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30 August 2019

WOODSIDE ENERGY LIMITED
SCARBOROUGH OFFSHORE PROJECT PROPOSAL
COMMENT BY CONSERVATION COUNCIL OF WA

BACKGROUND

1. The Environmental Defender's Office Western Australia (Inc) acts for the Conservation Council of Western Australia (**CCWA**) and submits these comments on behalf of CCWA.

2. Woodside Energy Limited (**Proponent**) prepared the draft Scarborough Offshore Project Proposal (**OPP**) in June 2019 which proposes to develop the Scarborough gas resource through new offshore facilities in Commonwealth waters approximately 375 kilometres off the Burrup Peninsula (**Proposal**). The Scarborough gas resources forms part of the Greater Scarborough gas fields and comprises the Scarborough, North Scarborough, Thebe and Jupiter gas fields.

3. Woodside's preferred concept is to process Scarborough gas through brownfield expansion of the existing Pluto LNG onshore facility (**Pluto Train 2**).

4. The proposed offshore development proposes to commercialise the Scarborough and North Scarborough gas fields, through the construction of a number of subsea, high-rate gas wells, tied back to a semi-submersible floating production unit (**FPU**) moored in approximately 900 metres of water close to the Scarborough field.

5. Key components of the Proposal include:

    a. Surface infrastructure – FPU in approximately 900 metres of water over the Scarborough reservoir

    b. Subsea infrastructure - infield infrastructure, including wellheads, manifolds, flowlines and umbilicals, export trunkline and communications lines

    c. Wells – drilling anticipated in two phases. Drilling of the Scarborough and North Scarborough gas fields, with potential for future fields (including Thebe and Jupiter gas fields) to be tied back to the facility

    d. Trunkline installation – installation of a 32-inch gas trunkline to extend for a total of 430 kilometres using piling to support anchoring of pipelay vessel and trenching and backfill (for nearshore only).

IMPACT OF GREENHOUSE GAS EMISSIONS

6. The OPP states that the Proposal's direct (Scope 1) greenhouse gas emissions (**GHGe**) will contribute 0.1% of Australia's GHGe and maximum onshore contribution is 0.4%.

7. It also states that the Proposal's emissions will comprise 2.5% of WA's GHGe.

8. While the OPP refers to the Paris Agreement and Australia's obligations under this Agreement, it fails to manage the impacts/risks of the Proposal's GHGe to a level that is acceptable in accordance with the established science of climate change, the EPBC Act or Australia's international obligations under the Paris Agreement.

9. In relation to the contribution of the Proposal's routine atmospheric and greenhouse gas emissions to climate change, the Environmental Performance Outcome (**EPO**) outlined in the OPP is to "optimise efficiencies in air emissions and reduce greenhouse emissions to ALARP and Acceptable Levels".[1]

10. The adopted control measures to achieve this EPO in the OPP are:
    a. Facilities will be designed and operated to optimise resource efficiency.
    b. Reporting of GHG emissions as per regulatory requirements.

11. In our client's view the OPP and the above controls are insufficient to manage the impacts and risks of the Proposal's GHGe to an acceptable level or as low as reasonably practicable (**ALARP**). In particular, the OPP's deference to the State EPA Assessment and PER document for the Pluto Facility to manage the impacts of the Proposal's GHGe is insufficient and inappropriate.

12. In order for the OPP to sufficiently manage the impacts and risks of the GHGe from the Proposal, we submit that the following changes to the OPP are required:
    a. Further details of environmental impacts and risks from GHGe, including the consideration/evaluation and management of:
        i. All GHGe across the project lifetime;
        ii. Cumulative impacts;
    b. Introduction of GHGe-specific control measures to manage these impacts to acceptable levels and ALARP (given the current energy efficiency measures are insufficient to achieve the OPP's Environmental Performance Objective).
    c. Improved reporting requirements given the limits of the reporting framework under the NGER Act.
    d. Dismissal of market substitution argument.

13. The OPP does not contain details of the impacts of the Proposals' GHGe on the Murujuga rock art (petroglyphs) that exist in the Dampier Archipelago (including the Burrup Peninsula) or include any control measures to ensure these impacts and risks are managed

[1] OPP p 33.

to acceptable levels or ALARP. The connection of the Scarborough reservoir to the Pluto LNG plant will result in a significant extension to the operational lifespan of that plant, and a consequent substantial increase in duration in which the Murujuga Rock art is exposed to emissions from the LNG operation.

14. In order to sufficiently consider and manage the impacts and risks of the Proposal on Murujuga rock art that exists in the Burrup Peninsula, the following changes to the OPP are required:
    a. Inclusion of details of the cumulative environmental impacts and risks from GHGe (and other emissions such as acid gas) on the rock art across the lifetime of the project;
    b. Introduction of specific control measures to manage these impacts to acceptable levels and ALARP.

INSUFFICIENT MANAGEMENT AND REGULATION OF IMPACTS OF GHGE TO ACCEPTABLE LEVEL

15. The OPP states the following in relation to the regulation of the Proposal's GHGe:
    The Paris Agreement has established a framework for managing global climate change that relies on nations setting Nationally Determined Contributions and establishing domestic policies to meet them. As such, Scarborough will be subject to domestic laws that reflect Australia's commitment under the Paris Agreement. Beyond complying with these laws, Scarborough is subject to Woodside's Climate Change Policy, which includes promoting a culture of energy efficiency and improved resource use in designs and operations.[2]

16. The OPP also makes numerous references to the Pluto PER document as a result of the EPA's assessment conducted in July 2007 and relies on this assessment to estimate the related processing emissions (onshore) and indirect emissions from the Proposal.

17. In particular, the OPP states:

    Gas from the development of Scarborough will be processed at the onshore Pluto Gas Plant, which Woodside intends to expand within the existing cleared footprint to include a second processing train. Greenhouse gas emissions associated with the two trains at the Pluto Gas Plant were assessed and approved under the Western Australian Environment Protection Act 1986 and Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC 2006/2968 and Ministerial Statement 757).[3]

    …

[2] OPP p 299.
[3] OPP p 342.

Scope three emissions (i.e. those related to transport and consumption of LNG product by customers) for a two-train development have been assessed and approved as part of the above PER process.[4]

18. Our client submits that national GHG regulation, Woodside's Climate Change Policy and the WA EPA PER document/assessment do not adequately regulate or manage the Proposal's GHGe to acceptable levels.

19. The EPA PER document and assessment are outdated and did not contemplate processing of Scarborough gas at Pluto Train 2, with it containing no reference to Scarborough at all. The processing of Scarborough gas through the Pluto LNG plant will significantly increase the total quantity of gas processed by that facility across its operational lifetime, and will consequently result in a substantial increase in the total quantity of GHGe across the project lifetime, and the commensurate environmental impacts.

20. It is therefore inappropriate for the OPP to rely on this assessment to estimate and manage the impacts/risks from scope 2 and 3 emissions from the Proposal.

21. In our client's view, a fresh Commonwealth assessment should be conducted of the impacts and risks from GHGe as a result of the processing of Scarborough gas through the Pluto facility and expansion of the Pluto facility.

22. In order to sufficiently consider and manage the impacts and risks associated with GHGe emissions of the Proposal, the following changes to the OPP are required:
    a. Inclusion of details of the cumulative additional GHGe arising from the processing of Scarborough gas through the Pluto LNG plant;
    b. Introduction of specific control measures for GHGe that require the proponent to avoid, reduce and offset its GHGe and achieve net zero emissions

23. At the very least, the OPP should include/consider GHGe measures that require the proponent to avoid, reduce and offset its GHGe and achieve net zero emissions.

FURTHER DETAILS ON THE PROPOSAL'S GHGE REQUIRED

TOTAL LIFECYCLE GHGE SHOULD BE CONSIDERED AND MANAGED

24. The OPP refers to direct (Scope 1) GHGe, related processing emissions (onshore) and indirect (Scope 3) emissions.

25. It states that the Proposal will result in approximately 500ktCOe per year of direct (Scope 1) emissions, and approximately 2.1 MMT CO2e per year of related processing emissions onshore.

26. In relation to indirect (Scope 3) emissions, the OPP states that they were assessed and approved as part of the EPA PER process at the State level (EPA Report 1259 published

[4] Ibid.

in July 2007). This statement is inaccurate, as the EPA Report contains no references to Scope 3 or indirect GHGe.

27. In our client's view, the OPP should characterise/contain details of and manage the total lifecycle GHGe from the Proposal – including the indirect (Scope 3) emissions (from transport and consumption of LNG by customers) and cumulative impact of these emissions on the environment.

28. In relation to impacts of GHGe, the OPP states that routine atmospheric and scope 1, related processing and indirect emissions have the potential to result in a change in air quality which may lead to the following further impacts:

    -injury/mortality to fauna
    -climate change
    -change in aesthetic value.[5]

29. We submit that the OPP's description of impacts and risks from GHGe is insufficient, and that further detail is required on the Proposal's GHGe and the impacts and risks of these GHGe on the environment and the rock art in order they are managed to acceptable levels and ALARP.

30. The description of these impacts and risks should be based on the best available climate science.

CUMULATIVE IMPACTS SHOULD BE CONSIDERED AND MANAGED

31. Our client submits that the draft OPP fails to adequately consider the interconnectedness of the Proposal with the "Burrup Hub" project being developed by the Proponent, which comprises the Proposal, the Scarborough Project Nearshore Component, the Karratha Gas Plant (North West Shelf Gas Project Additional Liquefied Natural Gas LNG Facilities), the Pluto North West Shelf Interconnector Pipeline, the Proposed Browse to NWS Development and the North West Shelf Project Expansion Proposal.

32. The OPP states the following in relation to the Burrup Hub vision:
    The proposed development of Scarborough is an integral part of Woodside's Burrup Hub vision for a regional gas hub which will secure economic growth and local employment opportunities for Western Australia. In addition to the development of the Scarborough and North Scarborough fields, the Thebe and Jupiter gas fields provide opportunities for future tieback to Scarborough Project infrastructure.

33. It also refers to a broader consultation program for all Burrup Hub opportunities:

    The stakeholder consultation for Scarborough is a component of Woodside's broader consultation program for all Burrup Hub opportunities including the Browse Development, NWS Extension, Pluto Expansion, Pluto-NWS Interconnector and activities

[5] OPP p 344.

to integrate industrial-scale solar power generation with gas-fired generation and battery storage for our future Burrup Hub LNG operations.

34. Despite this, the OPP does not integrate consideration of the impacts of the broader Burrup Hub vision into the proposed assessment of the proposal. Accordingly, the OPP fails to consider the cumulative impacts of the Proposal as a component of the broader project.

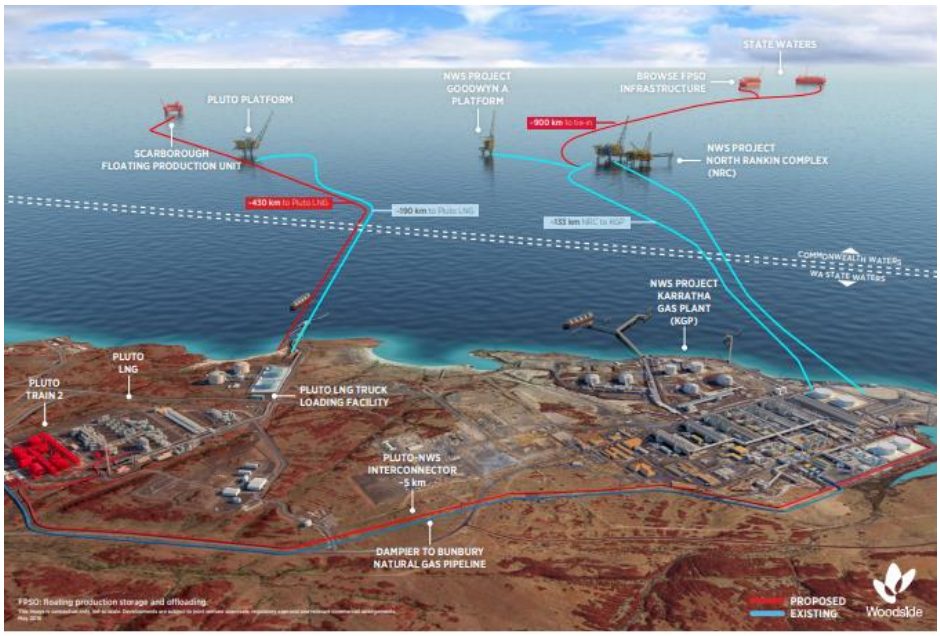
35. In our client's view, it is not appropriate for the overall "Burrup Hub" project to be separated into separate proposals for the purpose of environmental impact assessment at the Commonwealth and State levels. Woodside recognises the interconnected nature of these proposals on its website, stating:

    "To realise the Burrup Hub vision a number of activities are being advanced simultaneously: Scarborough; Pluto Train 2; Browse to NWS Project; NWS Project Extension and Pluto-NWS Interconnector...

    The Burrup Hub involves the proposed development of some 20 to 25 trillion cubic feet (Tcf) of gross (100%) dry gas resources from Scarborough, Browse and Pluto, relying on our proven liquefied natural gas (LNG) facilities – Pluto LNG and the North West Shelf Project.

    We propose to link these facilities to create the Burrup Hub which could also provide the infrastructure to accelerate other offshore Pluto gas reserves and also enable future development of third-party resources."1

36. We also refer to the diagrammatic representation of the "Burrup Hub" project, available on Woodside's website, which reflects the interconnected nature of the purportedly separate proposals (see below).



37. In our client's view, the separation of the components of the "Burrup Hub" project is inappropriate and fails to take into account the connection and relationship between the proposals or the total overall, aggregated and cumulative impact of the expansion project.

38. However, in recognition that the decision has been made to assess the "Burrup Hub" through separate proposals, our client submits that the emissions of the Proposal should not be considered in isolation but instead the cumulative impacts of the Proposal's GHGe should be considered in the context of other existing and future proposals (particularly those comprising the Burrup Hub project) and global GHGe.

39. Considering the cumulative impact of GHGe from multiple proposals will ensure that the OPP effectively assesses the Proposal's contribution to local and global GHGe.

40. The consideration of cumulative impacts in environmental impact assessment is supported by the International Association for Impact Assessment's best practice principles, which state "the effects on climate change of any single proposal may appear insignificant, but may not be when added to numerous other past, current and future projects".[6]

41. The Court also recognised the contribution of a mine's direct and indirect GHG emissions cumulatively to global GHGe and climate impacts in *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7 (**Gloucester**). In particular, the Court stated:

    "There is a causal link between the [mine's] cumulative GHG emissions and climate change and its consequences. The [mine's] cumulative GHG emissions will contribute to the global total of GHG concentrations in the atmosphere. The global total of GHG concentrations will affect the climate system and cause climate change impacts. The [mine's] cumulative GHG emissions are therefore likely to contribute to the future changes to the climate system and the impacts of climate change." [525]

42. On the international scale, the Dutch Supreme Court also referred to cumulative impacts of GHGe in *Urgenda Foundation v Kingdom of the Netherlands,* stating that*:*

    "The fact that the amount of… emissions is small compared to other countries does not affect the obligation to take precautionary measures… After all, it has been established that any anthropogenic greenhouse gas emission, no matter how minor, contributes to an increase of CO2 levels in the atmosphere and therefore to hazardous climate change…"[7]

43. The New South Wales Land and Environment Court also emphasised the importance of cumulative impacts of emissions from projects being considered in EIA in *Gray v Minister for Planning* [2006] NSWLEC 720 stating that*"one important consideration [in environmental impact assessment] must be the assessment of cumulative impacts of*

[6] https://www.iaia.org/uploads/pdf/SP8.pdf p 2.
[7] Urgenda [4.79].

proposed activities on the environment".[8]

44. Accordingly, it is crucial that the OPP consider cumulative impacts of the Proposal's GHGe to ensure its impacts and risks are managed to acceptable levels and ALARP.

NET ZERO EMISSIONS OUTCOME SHOULD BE APPLIED AS ENVIRONMENTAL PERFORMANCE OUTCOME

45. In our client's view, the Environmental Performance Outcome in the OPP to "optimise efficiencies in air emissions and reduce greenhouse emissions to ALARP and Acceptable Levels"[9] is insufficient.

46. Our client submits that the OPP should amend the Environmental Performance Outcome to require the Proponent to achieve net zero emissions as the level against which the environmental performance of Proponent is assessed.

47. This is consistent with the Commonwealth Department of Environment's recommendation in its Report for the Prelude Floating Liquefied Natural Gas Facility prepared in 2010:
"The Greenhouse Gas Strategy must include measures and compensatory offsets to ensure that the operational emissions of the Prelude Floating Liquefied Natural Gas Facility… results in no net increase in Australia's CO2 -equivalent emissions"

48. The IPCC also states in its Special Report that GHGe must reach net zero by about 2050 in order to stop global warming at 1.5°C.[10] According to the IPCC, net zero emissions are achieved when anthropogenic CO2 emissions are balanced globally by anthropogenic CO2 removals over a specified period.

49. This net zero emissions outcome is supported by the carbon budgets approach which is widely accepted internationally by atmospheric scientists and academics. In the case of GHGe, the receiving environment is the global atmosphere. Internationally agreed science has established that the carrying capacity of the global atmosphere to ensure a 'safe' and sustainable climate (compatible with 1.5'C warming) has already been exceeded. The carbon budgets approach specifies that due to the global atmosphere already being full, the global carbon budget has been 'spent'.

50. The Court in *Gloucester* explains the carbon budget approach with reference to expert evidence from Will Steffen as follows:
A commonly used approach to determine whether the NDCs of the parties to the Paris Agreement cumulatively will be sufficient to meet the long term temperature goal of

[8] Gray v Minister for Planning [2006] NSWLEC 720 [122].

[9] OPP p 33.
[10] IPCC Special Report on Global Warming of 1.5°C , p 95.

keeping the global temperature rise to between 1.5ºC and 2ºC is the carbon budget approach… The carbon budget approach "is a conceptually simple, yet scientifically robust, approach to estimating the level of greenhouse gas emission reductions required to meet a desired temperature target", such as the Paris Agreement targets of 1.5ºC or 2ºC (Steffen report [38])…Once the carbon budget has been spent (emitted), emissions need to become "net zero" to avoid exceeding the temperature target. "Net zero" emissions means the magnitude of CO2 emissions to the atmosphere is matched by the magnitude of CO2 removal from the atmosphere (Steffen report, [40]). [441]

51. In relation to new fossil fuel developments, the Court states the following:

Professor Steffen considered that the phasing out of fossil fuel combustion necessitates not exploiting and burning most of the world's existing fossil fuel reserves: "Most of the world's existing fossil fuel reserves – coal, oil and gas – must be left in the ground, unburned, if the Paris accord climate targets are to be met. I say that because the exploitation, and burning, of fossil fuel reserves leads to an <u>increase in</u> CO2 emissions when meeting the Paris accord climate targets requires a rapid and deep <u>decrease</u> in CO2 emissions." (Steffen report, [50]). [446]

*Professor Steffen considered that if most of the world's existing fossil fuel reserves need to be left in the ground unburned, no new fossil fuel developments should be allowed: "An obvious conclusion that follows from this fact is that: No **new** fossil fuel development is consistent with meeting the Paris accord climate targets. That is, paragraphs 47-50 above demonstrate clearly that to meet the Paris accord, emissions must be reduced rapidly and deeply (cf Figure 3 below), and to do this requires the rapid phase-out of **existing** fossil fuel mines/wells. It is an obvious conclusion that no new fossil fuel developments can therefore be allowed." (Steffen report, [51]).* [447]

52. The adoption of this approach is also supported by evidence from the International Energy Agency's World Energy Outlook Report, in which Fatih Birol, the executive director, states: *"we have no room to build anything that emits CO2 emissions…We are eating up 95% of the [carbon] budget, even if we don't do anything else.".*[11]

53. The requirement for 'net zero emissions' as a fundamental test of environmental acceptability is also consistent with relevant policy considerations, being:
    a. a science-based precautionary approach that draws from the best available science on climate change, including its impacts on the Australian environment;

    b. the aim of the Paris Agreement to achieve net zero emissions by 2050 globally, which according to the IPCC Special Report on 1.5°C, GHGe must reach net zero by about 2050 in order to stop global warming at 1.5°C;[12]

[11] Adam Vaughan, 'World has no capacity to absorb new fossil fuel plants, warns IEA', 13 November 2018, The Guardian <https://www.theguardian.com/business/2018/nov/13/world-has-no-capacity-to-absorb-new-fossil-fuel-plants-warns-iea>.
[12] IPCC Special Report on Global Warming of 1.5°C , p 95.

c. the application of the principles of ecologically sustainable development (**ESD Principles)** including the precautionary principle; the principle of intergenerational equity; the principle of conservation of biological diversity; and principles relating to improved valuation, pricing, and incentive mechanisms.

54. Achieving net zero emissions will require the Proponent to implement control measures and adopting technologies that avoid, reduce and offset its GHGe. For example, proponents could deploy emission avoidance or reduction technologies such as renewables, all-electric design, or negative emission technology such as carbon capture and storage.

ENERGY EFFICIENCY MEASURES INSUFFICIENT TO MANAGE IMPACTS OF GHGE TO ACCEPTABLE LEVEL

55. The OPP refers to energy efficiency measures. It proposes the following "preferred options":
    - Allowance in design for future installation of a battery energy storage system (BESS);
    - Use of waste heat from turbine exhaust to provide heating duty on the FPU, removing the need for fired boilers
    - Providing pre-cooling of incoming gas using a gas-gas heat exchanger rather than refrigeration
    - Internally flow coated trunkline which reduces pressure drop along the length and therefore requires lower compression on the FPU, and
    - Turbine and equipment selection[13]

56. It states that alternative power sources such as offshore renewables or a cable from shore have not been selected because of "technical constraints associated with the infrastructure" and "significant cost which was considered grossly disproportionate to the emissions reduction".[14]

57. Our client submits that these energy efficiency measures are not sufficient to achieve the OPP's Environmental Performance Objective of reducing GHGe to ALARP and Acceptable Levels, with there being no reference to, or inclusion of, control measures to avoid, reduce or offset the Proposal's GHGe.

58. In our client's view, this is entirely inadequate and inappropriate given the substantial emissions associated with the Proposal.

SPECIFIC CONTROL MEASURES REQUIRED TO MANAGE IMPACTS OF GHGE TO ACCEPTABLE LEVEL

59. Despite describing the impacts of some of the Proposal's GHGe on the environment, the OPP does not refer to any specific control measures to manage these impacts or to avoid, reduce or offset GHGe from the Proposal.

[13] OPP 4.5.4.8.
[14] OPP 4.5.4.8.

60. We submit that the OPP should consider/include GHGe-specific control measures to avoid, reduce and offset the Proposal's GHGe and ensure it achieves net zero emissions. This is supported by the Department of Environment's recommendations in relation to Prelude, which states:
The Greenhouse Gas Strategy must include measures and compensatory offsets to ensure that the operational emissions of the Prelude Floating Liquefied Natural Gas Facility… results in no net increase in Australia's CO2 -equivalent emissions.

61. The GHGe measures in the OPP should consider and be modelled on international and industry best practice or standards.

62. At the international level, Chevron and Woodside's Kitimat LNG Expansion Project in Canada proposes an all-electric design and the replacement of gas turbines with hydro-power, which it states "will achieve the lowest emissions intensity of any large-scale LNG facility in the world". More specifically, the proposal for Kitimat proposes the following mitigation measures:

The LNG plant will use electric motor driven technology for all liquefaction process and utility compressors, pumps and fans. As a result, the KLNG Project will be one of the lowest GHG emitters of its type. An electric drive concept also means that significant increases to liquefaction capacity can be achieved with a negligible increase in GHG emissions.[15]

63. At the State level in WA, the approval of the Gorgon Gas Development was dependent on the successful operation of a CO2 Injection System that is capable of injecting all reservoir CO2 into the ground that would otherwise be vented from the proposal.

64. The OPP should consider these developments in managing the impacts and risks of the Proposal's GHGe to an acceptable level.

REPORTING UNDER NGER ACT INSUFFICIENT TO MANAGE IMPACTS OF GHGE TO ACCEPTABLE LEVEL

65. The OPP states that reporting of GHG emissions is already required on an annual basis under the NGER Act. In particular, it states that "Woodside will report GHG emissions and energy use from the offshore facilities in accordance with its requirements under the NGER Act".[16]

66. The current reporting framework under the NGER Act is limited. In particular, the NGER Act only covers the reporting of Scope 1 and 2 emissions, and does not consider Scope 3 emissions, and some types of emissions are not fully covered by the methodology (including emissions from agriculture, deforestation and other land use types). Further, it

[15] https://www.projects.eao.gov.bc.ca/api/document/5d278561caf02f00216ee6ab/fetch/KLNG_ProjectDescription_CEAA_FINAL.pdf p 72.
[16] OPP p 343.

does not facilitate provision of information to the community about the proponents' efforts to minimise emissions or emissions intensity performance achieved in practice.

67. Reporting under the NGER Act is aggregated up to a corporate level, providing the public with no visibility on emissions from particular facilities, and such reporting does not provide for the assessment of performance in relation to GHG abatement.[17]

68. In light of the above, we submit that, in order to ensure that the impacts and risks of the Proposal's GHGE are managed to acceptable levels/ALARP, the OPP should go further than the framework under NGER Act and require the Proponent to:
    a. publicly report and publish facility-level GHGe data (including scope 3 emissions) in a timely manner;
    b. publicly report on its performance in managing these emissions to an acceptable level and ALARP;
    c. publish data and report online through a simple, government hosted portal, as an extension of the normal reporting requirements for proponents to provide data to members of the public upon request;
    d. publicly report all offsets in a GHG offsets register established by the Commonwealth.

69. The above requirements would avoid the need for the public to request that information directly from the proponent and would increase transparency and accountability for reporting of GHGe data and reduction efforts in

ARGUMENT THAT LNG DISPLACES EMISSION INTENSIVE FUELS NOT SUBSTANTIATED

70. The Proponent refers to the potential of LNG to displace carbon intensity fossil fuels and complementing renewables and displacing more emission intensive fuels, resulting in a net impact of decreasing global GHGe concentrations. In particular, it states:

    As outlined in the Pluto PER life cycle analysis, LNG has the potential to play a key role in displacing higher carbon intensity fossil fuels and complementing renewables.[18]

71. A related market substitution argument was addressed and dismissed by Preston CJ in the *Gloucester* case. Preston CJ referred to the United States case *WildEarth Guardians v US Bureau of Land Management* 870 F 3d 1222 (10th Cir, 2017), and states:

    The Court of Appeals held that BLM's perfect substitution assumption lacked any support in the administrative record…The Court of Appeals held:
    "That this perfect substitution assumption lacks support in the record is enough for us to conclude that the analysis which rests on this assumption is arbitrary and

[17] Recognised by the EPA in EPA Report 1462, p 3.

[18] OPP p 342.

> *capricious" (at 1235). The Court of Appeals also concluded that "the assumption itself is irrational (i.e. contrary to basic supply and demand principles" (at 1236), holding that "it was an abuse of discretion to rely on an economic assumption, which contradicted basic economic principles, as the basis for distinguishing between the no action alternative and the preferred alternative".*[19]

72. While the findings in the *Gloucester* case relate specifically to coal, the same reasoning can be applied to the market substitution arguments being made in favour of the fossil fuel production and LNG industry in WA. In particular, it is clear that this contention fails to acknowledge the developing policy and legislative circumstances in other nations and the general global market transition away from fossil fuels.

73. Preston CJ also referred to academic articles[20] on the irrelevance of market substitution arguments to environmental impacts and therefore the EPA's role in assessing and advising on proposals in WA:

> *There is also a logical flaw in the market substitution assumption. If a development will cause an environmental impact that is found to be unacceptable, the environmental impact does not become acceptable because a hypothetical and uncertain alternative development might also cause the same unacceptable environmental impact. The environmental impact remains unacceptable regardless of where it is caused. The potential for a hypothetical but uncertain alternative development to cause the same unacceptable environmental impact is not a reason to approve a definite development that will certainly cause the unacceptable environmental impacts.*

74. The logic in Preston CJ's remarks above are equally applicable to hypothetical and uncertain claims regarding the substitution of coal by gas.

75. It is therefore clear in our client's view that the market substitution is logically flawed.

76. If the OPP is to accept this argument, we submit that the burden/onus of proof must be on the Proponent to demonstrate that the contention is substantiated and backed with credible evidence.

77. This will require consideration of the legal and policy framework in the other/import country and its market. In particular, given the global transition away from fossil fuels towards renewables, it will require demonstration that the country is not moving away from coal, thereby discrediting the market substitution argument.

78. Acceptance of this argument will also require a tracking system/standard/framework to be established to quantify avoided emissions and ensure that reductions are credible and

[19] *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7 [543]
[20] Kane Bennett, "Australian climate change litigation: Assessing the impact of carbon emissions" (2016) 33 EPLJ 538 at 546-548; Justine Bell-James and Sean Ryan, "Climate change litigation in Queensland: A case study in incrementalism" (2016) 33 EPLJ 515 at 535.

genuine. For example, the GHG Protocol (comprising the World Resources Institute and World Business Council for Sustainable Development) has established the Technical Guidance for Calculating Scope 3 Emissions which state that "any claims of avoided emissions related to a project must be reported separately from the company's scope 1, scope 2, and scope 3 inventories".[21]

79. This will also require collaboration and linkage between the Australian government and other countries to avoid "double counting" in accordance with Article 6 of the Paris Agreement.

IMPACT ON ROCK ART

DETAILS ON IMPACT OF PROPOSAL ON MURUJUGA ROCK ART REQUIRED

80. The OPP does not contain details of the impacts of the Proposals' GHGe on the Murujuga rock art (petroglyphs) that exist in the Dampier Archipelago (including the Burrup Peninsula) or include any control measures to ensure these impacts and risks are managed to acceptable levels or ALARP.

81. Our client considers that the direct and indirect impacts of the Proposal's emissions on the Murujuga rock art are unknown and should be addressed, characterised and managed in the OPP.

82. In particular, the draft OPP does not adequately consider or manage the direct and indirect impacts of the emissions (including NOx and CO2) from the Proposal on the Murujuga rock art (petroglyphs) that exist in the Dampier Archipelago (including the Burrup Peninsula).

83. Our client contends that the emissions of NOx from the Proposal and from the broader "Burrup Hub" project will contribute the formation of acid which dissolves the outer rock surface patina which degrades and destroys the rock art irreversibly, and thereby will accelerate the weathering effects on the Murujuga rock art.[22]

84. The Proposal also does not acknowledge or address the environmental impacts of CO2/GHGe from the Proposal on the Murujuga rock art.

85. We are concerned that continuing the current levels of emissions of the Proposal until 2070 will be cumulative and likely to lead to the destruction of many important petroglyphs in the vicinity of the Proposal.

[21] https://ghgprotocol.org/sites/default/files/standards/Scope3_Calculation_Guidance_0.pdf p 151.
[22] MacLeod, I. 2005. Effects of moisture, micronutrient supplies and microbiological activity on the surface pH of rocks in the Burrup Peninsula. *Triennial meeting (14th), The Hague, 12–16 September 2005: preprints*, James & James, pp. 386–393; Giesen, M.J., Ung, A.,Warke, P.A., Christgen, B., Mazel, A.D., Graham, D.W., 2014. Condition assessment and preservation of open-air rock art panels during environmental change. J. Cult. Herit. 15, 49–56.

86. Our client notes that the French cave paintings in the Vézère Valley have been provided stringent protections against even CO2 emissions from tourists' breath.[23] Our client considers that the Murujuga rock art (some 23,000 years older than the French cave paintings) should be accorded protections of a similar level.

CONTROL MEASURES TO MANAGE IMPACTS ON ROCK ART REQUIRED

87. The draft OPP does not contain any control measures for managing the impacts/risks of the Proposal on the rock art.

88. In our client's view, following the characterisation of direct, indirect and cumulative impact of the Proposal's emissions on the rock art, control measures must be included in the OPP to manage the these impacts to an acceptable level and ALARP.

Potential Matter of National Environmental Significance

89. We also note that on August 2018 the McGowan Government began the UNESCO World Heritage nomination process for the Burrup Peninsula.

90. If the Burrup Peninsula is listed, it will mean that it will become a MNES under the EPBC Act. In the event that this occurs, NOPSEMA will be obliged to consider the impacts of all proposals on the rock art in the Burrup Peninsula in its assessments.

91. Given the above, we submit that a precautionary approach should be adopted to ensure that the impacts of the Proposal on the rock art are characterised and managed in accordance with principles of ecologically sustainable development and to maintain this important cultural and environmental feature.

[23] Australian Senate, Environment and Communications References Committee, 'Protection of Aboriginal Rock Art of the Burrup Peninsula' (March 2018), p 98 (available here: https://www.aph.gov.au/~/media/Committees/ec_ctte/BurrupPeninusla/report.pdf?la=en).