due to concerns about lock in. Even then, the IEA sees gas switching accounting for only 8% of required abatement under SDS, far smaller than energy efficiency and renewable energy.

Taken together, IEA data and the projections undermine rather than support gas company claims about the environmental benefits of large increases in gas production.

NO NEW FOSSIL FUEL INFRASTRUCTURE

Just as climate change is caused by the accumulated stock of greenhouse gas emissions, carbon emissions are caused by the stock of infrastructure. Building new supply and generation infrastructure means both supply and demand are possible at a lower short-run marginal cost. New fossil fuel infrastructure now makes environmental outcomes more difficult and costly to achieve, requiring 'stranded assets' and conflict with established facilities.

Recent studies published in *Nature* examined the stock of fossil fuel infrastructure globally, comparing the extent of greenhouse gas emissions 'locked in' to the carbon budget required for a given probability of meeting climate targets.

One study in *Nature* finds current fossil fuel infrastructure, if simply retired at the end of expected lifetimes, would deliver a 64% chance of meeting the Paris goal of limiting warming to 1.5°C. Allowing new infrastructure out to 2030 makes this unfeasible without early retirement ('stranded assets').⁵⁰

A later study in *Nature* finds existing fossil fuel infrastructure already exceeds the 1.5 target and exhausts most of the 2C upper limit:

"our estimates suggest that little or no new CO₂-emitting infrastructure can be commissioned, and that existing infrastructure may need to be retired early (or be retrofitted with carbon capture and storage technology) in order to meet the Paris Agreement climate goals."⁵¹

The Intergovernmental Panel on Climate Change recently examined the costs of global temperature increases above 1.5°C, as targeted in the Agreement, and what is

⁵⁰ Smith et al. (2019) *Current fossil fuel infrastructure does not yet commit us to 1.5°C warming*, Nature Communications 10 (101). <https://www.nature.com/articles/s41467-018-07999-w>

⁵¹ Tong et al. (2019) *Committed emissions from existing energy infrastructure jeopardize 1.5°C*, Nature 572. <https://www.nature.com/articles/s41586-019-1364-3>

required to prevent that from happening. It found very significant environmental costs associated with breaching that limit. The IPCC assessed peer-reviewed literature and concluded there is unlikely to be a greater role for gas in meeting the Paris 1.5°C goal. Gas power generation must stay flat or reduce out to 2030 and then decline dramatically out to 2050.⁵²

These scenarios are more stringent than the IEA's SDS, however even the IEA's SDS gives little to no role for large new gas expansions.

CONDITIONS ON SCOPE 3 EMISSIONS

There are many ways environmental approvals could seek to prevent gas exports from increasing global emissions.

The EPA could mandate export management plans to be conditional on exports only to certain countries. This approach was taken recently by the NSW Independent Planning Commission in conditions on a coal mine approval.⁵³ However, stronger specification of export conditions is needed for meaningful environmental protection aligned with the environmental goals of the Paris Agreement.

Export management plans could be constrained to countries and in contexts where "relative prices and regulation" support or mandate levels of mitigation aligned with the Paris Agreement. Conditions could include restricting exports to customer countries with economy wide or electricity sector carbon caps or prices, as urged by gas companies themselves. To ensure gas helps reduce rather than lock in excess emissions, customer countries could be constrained to those whose Paris targets and policies align with the global goals of the Paris Agreement.

Alternatively, the EPA could require projects to fully offset their scope 3 emissions or pay a levy on exported emissions that could fund domestic mitigation. This could be implemented where and to the extent that customer countries do not have appropriate mitigation policies in place. Concerns about complementarity could be addressed by setting obligations net of explicit or implicit emissions prices in the customer countries. If difficulties implementing such arrangements a major concern this should weigh against approving such exported emissions.

⁵² IPCC (2019) *Special Report: Global Warming of 1.5°C, Mitigation pathways compatible with 1.5°C in the context of sustainable development*, Table 2.7. <https://www.ipcc.ch/sr15/chapter/chapter-2/>

⁵³ NSW Government IPC (2019) *Statement of reasons for decision: United Wambo Open Cut Coal Mine Project*. <https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2018/11/united-wambo-open-cut-coal-mine-project-ssd-7142/determination/uwjb--sor--final.pdf> par 309 onwards

Offsets undermine emissions reductions

There are many environmental issues with emissions offsets, including ensuring additionality and integrity. These are alleviated somewhat by requiring the National Carbon Offsets Standards, or surrender of Australian Carbon Credit Units. However, issues arise here as well, with projects granted ACCUs under the Emissions Reduction Fund (ERF) facing allegations or even admitting they are not additional (i.e. would have happened anyway).

If the offsets do not work, then Australia's emissions will increase. The policy of allowing LNG expansion when offset is still a risk to Australia's emissions targets. The project proponents should be made responsible for this risk, not the government.

A further, more fundamental point is rarely made;

Offsetting WA LNG emissions will not reduce emissions. It will only stop emissions from increasing. Moreover, given that Australia must reduce its emissions, any offsets must also be additional to what we need to do to reduce emissions.

Put differently, policies used to offset WA LNG emissions cannot also be used to reduce emissions. If companies get access to lower cost abatement options to offset LNG emissions, this may increase the cost of reducing Australia's emissions.

If the lower cost options go towards reducing Australia's emissions, this may increase the cost of offsetting WA emissions.

It is therefore doubtful that requiring offsets for increased emissions is cost effective environmental policy.

However, if however the EPA is to approve large increases in emissions in the absence of effective climate policy, the EPA it must ensure they are fully offset. The need for state agencies like the EPA to take such action again reflects the need for federal action and the costs created by failing to have an effective carbon price or other policy.

Appendix - Estimated offset costs

WOODSIDE

		NWS LNG	Pluto LNG
Gross profit⁵⁴	US\$m	826	1,546
Gross profit⁵⁵	A\$m	1,165	2,180
Emissions			
2016-17 project emissions⁵⁶	mtCO2e	7.66	1.97
Woodside interest in project⁵⁷	%	17%	90%
Woodside emissions	tCO2e	1.28	1.78
Offset costs			
ACCU offset price⁵⁸	A\$/tCO2e	13.87	13.87
Total offset cost	\$m	18	25
/ gross profit	%	1.5%	1.1%
BP / Shell shadow carbon price⁵⁹	US\$/t	40	40
	A\$/t ⁶⁰	58	58
Total offset cost	A\$m	74	103
/ gross profit	%	6.2%	4.6%
higher offset / carbon price	A\$/t	150	150
total offset cost	A\$m	192	266
/ gross profit	%	16%	12%

⁵⁴ Woodside (2018) *Annual Report* [https://files.woodside/docs/default-source/investor-documents/major-reports-\(static-pdfs\)/annual-report-2018.pdf?sfvrsn=c9a46145_6](https://files.woodside/docs/default-source/investor-documents/major-reports-(static-pdfs)/annual-report-2018.pdf?sfvrsn=c9a46145_6), page 28-30

⁵⁵ At \$1.45

⁵⁶ CER (2019) *Safeguard Facilities Reported Emissions*
<http://www.cleanenergyregulator.gov.au/NGER/National%20greenhouse%20and%20energy%20reporting%20data/safeguard-facility-reported->

⁵⁷ Woodside (2018) *Annual Report*

⁵⁸ CER (2018) *ERF Auction Results December 2018*

<http://www.cleanenergyregulator.gov.au/ERF/Auctions-results/december-2018>

⁵⁹ Macdonald-Smith (2019) *WA Slaps Down EPA Amid Calls for Reckless Carbon Rule to Be Rescinded*
<https://www.afr.com/business/energy/gas/wa-slaps-down-epa-amid-calls-for-reckless-carbon-rule-to-be-rescinded-20190313-h1cc33>

⁶⁰ At \$1.45

CHEVRON

Emissions at capacity production					
Wheatstone ⁶¹	Mt CO2e	10.4			
Gorgon (w CCS) ⁶²	Mt CO2e	6			
Gorgon (no CCS)	Mt CO2e	10			
Total w CCS	Mt CO2e	16.4			
Total no CCS	Mt CO2e	20.4			
Offset costs					
Offset price ⁶³	A\$/t	\$13.87	\$50		
Offset cost (w CCS)	A\$m	\$282.9	\$1,183		
Offset cost (no CCS)	A\$m	\$227.5	\$951		
Surplus					
Cash costs per barrel ⁶⁴	US\$	20			
Production capacity ⁶⁵	Barrels /day	545,000			
Brent crude oil price ⁶⁶	US\$ /Barrel	68	58	68	58
Margin per barrel	US\$/Barrel	48	38	48	48
Total margin	US\$m	\$9,548	\$7,559	\$9,548	\$9,548
	A\$:US\$	1.45	1.45	1.45	1.45
	A\$m	\$13,845	\$10,961	\$13,845	\$10,961
Offset cost as % of cash surplus					
max, no CCS	%	2.04%	2.58%	8.55%	10.79%
max, w CCS	%	1.64%	2.08%	6.87%	8.68%

⁶¹ SBS (2018) *Chevron LNG project facing emissions row* <https://www.sbs.com.au/news/chevron-lng-project-facing-emissions-row>

⁶² Chevron (2018) Fact sheet: *Gorgon carbon dioxide injection project* <https://australia.chevron.com/-/media/australia/publications/documents/gorgon-co2-injection-project.pdf>

⁶³ CER (2018) *ERF Auction Results December 2018* <http://www.cleanenergyregulator.gov.au/ERF/Auctions-results/december-2018>

⁶⁴ Peter Milne (2018) *Chevron LNG projects Gorgon and Wheatstone earning \$32 million a day* <https://thewest.com.au/business/oil-gas/chevron-lng-projects-gorgon-and-wheatstone-earning-32-million-a-day-ng-b88734044z>

⁶⁵ Ibid.

⁶⁶ Prices as at time of cash margin claim, and presently from Oil Price (2019) <https://oilprice.com/>