

Woodside's Burrup Hub **carbon bomb** in perspective

How climate pollution from Woodside's new Burrup Hub gas expansion eclipses global carbon bombs, other countries' emissions and Australia's climate action plan.



**We acknowledge the
Traditional Owners of
Country** and their continuing
connection to land, waters and
community. **We pay respect to
their Elders past and present**
and to the pivotal role that
First Nations Peoples continue
to play in **caring for Country
across Australia.**

Contents

Background and introduction	4
Summary of findings	5
Woodside’s new Burrup Hub projects	7
Burrup Hub compared with global carbon bombs	9
Burrup Hub compared with new carbon bombs in the Southern Hemisphere	13
Burrup Hub compared with international greenhouse gas emissions	16
Burrup Hub compared with Australia’s greenhouse gas emissions	17
Burrup Hub compared with Australia’s climate policies and targets	18
Burrup Hub compared with Woodside’s abatement efforts	20
Burrup Hub compared with global carbon capture and storage	22
Conclusion and recommendations	25

Carbon bombs are defined as fossil fuel projects that will produce over one billion tonnes of carbon pollution. Using published production estimates for fossil fuel resources globally, the most recent [peer-reviewed assessment](#) identified 425 carbon bombs, with 256 of these already active projects, and 169 new projects or proposals.



Introduction

Woodside's proposed Burrup Hub fossil gas mega project in Western Australia's Pilbara region is a climate disaster in the making.

For the first time, this analysis places the lifetime carbon pollution that would result from these projects in an international context, identifying the Burrup Hub mega project as the largest new carbon bomb in the Southern Hemisphere and in the top ten most polluting new fossil fuel developments in the world.

The existing Burrup Hub gas export precinct operated by Woodside Energy is already Australia's largest carbon polluter. However, instead of phasing out fossil fuel production and transitioning to renewable energy, Woodside is planning to double-down by expanding production of the fossil fuels that are driving dangerous climate change and extreme weather events such as wildfires, floods, heatwaves, droughts and cyclones.

Proposed expansions and extensions at the Burrup Hub mega project, including two giant new offshore gas developments are set to dramatically extend and increase gas production, transforming Australia's largest and oldest fossil gas export precinct into one of the largest sources of carbon pollution on the planet.

Soon, the Australian Government will consider key approval decisions for the Burrup Hub mega project, including the Scarborough gas field operations, the North West Shelf 50-year extension, and the Browse Basin gas development. Despite the staggering amount of pollution that will result, to date there has been no comprehensive assessment of the impact of these developments on the climate, or on Australia's national emissions reduction goals.

This startling new analysis places the Burrup Hub mega project in a national and international context by comparing lifetime emissions from the Burrup Hub expansion with other new global carbon bombs, and with national emissions from some of the world's largest polluting countries.

At more than 6 billion tonnes of CO₂e- over its lifetime, greenhouse gas emissions from the Burrup Hub mega project would be greater than the annual emissions from

all sources in the United States, and 13 times greater than Australia's total annual emissions from all sources.

Pollution from the Burrup Hub mega project is also compared with emissions reductions expected to be achieved by the Australian Government's climate change policies, Woodside's own abatement efforts, and global carbon capture and storage capacity.

The analysis shows that lifetime pollution from the Burrup Hub mega project would be many times larger than the combined savings expected from all Australian climate policies and measures between now and 2030. For every tonne of carbon pollution that will be reduced in Australia before 2030, more than 6.3 tonnes of pollution would be released by the Burrup Hub mega project over its lifetime.

Abatement efforts by Woodside (including purchasing offsets, and the construction of a solar facility near Karratha), as well as combined global carbon capture and storage (CCS) efforts by all proponents are also dwarfed by lifetime pollution from the Burrup Hub mega project.

Woodside's current verifiable abatement efforts would equate to less than 1% of the total pollution from the expanded Burrup Hub mega project over its lifetime. Even if all currently operational and proposed CCS facilities globally proceed as planned and operate successfully at full capacity (a highly unlikely scenario given the current failures of CCS technology), these facilities would have a combined annual sequestration capacity of less than 4% of the lifetime emissions of the Burrup Hub mega expansion.

This analysis presents a clear and compelling case for the Australian Government to reject Woodside's planned Burrup Hub mega project. Allowing these developments to proceed with no assessment of their impacts on the climate and Australia's emissions reduction goals would amount to a broken promise by the Albanese Government. This would also be a reckless decision that would directly undermine international efforts on climate change and seriously damage Australia's credibility on these issues.

Summary of findings

If the extensions and new projects are approved, then over its lifetime the combined Burrup Hub mega project would release 6.1 billion tonnes of carbon pollution, through direct and indirect emissions including combustion of the gas that is produced and exported from the facilities.

How the Burrup Hub compares with other global 'carbon bombs'

- **The Burrup Hub would be the largest carbon bomb in the Southern Hemisphere and would be placed in the top 10 most polluting new fossil fuel projects globally.** This includes new coal, gas and oil projects that have been identified as global carbon bombs.
- **The Burrup Hub would be the fifth most polluting new gas development in the world.** The Burrup Hub ranks fifth largest in the list of new gas projects identified as global carbon bombs.
- **The Burrup Hub would place Australia in the company of countries that are undermining global action on climate change.** The only countries hosting more polluting oil and gas facilities than the Burrup Hub are Russia, Qatar and Saudi Arabia.

How the Burrup Hub compares with total emissions from countries

- **Lifetime emissions from the Burrup Hub would be greater than the combined total annual pollution from all sources in the United States, the world's second largest polluter.** The only country with annual pollution greater than the lifetime emissions from the Burrup Hub is China.
- **The Burrup Hub would produce 14 times the annual emissions of the United Kingdom, and over 73 times the annual emissions of New Zealand.**

How the Burrup Hub compares with other pollution sources in Australia

- **Total lifetime emissions from the Burrup Hub would be more than 13 times greater than Australia's total annual emissions from all sources.**
- **The Burrup Hub would produce as much carbon pollution as driving every car, truck, bus and boat in Australia for over 65 years or Australia's total combined agriculture sector, including every farm in Australia operating at current levels for nearly 76 years.**

How the Burrup Hub compares with Australia's climate policies and abatement efforts

For every tonne of carbon pollution that will be reduced by the Australian Government's climate policies between now and 2030, more than six tonnes of carbon pollution would be released by the Burrup Hub projects over their lifetime.

Lifetime pollution from the Burrup Hub would be:

- **Nearly 6.5 times more than the total combined CO₂ savings expected in Australia from now until 2030.** This is the total cumulative CO₂ reduction required to achieve Australia's 2030 emissions reduction target.
- **More than 30 times the total savings that will be achieved by the Australian Government's Safeguard Mechanism, from all major industrial facilities in Australia from now until 2030.**
- **Lifetime pollution from the Burrup Hub would cancel out the entire cumulative savings from all household solar systems currently installed in Australia for over 344 years.**



Burrup Hub compared with Woodside's known offsetting and abatement efforts

- Woodside's known and quantifiable abatement efforts (including offsetting) would result in savings of less than 1% of the total pollution from the Burrup Hub over its lifetime.
- Woodside's proposed solar facility near Karratha in Western Australia would abate less than 0.2% of the emissions from the Burrup Hub projects over its lifetime. Lifetime pollution from the Burrup Hub would be more than 500 times greater than the total CO₂ savings that would be delivered by this solar facility.
- If Woodside continued to retire carbon offsets at the current rate for the life of the Burrup Hub, it would account for less than 0.6% of its total greenhouse gas emissions.

Burrup Hub emissions compared with carbon capture and storage (CCS) capacity

- The combined annual capacity of all currently operational CCS facilities globally is equal to less than 1% of the total lifetime emissions that would result from the Burrup Hub. Burrup Hub lifetime emissions would be 143 times greater than the combined annual sequestration capacity of all operating CCS facilities globally.
- The combined annual capacity of all currently operational and proposed CCS facilities globally (if they all proceed and are 100% successful) would be less than 4% of the lifetime emissions of the Burrup Hub. Burrup Hub lifetime emissions would be 25 times greater than the combined annual sequestration capacity of all operating and proposed CCS facilities globally.
- If operated at current capacity for the life of the Burrup Hub, Australia's largest CCS facility attached to the Gorgon LNG project will inject carbon dioxide equivalent to just 1.2% of the pollution from the Burrup Hub. At this rate it would take the Gorgon CCS facility nearly 3700 years to sequester the equivalent amount of pollution that would result from the Burrup Hub.

Woodside's new Burrup Hub projects

Burrup Hub current production

Woodside's Burrup Hub is already one of the largest liquefied natural gas (LNG) processing precincts in the world, comprising LNG and domestic gas processing infrastructure fed by offshore conventional gas fields. With a total capacity of 23.4 million tonnes per annum (Mtpa) of LNG, the Burrup Hub currently accounts for more than a quarter of Australia's total combined LNG production capacity.

The Burrup Hub gas precinct includes Australia's largest and most polluting LNG processing and export facility on the Australian mainland, the Karratha Gas Plant (KGP). With a current annual capacity of up to 18.5 million tonnes of LNG per year (Mtpa),¹ this facility has historically been supplied by the North West Shelf offshore gas fields. After decades of extraction, these fields are now in decline. Linked to the KGP is the Pluto LNG facility with a current capacity of 5 Mtpa² fed by the Pluto offshore gas field.

New Burrup Hub projects

Woodside is aiming to significantly increase the processing and export capacity of the Burrup Hub and extend the operating life of the LNG production facilities for nearly 50 years, well beyond 2050. This is proposed to include the exploitation of very large new offshore gas fields, a doubling in size of the Pluto LNG facility and an extension of the KGP operations to 2070.

The expanded Burrup Hub would have a total LNG processing capacity of up to 28.3 million tonnes per year, plus a much smaller amount of domestic pipe gas provided to the Western Australian market.

New gas fields are proposed to support this production, including the Scarborough project, which would feed an expanded Pluto facility, and the Browse Basin project, which would provide feed gas to the KGP facility. Even with the production from these very large new fields accounted for, there would be a significant shortfall of feed gas over the extended life of the LNG production facilities at the expanded Burrup Hub. This means that additional very large gas fields such as the onshore unconventional Canning Basin in the Kimberley would be required in the future to maintain production at the Burrup Hub.

Table 1: Summary of new Burrup Hub projects

Development	Description	Current status
Pluto Train 2 LNG expansion	Doubling production capacity from Pluto LNG facility	Under construction
Scarborough offshore gas field	New gas to feed the expanded Pluto LNG production facility	Preliminary works underway, final investment decision (FID) taken, final approvals pending
North West Shelf (Karratha Gas Plant) Extension	Extension of the operation of the Karratha Gas Plant to 2070	Currently under assessment, approvals pending
Browse Basin offshore gas field	New gas to feed the Karratha Gas Plant	No approvals yet given and no investment decision taken
Other gas fields to feed the Burrup Hub	Additional gas to fill LNG production capacity over the life of the proposed extension	Additional feed gas yet to be confirmed

Lifetime emissions from new Burrup Hub projects

This analysis considers lifetime emissions from the new Burrup Hub projects from all sources consistent with the assessment of other global carbon bombs. This is estimated using Woodside sources and other independent estimates at 6.1 billion tonnes of CO₂ equivalent over the life of the projects.³

This includes direct emissions from LNG processing, fugitive emissions of methane and other greenhouse gasses, routine venting and flaring, venting of reservoir CO₂. It also includes 'scope 3' emissions including combustion emissions from the burning of the produced gas, transport emissions, downstream fugitive emissions from regassification and distribution, and some upstream emissions from the gas fields required to provide supply gas for conversion to LNG.

Woodside has not produced an overall estimate of carbon pollution from the combined Burrup Hub expansions, however data contained in environmental assessment documents for each component of the Burrup Hub enables an assessment of total lifetime emissions to be made.

The largest source of climate pollution associated with the Burrup Hub would be the KGP extension, including the Browse Basin gas field which is proposed to provide feed gas to the facility. According to Woodside, the combined direct and indirect carbon pollution from the KGP extension would be greater than 4.3 billion tonnes over its 47-year lifetime, with around 489 million tonnes of CO₂e- released in Australia.^{4,5}

This includes greenhouse gas emissions from the Browse Basin gas field but excludes upstream emissions from other gas fields that would be required to provide feed gas for the facility. If feed gas is sourced from unconventional gas in the Canning Basin, or from other offshore gas fields, these additional greenhouse gas emissions could be significant.



Burrup Hub compared with global carbon bombs

Carbon bombs are defined as fossil fuel projects that will produce over one billion tonnes of carbon pollution.

Using published production estimates for fossil fuel resources globally, the most recent peer-reviewed assessment identified 425 carbon bombs, with 256 of these already active projects, and 169 new projects or proposals.⁶ The authors of this study estimate the combined greenhouse gas emissions from these projects would exceed the global emissions budget required to limit global temperature rise to 1.5 degrees above pre-industrial levels by a factor of two. Burrup Hub projects were not identified in the study because the database used by the authors treats the individual gas resources that will be exploited as part of the Burrup Hub separately and does not include production estimates for all resources to be exploited as part of the expanded Burrup Hub.

In this analysis, estimates of total Burrup Hub emissions from Woodside and other sources are used to compare the Burrup Hub projects with new carbon bombs identified in the global study. Carbon bombs from sources already in production are excluded from this analysis.

New global carbon bombs

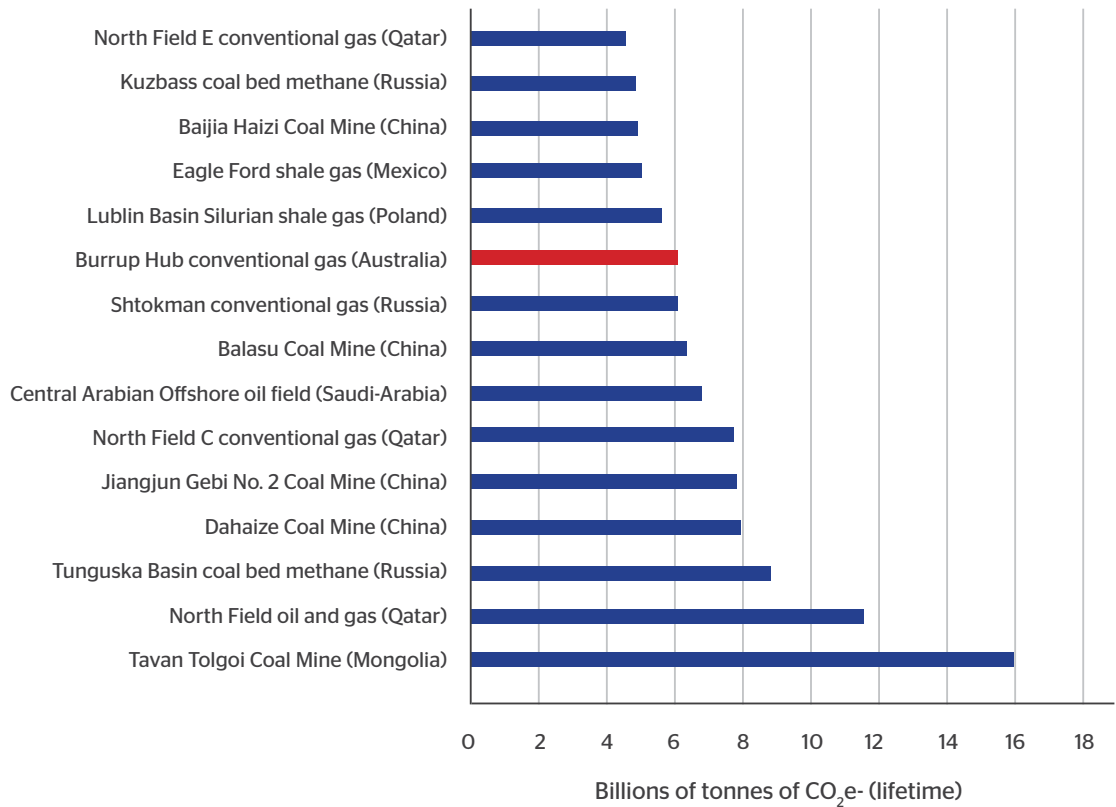
A total of 76 new oil and gas projects and 93 new coal projects were identified in the global carbon bombs report, each producing more than 1 billion tonnes of CO₂ emissions. Emissions for these projects were up to 16 billion tonnes for coal projects (with an average of 2.4 billion tonnes) and 11.6 billion tonnes for oil and gas projects (with an average of 2.5 billion tonnes).

How Burrup Hub compares with new global carbon bombs

- At 6.1 billion tonnes of carbon pollution, the Burrup Hub project as a whole ranks 10th largest globally when compared with other identified new carbon bombs (Figure 2).
- This places the Burrup Hub mega expansion in the top 6% of new global carbon bombs.



Figure 1: Top 15 new global fossil fuel developments identified as carbon bombs (coal, oil and gas)



- In comparison to other oil and gas projects identified as global carbon bombs, the Burrup Hub ranks sixth largest (Figure 3) and it ranks fifth largest when compared with new gas projects only (Figure 4).
- Greenhouse gas emissions from the Burrup Hub are nearly 2.5 times larger than the average of new carbon bombs identified in the oil and gas category.



Figure 3: Top 10 new oil and gas projects identified as global carbon bombs, with average emissions for all 75 new carbon bombs in the oil and gas category

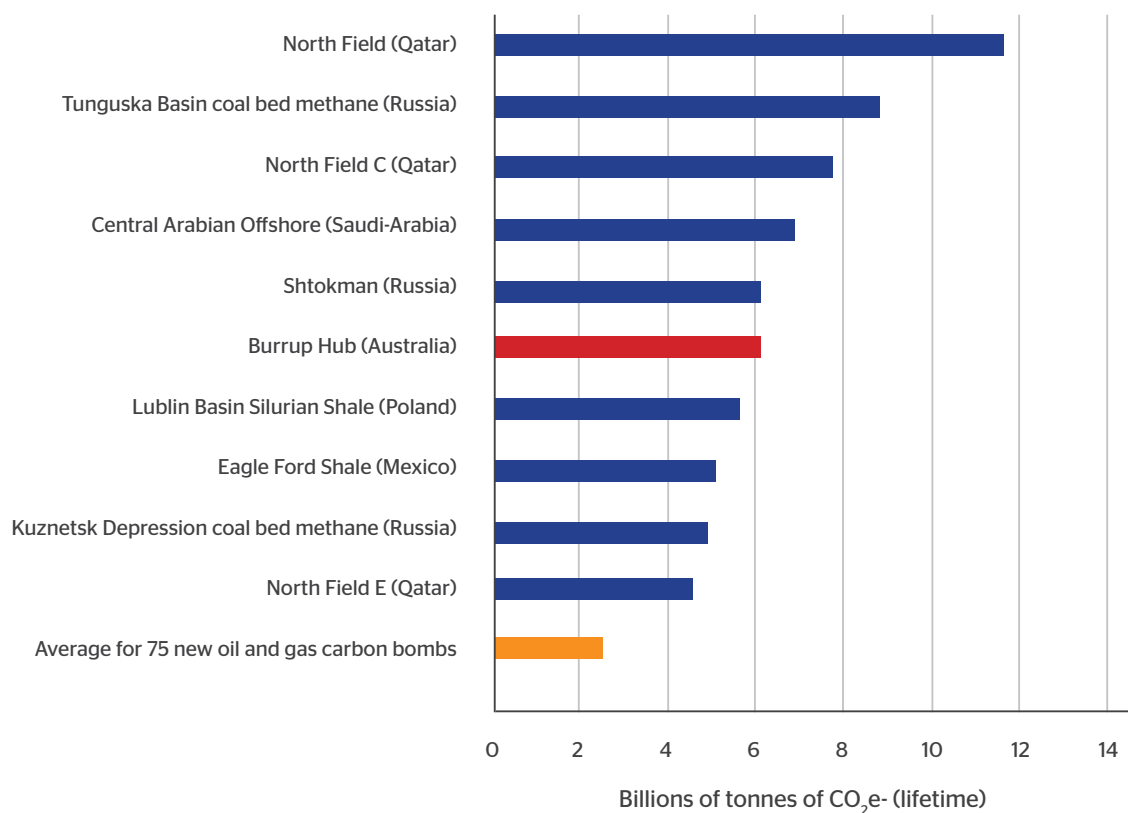
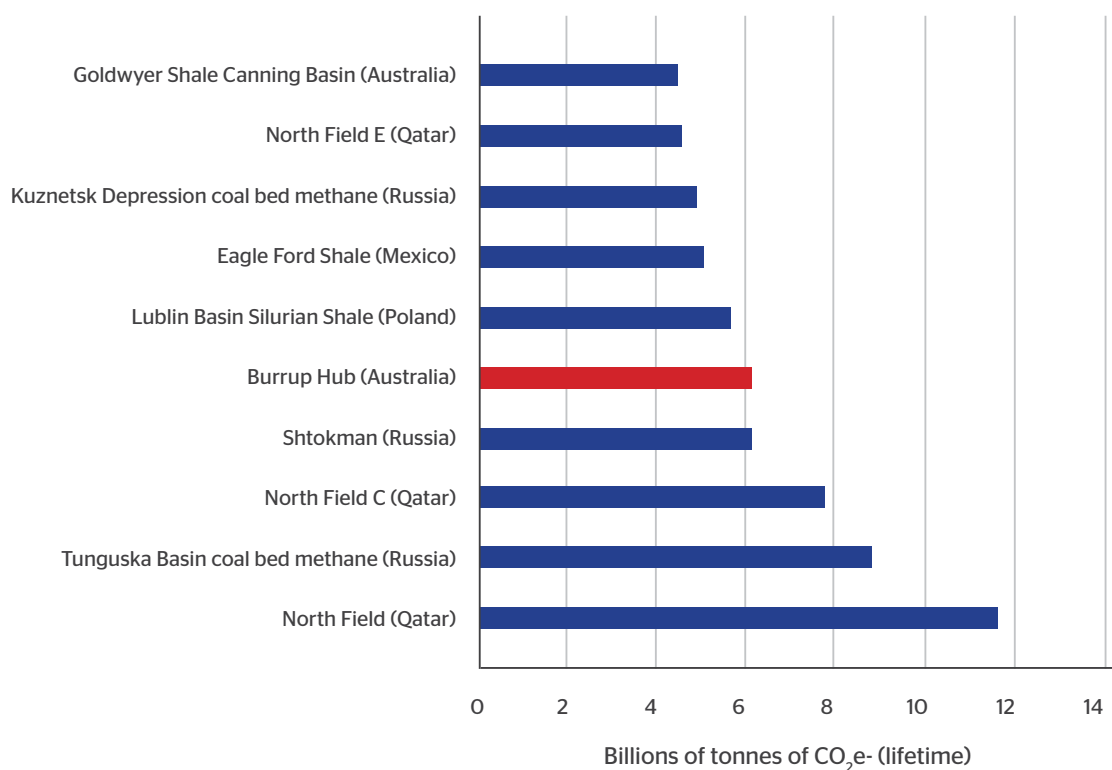


Figure 4: Top 10 new gas projects identified as global carbon bombs



The scale of carbon pollution that would result from the Burrup Hub places Australia among a small number of countries hosting very large carbon bombs in the oil and gas category. The only countries hosting more polluting oil and gas projects than Australia's Burrup Hub are Russia, Qatar and Saudi Arabia. This places Australia in the company of countries that have a track record of undermining international ambition on climate change and supporting an ongoing role for fossil fuel production in the global energy mix that is not consistent with globally agreed temperature goals.

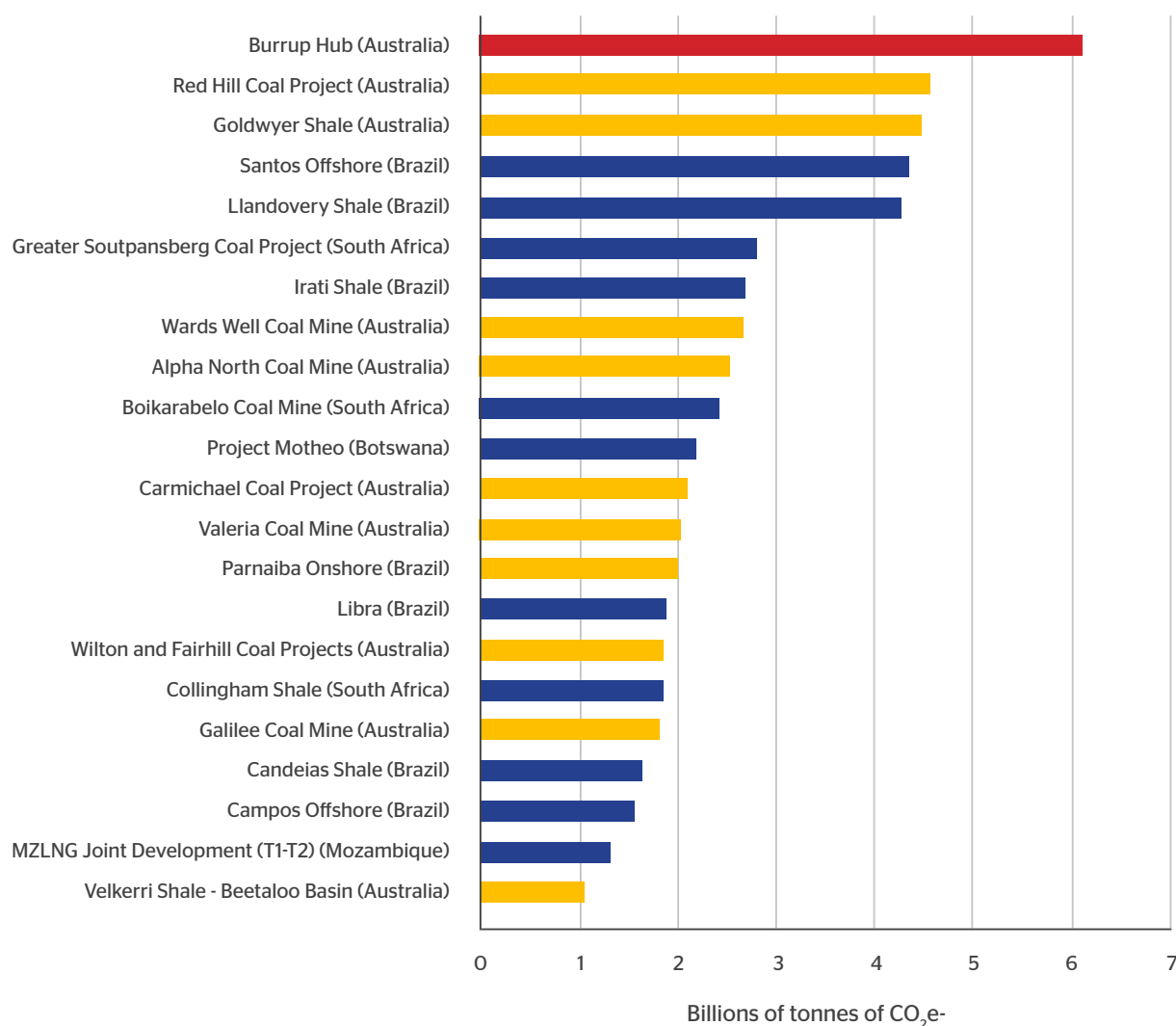
Burrup Hub compared with new carbon bombs in the Southern Hemisphere

Of the new carbon bombs identified globally, 22 are located south of the equator. Australian coal and gas projects identified in the analysis account for 36% of all pollution from new carbon bombs in the Southern Hemisphere (70% of emissions from coal projects and 20% of emissions from oil and gas projects) excluding emissions from the Burrup Hub.⁷

How the Burrup Hub compares

- The Burrup Hub mega expansion is by far the largest new carbon bomb in the Southern Hemisphere, across all categories.

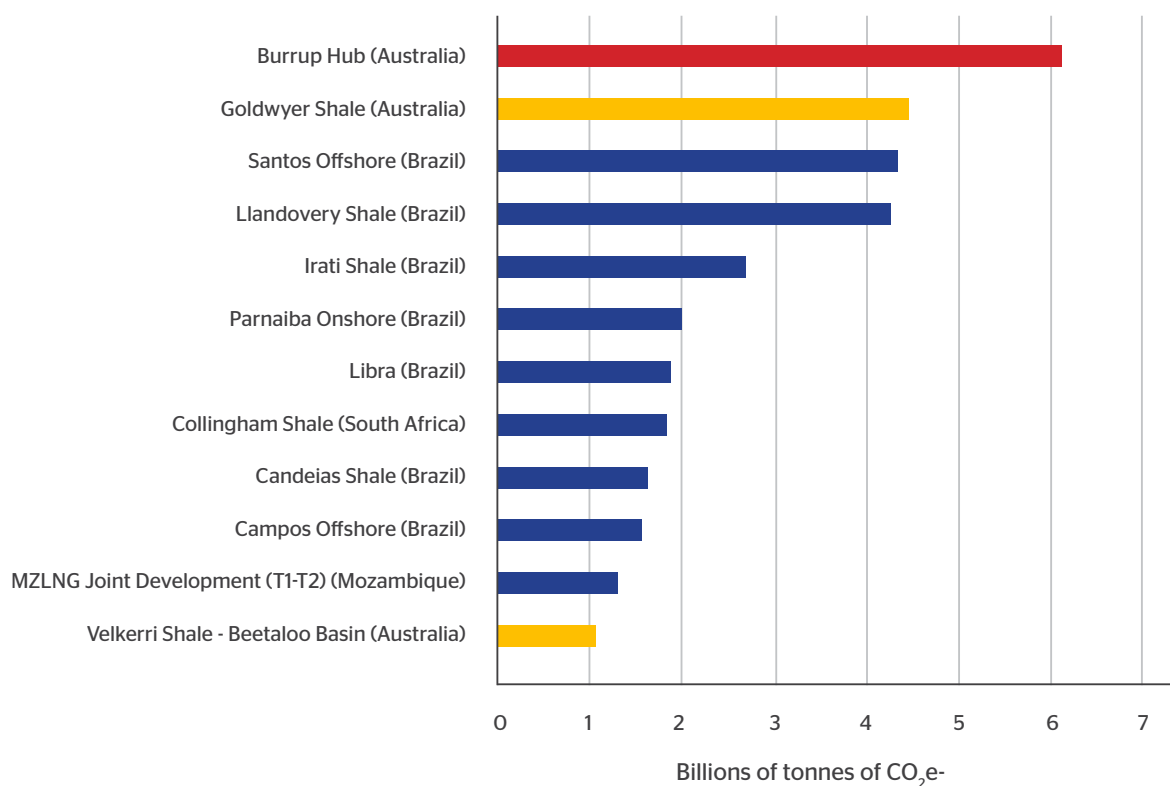
Figure 5: New carbon bombs in the Southern Hemisphere (other Australian projects marked yellow)



The two largest oil and gas carbon bombs in the Southern Hemisphere are the Burrup Hub and the onshore Goldwyer Shale in the Canning Basin, located in the Kimberley region of Western Australia.

While the most likely development scenario for the Goldwyer Shale is processing for export as LNG at the Burrup Hub, it is treated as a separate project in this analysis.

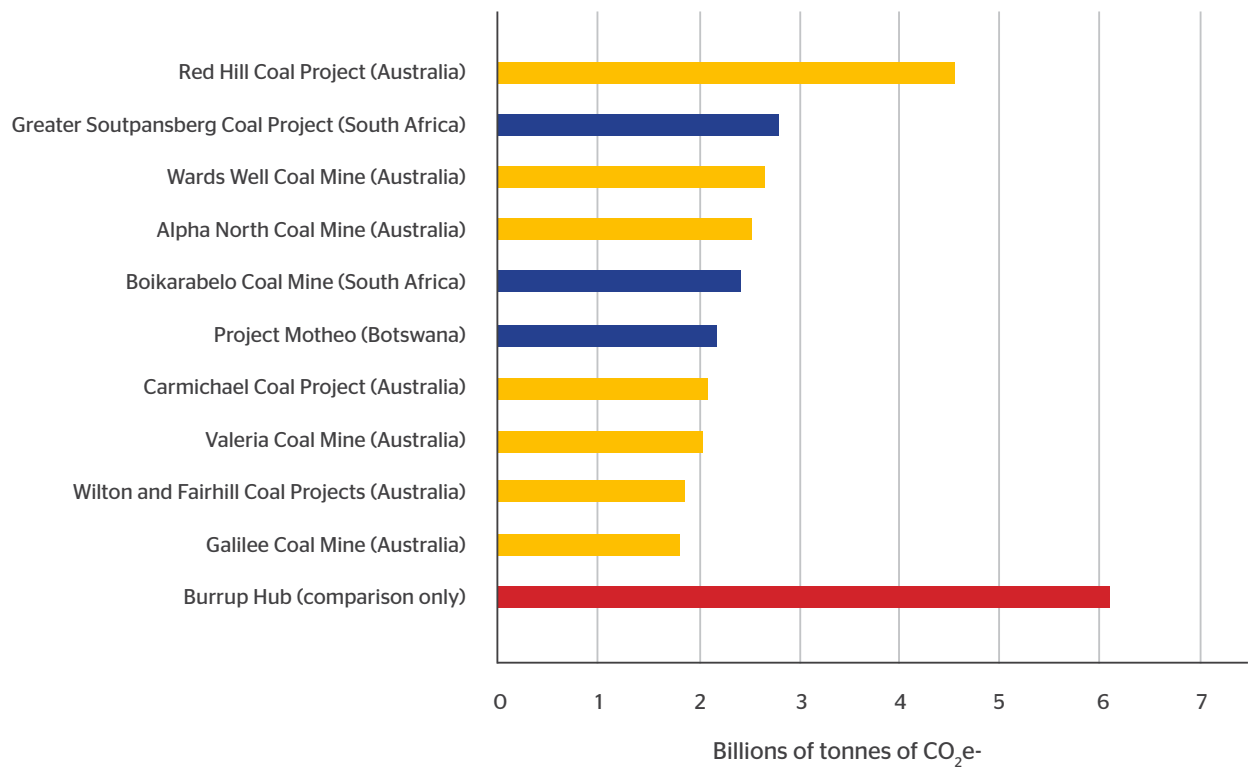
Figure 6: New oil and gas carbon bombs in the Southern Hemisphere



When compared with emissions from new carbon bombs in the coal category, the lifetime emissions from the Burrup Hub dwarfs all other projects in the Southern Hemisphere.

- Emissions from the Burrup Hub would be larger than any new coal carbon bombs identified in the Southern Hemisphere. Lifetime pollution from the Burrup Hub would be equivalent to 23% of total emissions from all Southern Hemisphere coal carbon bombs and would be 34% larger than the largest coal project on the list.

Figure 7: Burrup Hub compared with new coal carbon bombs in the Southern Hemisphere
(other Australian projects which together account for 70% of emissions are marked in yellow)



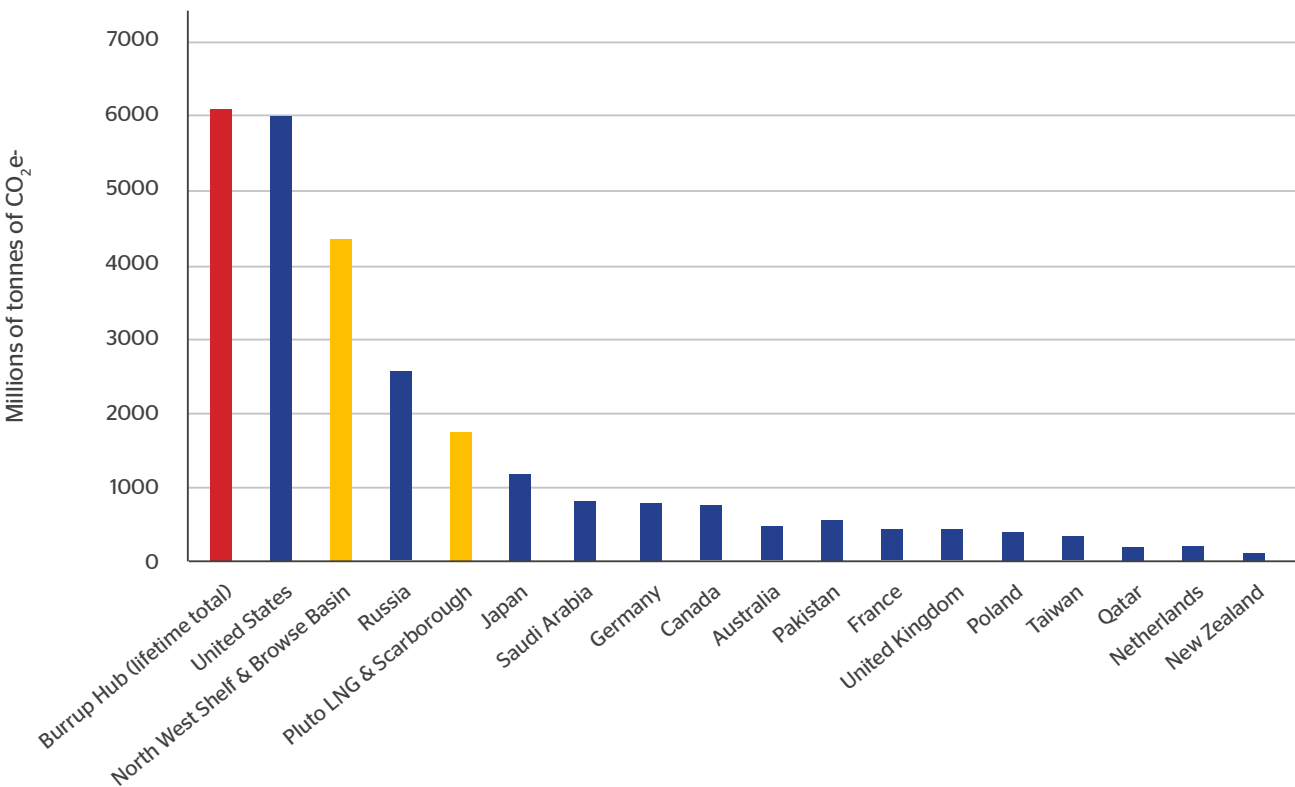
Burrup Hub compared with international greenhouse gas emissions

To better understand the scale of carbon pollution that would result from the Burrup Hub, lifetime pollution from the projects is compared below with annual greenhouse gas emissions from different countries.

How Burrup Hub compares with annual country emissions

- Total lifetime emissions from the Burrup Hub would be slightly greater than the combined annual greenhouse gas emissions from all sources in the United States in 2023.
- Over its lifetime, the Burrup Hub would produce more than 13 times the annual greenhouse gas emissions from all sources in Australia, 14 times the annual greenhouse gas emissions of the United Kingdom and more than 73 times the annual greenhouse gas emissions of New Zealand.
- The world’s largest polluter, China, is the only country with annual emissions greater than the lifetime pollution that would result from the Burrup Hub projects.

Figure 8: Lifetime CO₂ emissions from Woodside Burrup Hub compared with annual emissions from selected countries⁸



Burrup Hub compared with Australia's greenhouse gas emissions

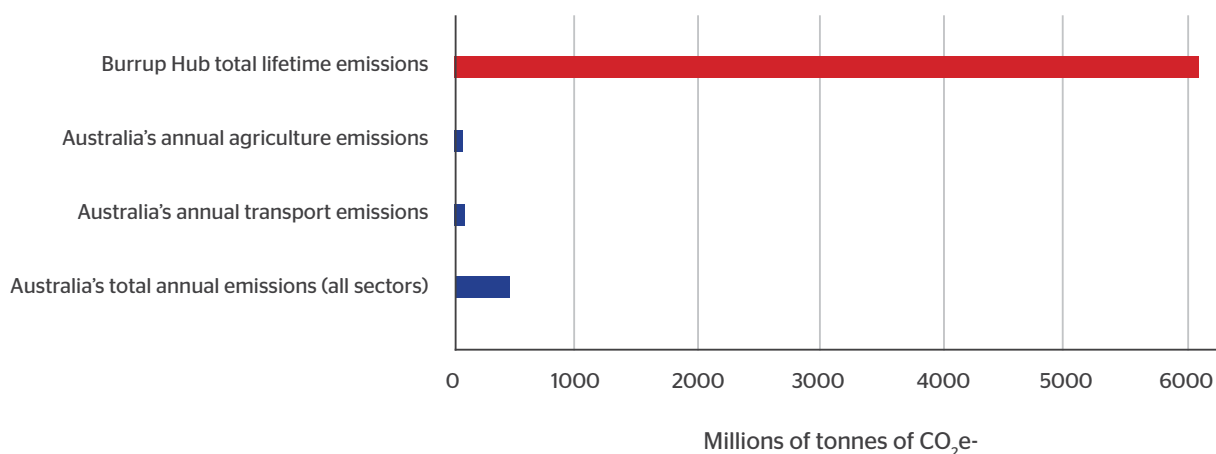
According to Australia's National Greenhouse Gas Inventory, Australia's total carbon pollution from all sources was 464.8 million tonnes CO₂e- in 2020-21.⁹

For comparison purposes (see Figure 9), total emissions from Australia's agriculture sector were 80.7 million tonnes CO₂e- and transport emissions were 93 million tonnes CO₂e-.¹⁰

How the Burrup Hub compares with Australian greenhouse gas emissions

- Total lifetime emissions from the Burrup Hub would be more than 13 times greater than Australia's total annual greenhouse gas emissions from all sources.
- The Burrup Hub would produce as much carbon pollution as every car, truck, bus, plane and boat in Australia for nearly 66 years.
- The Burrup Hub would produce as much pollution as Australia's total combined agriculture sector, including every farm in Australia operating at current levels, for over 75 years.

Figure 9: Burrup Hub total lifetime emissions compared with Australia's total annual emissions, and emissions from the agriculture and transport sectors.



Burrup Hub compared with Australia's climate policies and targets

As demonstrated above, pollution from the proposed Burrup Hub rivals the largest economies and fossil fuel projects in the world, but it is also important to consider the scale of pollution when compared with Australia's efforts on climate change.

The analysis below considers the impact of the Burrup Hub projects on Australia's climate action plan, by comparing pollution from the Burrup Hub with reductions in emissions that are expected to be achieved by the Albanese Government's climate policies and targets.

Abatement from Australian climate policies and other mitigation efforts

- All climate policies aim to reduce Australia's emissions by 960 million tonnes in total by 2030.

The Albanese Government legislated a national carbon pollution reduction target of 43% below 2005 levels by 2030, and net zero emissions by 2050.¹¹ Modelling by Energetics found the 2030 target would be achieved through the implementation of over 70 emissions reduction measures that would deliver approximately 960 million tonnes of abatement by 2030.¹²

- The Safeguard Mechanism is expected to contribute 200 million tonnes reduction by 2030.

The Albanese Government's signature climate policy to address emissions from industry is the Safeguard Mechanism. The Safeguard Mechanism legislation requires Australia's largest emitting facilities to reduce total aggregate emissions by an estimated total of more than 200 million tonnes of carbon dioxide equivalents (CO₂-e) by 2030.¹³

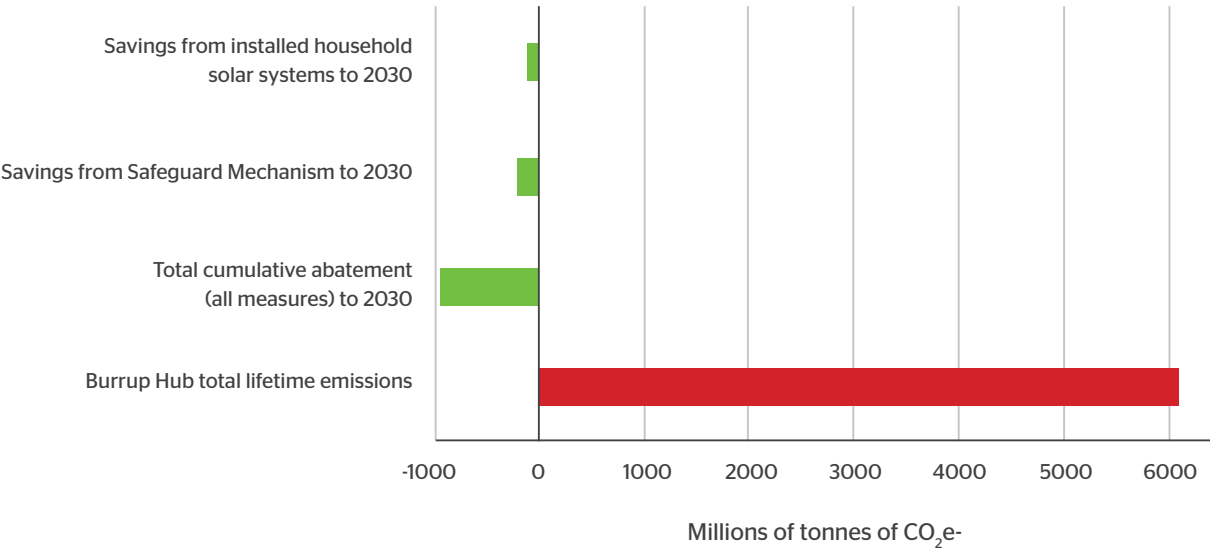
- Household solar is saving 17.7 million tonnes of carbon pollution per year.

With more than one in four houses in Australia having already installed solar panels, the voluntary adoption of household solar systems in Australia has been heralded as a major achievement in reducing greenhouse gas emissions. In 2021, the Australian Government estimated Australia's 3 million rooftop solar installations were reducing Australia's emissions by over 17.7 million tonnes per year.¹⁴

How The Burrup Hub compares with Australia's national abatement efforts

- Total greenhouse gas emissions from the Burrup Hub would dwarf the savings that are promised by Australia's emissions reduction targets and domestic policies and measures.
- For every tonne of carbon pollution that will be reduced by the Australian Government's climate policies between now and 2030, over 6.3 tonnes of carbon pollution would be released by the Burrup Hub over its lifetime.
- Lifetime pollution from the Burrup Hub would be more than six times greater than the total combined CO₂ savings expected in Australia from all sources from now until 2030.
- Lifetime pollution from the Burrup Hub would be more than 30 times greater than the total cumulative savings that will be achieved by the Australian Government's Safeguard Mechanism from all industrial facilities in Australia from now until 2030.
- Lifetime pollution from the Burrup Hub would be equivalent to the entire cumulative savings from all household solar systems currently installed in Australia for nearly 350 years.

Figure 10: Burrup Hub total lifetime emissions compared with savings expected from Australia’s climate policies and measures to 2030



Burrup Hub compared with Woodside's abatement and offsetting

Under pressure over its increasing greenhouse gas emissions and projected carbon pollution from its Burrup Hub projects, Woodside is active in making claims about its carbon abatement efforts.

As the analysis below demonstrates, the annual abatement achieved by Woodside's verifiable abatement activities would be a tiny fraction (much less than 1%) of the total lifetime emissions from the Burrup Hub.

Woodside's abatement efforts

Woodside has identified several initiatives that the company claims will abate (reduce or offset) carbon pollution in its Climate Report, including purchasing and retiring carbon offsets, several hydrogen projects, and a solar project in Karratha, Western Australia. However, despite actively promoting the green credentials of these projects, the company is not transparent about the amount of abatement it expects will be delivered by each of these measures.¹⁵ Independent assessment suggests the H2Perth gas-powered hydrogen facility will be a significant pollution source in its own right.¹⁶ The savings attributable to Woodside's other proposed hydrogen facilities are difficult to determine based on the available information, and these facilities may also be a net source of emissions.

For this analysis, two of Woodside's known abatement methods are considered where data is available:

- a) the current rate of offsets being retired by Woodside, and
- b) the construction of a solar facility at the Maitland Industrial Estate near the Burrup Hub which has been assessed by the WA Environmental Protection Authority.

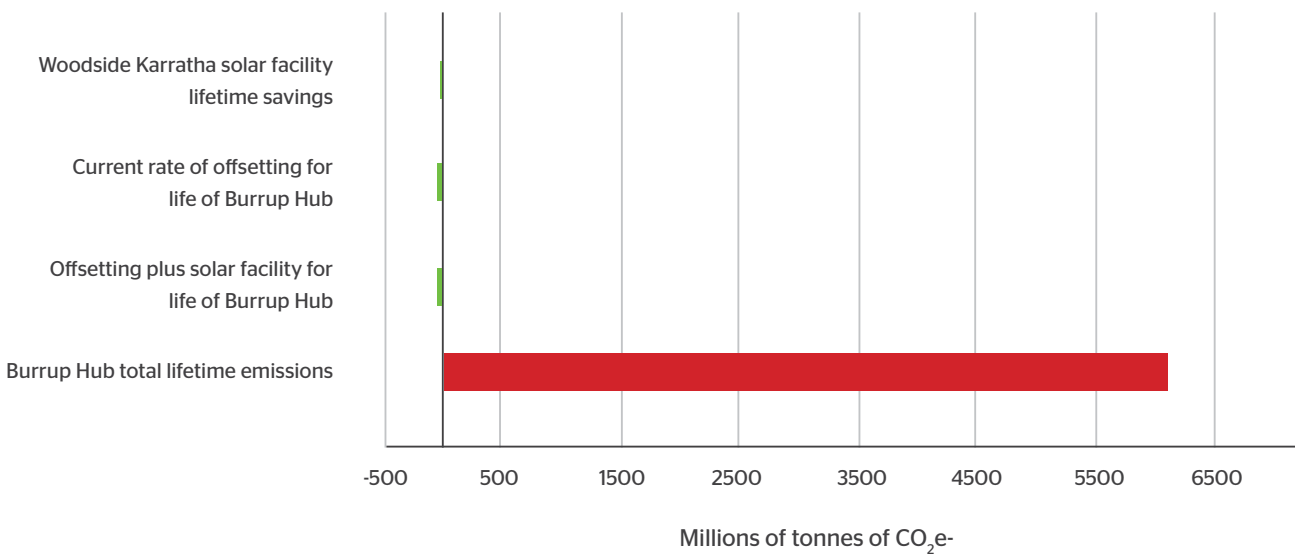
According to Woodside's 2022 Climate Report, Woodside retired carbon credits equivalent to 0.754 million tonnes of carbon pollution in 2022.¹⁷ It is noted however, that the use of offsets to facilitate expanded fossil fuel production is considered a form of greenwashing by the UN High Level Expert Group on Net Zero Emissions¹⁸ and the ISO Net Zero Guidelines.¹⁹

Assessment by the Western Australia Environmental Protection Authority reveals that the most optimistic carbon abatement that would be achieved by Woodside's solar project is 0.4 million tonnes CO₂e-per year, and up to 12 million tonnes in total over the life of the project, assuming all components go ahead immediately.²⁰

Burrup Hub compared with Woodside’s known abatement efforts

- The combined total abatement from Woodside’s proposed solar facility over its lifetime, and Woodside’s current rate of offsetting for the life of the Burrup Hub would be less than 1% (0.8%) of the total carbon pollution that will result from the Burrup Hub projects.
 - Lifetime pollution from the Burrup Hub would be over 500 times greater than the total cumulative CO₂ savings that would be delivered by Woodside’s proposed solar facility near Karratha over its lifetime, in the most optimistic assessment. This facility would result in savings equivalent to less than 0.2% of the emissions from the Burrup Hub projects over its lifetime.
 - Woodside retired offset certificates in 2022 equal to approximately 0.01% of the total pollution that would result from the Burrup Hub. Total lifetime pollution from the Burrup Hub would be over 8,000 times higher than the company’s annual level of offsetting at current rates.
- If Woodside continued to retire offsets at the current rate for the life of the Burrup Hub, it would result in around 34 million tonnes of abatement, or around 0.6% of the total emissions from the Burrup Hub over the same period.

Figure 11: Burrup Hub total lifetime emissions compared with Woodside offsetting and abatement efforts



Burrup Hub compared with global carbon capture and storage

The oil and gas industry, including Woodside, often claims that carbon capture and storage (CCS) will provide a solution to emissions from fossil fuels. To date CCS technology has not been proven at scale and is extremely expensive. Billions of dollars of public and private money have been spent on failed fossil fuel CCS projects around the world. Aside from the numerous technical, environmental and other reasons why CCS should not be relied upon, global current and planned CCS capacity is a fraction of that which would be required to abate global fossil fuel emissions.

Total emissions from the Burrup Hub alone are hundreds of times larger than the annual capacity of all currently operating CCS facilities globally, and many times larger than the total capacity of all current and proposed CCS facilities.

Current and planned global CCS capacity

The Global CCS Institute's most recent global status report identified the capacity of all installed CCS facilities globally at 42.5 million tonnes per year (assuming a highly unlikely scenario in which all projects are successfully operating at 100% capacity).²¹ When all existing and proposed CCS facilities are considered, they would have a combined capacity of 241.6 million tonnes per year (assuming all proceed and are 100% successful).

The largest CCS facility operating in Australia is connected with the Gorgon LNG plant on Barrow Island. This facility received a \$60 million Australian Government subsidy but has been plagued with technical issues, and after many years is not running at full capacity. Even though the design capacity of this facility is up to 4 million tonnes CO₂e- per year, Chevron's 2022 Environmental Performance report shows the Gorgon CCS facility managed to inject just 1.65 million tonnes CO₂e- in the 2021-22 financial year.²²

How Woodside's Burrup Hub compares with global and Australian CCS capacity

Current installed CCS capacity globally

- Burrup Hub lifetime emissions would be 143 times greater than the combined annual sequestration capacity of all operating CCS facilities globally.
- The combined annual capacity of all currently operational CCS facilities globally is equal to less than 1% of the total lifetime emissions that would result from the Burrup Hub.

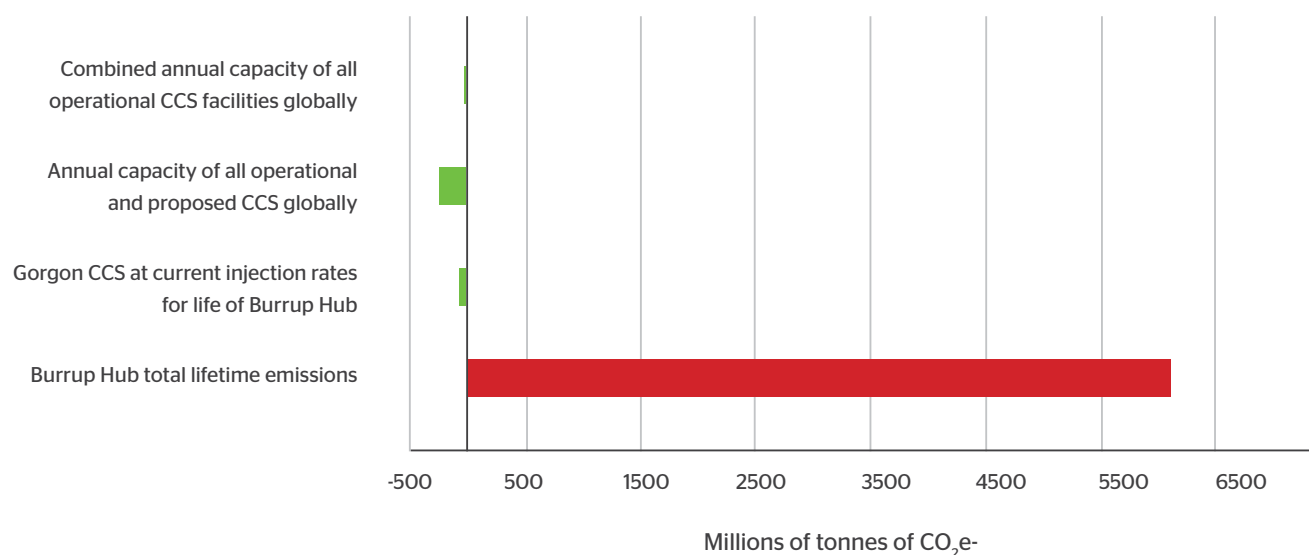
Current installed and planned CCS capacity globally

- The combined annual capacity of all currently operational and proposed CCS facilities globally (if they all proceed and are 100% successful) would be less than 4% of the lifetime emissions of the Burrup Hub mega expansion.
- Burrup Hub lifetime emissions would be 25 times greater than the combined annual sequestration capacity of all operating and proposed CCS facilities globally.

Australia's CCS capacity

- If operated at current capacity for the life of the Burrup Hub, Australia's largest CCS facility attached to the Gorgon LNG project would inject carbon dioxide equivalent to just 1.2% of the pollution from the Burrup Hub.
- At this rate it would take the Gorgon CCS facility nearly 3700 years to sequester the equivalent amount of pollution that would result from the Burrup Hub.

Figure 12: Burrup Hub total lifetime emissions compared with global and Australian CCS capacity



Assessment of climate impacts and carbon pollution from the Burrup Hub by the Albanese Government

Given the staggering amount of carbon pollution that will result from the proposed Burrup Hub, it is reasonable to assume that the impacts of these projects on the climate itself, and on global and national emissions reduction goals will be thoroughly assessed by the Australian Government.

Currently, there is no indication that such an assessment will take place. This places the Albanese Government in the indefensible position of facilitating and approving the largest new carbon bomb in the southern hemisphere with no comprehensive assessment of its impacts on the climate or Australia's emissions reduction targets and policies.

Environmental impact assessment for each element of the Burrup Hub has been undertaken separately, by different regulatory authorities across both state and commonwealth jurisdictions. In this way, Woodside has avoided assessment of the overall cumulative impacts of the Burrup Hub on the climate, environment, and

communities. As explained briefly below, Woodside has also been able to exploit loopholes in the assessment system to avoid examination of the carbon pollution and climate impacts for each component of the Burrup Hub.

The North West Shelf mega-project is the largest and oldest LNG production facility in Australia. Woodside proposes to extend the operation of this facility to 2070, fed by gas extracted from the Browse Basin - one of the largest undeveloped gas fields in the world. Together these developments would release a staggering 4.3 billion tonnes of carbon pollution. Despite this, Woodside has so far avoided commonwealth assessment of the climate impacts of these developments, due to the lack of specific provisions in the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) requiring that such impacts are examined. While the Minister for the Environment has statutory powers under the EPBC Act to expand the assessment to include climate impacts on 'Matters of National Environmental Significance' (such as the Great Barrier Reef), the Minister has not responded to formal requests to exercise those powers.²³



Another major component of the Burrup Hub, the Scarborough gas field is currently under assessment by the Commonwealth offshore oil and gas regulator National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), however it is not clear if, or how NOPSEMA will assess climate change impacts of the Scarborough development. NOPSEMA was established in 2014 by the former coalition government to provide ‘streamlined environmental approvals’ for offshore oil and gas projects²⁴ and in 2022, then Resources Minister Keith Pitt attempted to direct the agency not to assess scope 3 carbon pollution from the projects it approves.²⁵ Consultation documents released by Woodside as part of the Scarborough assessment ignore scope 3 pollution - by far the largest source of carbon emissions from the project.²⁶ A legal challenge brought by the Australian Conservation Foundation seeks to have the Scarborough project assessed under the EPBC Act due to climate change impacts on the Great Barrier Reef, however Woodside are fighting this case in the Federal Court.²⁷

In March 2023, the Albanese Government made commitments to strengthen the Safeguard Mechanism (SGM) in order to secure passage of the legislation through Parliament.²⁸ This included a commitment that large new industrial projects covered under the policy would be subject to assessment to consider their impact on the emissions reduction goals for the Safeguard Mechanism and for Australia as a whole. At the time of writing, no such assessment has been triggered for Woodside’s Burrup Hub projects and there is no indication this will occur. Proceeding to give final commonwealth approvals for Woodside’s Burrup Hub projects without triggering such assessment would constitute a broken promise by the Albanese Government.

*Left. Gas on offshore platform
Photo. sarawutk / iStock*

Conclusion and recommendations

This analysis shows that if approvals are granted by the Albanese Government, Woodside's Burrup Hub gas expansion will be one of the world's 10 largest carbon bombs, and the most polluting new fossil fuel project in the southern hemisphere.

The globally significant scale of pollution from these projects would directly undermine the internationally agreed carbon pollution and temperature goals that the Australian Government claims to support. Proceeding with the Burrup Hub projects also directly contradicts calls from the International Panel on Climate Change (IPCC), International Energy Agency (IEA) and many other scientific institutions which make it clear that no new fossil fuel projects can proceed if the world is to maintain a safe and habitable climate.

The Burrup Hub developments are even more alarming when considered in the Australian context. At over 6 billion tonnes, lifetime pollution from the Burrup Hub will be over 6 times larger than the cumulative savings expected from Australia's climate action plan until 2030, including all policies introduced under the Albanese Government.

Woodside's verifiable abatement efforts are equal to a tiny fraction (less than 1%) of total emissions that would be generated by the Burrup Hub, while relying heavily on offsets - a practice which is considered greenwash according to international standards for Net Zero.

On this basis, Woodside's proposed Burrup Hub projects should be rejected by the Albanese Government. Granting further approvals for the projects without comprehensive assessment of their impact on the climate, and on Australia's legislated emissions reduction goals would amount to a broken promise by the Albanese Government, and clearly show that Australia's climate and environmental laws remain fundamentally ineffective.

Recommendations

- 1) Woodside's Burrup Hub developments should be rejected by the Albanese Government as they are fundamentally inconsistent with global temperature goals and Australia's emissions reduction targets. These projects will drive more extreme weather events and will cause serious and irreversible harm to Australians and our natural environment.
- 2) Assessment of Burrup Hub developments by the Australian Government must consider the impact of these projects on the climate. At a minimum, climate-related impacts on environments and communities here in Australia, including sensitive environments such as the Great Barrier Reef must be thoroughly assessed.
- 3) The Albanese Government must also assess the impact of the Burrup Hub projects on Australia's emissions reduction goals, including the legislated carbon budgets for Australia as a whole, and for large industry covered by the Safeguard Mechanism. This would be consistent with the commitment made by the Albanese Government to secure passage of the Safeguard Mechanism legislation.

Footnotes

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