



Environmental
Protection
Authority

Gorgon Gas Development and Janz Feed Gas Pipeline – Inquiry
under Section 46 of the *Environmental Protection Act 1986*
to amend the implementation conditions of Ministerial
statements 769, 800, 965, and 1002 relating
to the emission of greenhouse gases

Chevron Australia Pty Ltd

Report 1729
September 2022

Inquiry under Section 46 of the *Environmental Protection Act 1986*

The Minister for Environment has requested that the Environmental Protection Authority (EPA) inquire into and report on the matter of amending the implementation conditions of:

- Ministerial statement 769 (for the Janz Feed Gas Pipeline: Barrow Island Nature Reserve)
- Ministerial statement 800 as amended by Ministerial statements 865 and 1136 (for the Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve)
- Ministerial statement 1002 (for the Gorgon Gas Development Fourth Train Expansion Proposal)

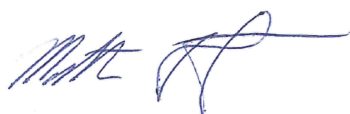
relating to the emission of greenhouse gases.

The Minister for Environment also requested that the EPA inquire into, and report on, the matter of amending the implementation conditions of Ministerial statement 965 (for the Gorgon Gas Development – Barrow Island: Additional Construction Laydown and Operations Support Area), to ensure that any amendments to Ministerial statement 800 arising from this inquiry are incorporated into this statement.

Section 46(6) of the *Environmental Protection Act 1986* requires the EPA to prepare a report that includes:

- (a) a recommendation on whether or not the implementation conditions to which the inquiry relates, or any of them, should be changed
- (b) any other recommendations that it thinks appropriate.

The following is the EPA's report to the Minister pursuant to s. 46(6) of the *Environmental Protection Act 1986*.



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Chair

23 September 2022

ISSN 1836-0491 (Online)
Assessment No. 2327

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Summary

The Gorgon Gas Development and Janz Feed Gas Pipeline (the proposals) are for the development of the Janz and Greater Gorgon Gas Fields and the processing and export of 20 million tonnes per annum (Mtpa) of gas at a liquefied natural gas plant on the Barrow Island Nature Reserve.

The proposals have been approved under Ministerial statements 769, 800, 965, and 1002 after several EPA assessments and appeals from those assessments by the proponent and third parties. In determining the appeals on EPA Bulletin 1221 for the Gorgon Gas Development Barrow Island Nature Reserve proposal, the then Minister for Environment decided that:

- The proponent should be required to design, construct, and operate infrastructure on Barrow Island to inject the reservoir carbon dioxide (CO₂) from gas processed at the site. This resulted in condition 26 of Ministerial statement 800 (MS 800).
- A separate, further condition should require the proponent to reduce the greenhouse gas (GHG) emissions from the processing plant. This resulted in condition 27 of MS 800.

The decision to add these conditions was an appropriate response, having regard to the conservation status of Barrow Island, and noting the importance of government, industry and the community generally maximising opportunities for reducing greenhouse gas emissions.

Following a request from the Minister for Environment in February 2022, the EPA has inquired into amending existing conditions 26 and 27 in MS 800, and has considered the following matters:

- whether condition 26 (Reservoir Carbon Dioxide Injection System) and condition 27 [Greenhouse Gas Abatement Program (GHGAP) for the Gas Treatment Plant] should be retained as separate conditions
- whether condition 26 is still appropriate to meet the EPA's objectives in relation to the injection of reservoir emissions
- whether condition 27 is still appropriate to meet the EPA's objectives regarding non-reservoir GHG emissions, particularly in regard to:
 - should reservoir and non-reservoir emissions be considered together for the purpose of a GHG emissions reduction trajectory?
 - what GHG emissions reduction trajectory should be required?
 - the results of a best practice review for the processing facility
- what should the baseline GHG emissions quantity for condition 27 be?

Amendments to condition 26

The EPA considers it is appropriate to change condition 26 of MS 800 so that it reflects that 100% of reservoir CO₂ emissions should be injected underground using

the established Reservoir Carbon Dioxide Injection System where practicable, that all measures necessary to achieve injection of 80% reservoir CO₂ emissions should be implemented, and any remaining volume of reservoir CO₂ that is not injected underground is offset using authorised offsets.

Amendments to condition 27

The EPA considers it is appropriate to change condition 27 of MS 800 in order to make it consistent with contemporary EPA recommended conditions on the management of GHG emissions, particularly in regard to requiring the proponent to commence a straight line GHG emissions reduction trajectory in 2025 to achieve net-zero GHG emissions by 2050. The EPA considered the original requirements for continuous improvement and best practice as a part of these conditions.

The EPA considered the proponent's submission that the baseline for the GHG emissions reduction trajectory should include reservoir and non-reservoir emissions, consistent with some other recent EPA decisions. The EPA does not consider this is appropriate in this case as the reservoir CO₂ content associated with the North-West Shelf Project Extension proposal (approximately 2–2.5%) and Pluto LNG facility emissions (approximately 0.1% from Scarborough) are much smaller than that of the Gorgon Gas Development reservoirs (approximately 14%). The high reservoir CO₂ content of the Gorgon gas warrants requirements for it to be injected and being treated separately to the requirements for non-processing emissions to be reduced.

1 Proposals

The EPA considers that the following proposals are relevant to this inquiry as they relate to the Janz Feed Gas Pipeline: Barrow Island Nature Reserve and the Gorgon Gas Development on Barrow Island.

Janz Feed Gas Pipeline: Barrow Island Nature Reserve

The Janz Feed Gas Pipeline: Barrow Island Nature Reserve proposal is to supply natural gas from the Janz/lo field located in Commonwealth waters approximately 200 km off the Pilbara coast of Western Australia and pipe it across the Barrow Island Nature Reserve to the Gorgon Gas Treatment Plant on Barrow Island. The proponent for the proposal at the time of referral was Mobil Australia Resources Company Pty Ltd.

The Environmental Protection Authority (EPA) assessed the proposal at the level of Assessment on Referral Information (ARI) and published its report in December 2007 (Report 1278). In this report, the EPA considered the following key environmental factors were relevant to the proposal:

- Conservation areas
- Flora and fauna
- Groundwater
- Terrestrial values
- Marine values
- Light.

In applying the *Statement of environmental principles, factors, objectives and aims of EIA* (EPA 2021a) these factors are now represented by:

- Flora and vegetation
- Terrestrial fauna
- Inland waters
- Terrestrial environmental quality
- Marine environmental quality
- Marine fauna
- Benthic communities and habitats
- Coastal processes.

The EPA concluded in Report 1278, that the Janz proposal is capable of being managed in a manner such that it is unlikely that significant additional environmental impacts would occur beyond those that have already been authorised by the Minister for the Environment for the implementation of the Gorgon proposal, provided there is satisfactory implementation of the recommended conditions set out in Appendix 2 in Report 1278.

The then Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial statement 769 (MS 769) on 30 May 2008.

Gorgon Gas Development Barrow Island Nature Reserve

The Gorgon Gas Development Barrow Island Nature Reserve proposal is to extract, pipe, liquefy, and export 10 million tonnes per annum (Mtpa) of natural gas from the Greater Gorgon and Jansz gas fields using facilities offshore and on Barrow Island, Western Australia. The proposal includes a 10 Mtpa liquefied natural gas (LNG) processing complex, a 300 terajoule per day domestic gas plant, a carbon dioxide injection plant and associated infrastructure on Barrow Island nature reserve. The proponent for the proposal at the time of referral was Chevron Australia Pty Ltd.

The EPA assessed the proposal at the level of Environmental Review and Management Programme (ERMP) and published its report in June 2006 (Bulletin 1221). In this report, the EPA considered the following key environmental factors were relevant to the proposal:

- Terrestrial flora, fauna and vegetation communities
- Subterranean fauna
- Introduced non-indigenous organisms
- Marine biota, particularly flatback turtles and benthic primary producers
- Greenhouse gas injection and emissions
- Light, noise and vibration, particularly as they affect turtles
- Air quality
- Groundwater as it affects subterranean fauna.

The EPA concluded in Bulletin 1221 that the overall impacts of the proposal would be environmentally unacceptable and recommended that, from an environmental point of view, the proposal should not be permitted to proceed as proposed.

The then Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial statement 748 (MS 748) on 6 September 2007.

Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve

The Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve proposal is for the construction of facilities for the development of the Greater Gorgon Gas Fields on the North-West Shelf, and the processing and export of 15 Mtpa of gas at a liquefied natural gas plant to be constructed on Barrow Island, as more generally described in the Draft Environmental Impact Statement / Environmental Review and Management Programme for the Proposed Gorgon Development, the Final Environmental Impact Statement/ Response to Submissions on the Environmental Review and Management Programme; as amended under s.

45C; and as expanded and revised in the Public Environmental Review for the Gorgon Gas Development Revised and Expanded Proposal and the Response to Submissions: Gorgon Gas Development Revised and Expanded Proposal, Public Environmental Review. The proponent for the proposal at the time of referral was Chevron Australia Pty Ltd.

The EPA assessed the proposal at the level of Public Environmental Review (PER) and published its report in April 2009 (Report 1323). In this report, the EPA considered the following key environmental factors were relevant to the proposal:

- Marine turtles
- Dredging, marine blasting and marine infrastructure
- Introduced non-indigenous organisms
- Subterranean fauna
- Greenhouse gases
- Air quality
- Noise.

In applying the *Statement of environmental principles, factors, objectives and aims of EIA* (EPA 2021a) these factors are now represented by:

- Marine fauna
- Marine environmental quality
- Terrestrial fauna
- Flora and vegetation
- Subterranean fauna
- Greenhouse gases
- Air quality
- Social surroundings.

The EPA concluded in Report 1323, that having assessed newly identified and additional risks (including light, dredging, and blasting), the proposal could meet the EPA's objectives subject to the inclusion of stringent Ministerial conditions.

The then Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial statement 800 (MS 800) on 10 August 2009.

Gorgon Gas Development Fourth Train Expansion Proposal

The Gorgon Gas Development Fourth Train Expansion Proposal proposal is to expand the LNG production capacity of the existing proposal from 15 Mtpa to 20 Mtpa (nominal). The proponent for the proposal at the time of referral was Chevron Australia Pty Ltd.

The EPA assessed the proposal at the level of PER and published its report in March 2015 (Report 1539). In this report, the EPA considered that the following key environmental factors were relevant to the proposal:

- Benthic communities and habitat and marine environmental quality
- Marine fauna
- Air quality and atmospheric gases.

In applying the *Statement of environmental principles, factors, objectives and aims of EIA* (EPA 2021a) these factors are now represented by:

- Benthic communities and habitats
- Marine environmental quality
- Marine fauna
- Air quality.

The EPA concluded in Report 1539, that the proposal may be implemented to meet the EPA's objectives, provided the implementation of the proposal is carried out in accordance with the recommended conditions and procedures set out in Appendix 4 and summarised in section 4 of Report 1539.

The then Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial statement 1002 (MS 1002) on 30 April 2015.

Gorgon Gas Development – Barrow Island: Additional Construction Laydown and Operations Support Area Project

The Gorgon Gas Development – Barrow Island: Additional Construction Laydown and Operations Support Area Project proposal is for the use of an additional 32 hectares (ha) of uncleared land, within a 36 ha development envelope, on Barrow Island for the purposes of an additional construction laydown and operations support area, required to support the construction and operation of the Gorgon Gas Development Proposal referred to in MS 800. The proponent for the proposal at the time of referral was Chevron Australia Pty Ltd.

The EPA assessed the proposal at the level of Assessment on Proponent Information – Category A (API-A) and published its report in January 2014 (Report 1499). In this report, the EPA considered that the following key environmental factors were relevant to the proposal:

- Flora and vegetation
- Terrestrial fauna
- Subterranean fauna
- Offsets (integrating factor).

In applying the *Statement of environmental principles, factors, objectives and aims of EIA* (EPA 2021a) these factors are now represented by:

- Flora and vegetation
- Terrestrial fauna
- Subterranean fauna.

The EPA concluded in Report 1499 that the proposal can be managed to meet the EPA's environmental objectives, provided the proposal is implemented consistent with the existing management plans established under the implementation conditions of MS 800, with the addition of a condition related to offsets and an administrative condition relating to monitoring and reporting (Appendix 2 in Report 1499).

The then Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial statement 965 (MS 965) on 2 April 2014.

Previously approved amendments to the proposal

Jansz Feed Gas Pipeline: Barrow Island Nature Reserve (MS 769)

There have been no changes to the proposal under s. 45C of the EP Act.

Gorgon Gas Development Barrow Island Nature Reserve (MS 748)

There has been one change to the proposal under s. 45C of the EP Act:

- 1) Excavation of berthing pocket at the Barge Landing Facility, installation of additional communication facilities, relocation of the sweater intake, and modification of the Seismic Monitoring Program – approved on 22 May 2008 and defined by Attachment 1 in MS 748.

Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve (MS 800)

There have been seven changes to the proposal under s. 45C of the EP Act:

- 1) Amendment to clarify that discharge of waste from marine vessels will be in accordance with MARPOL 73/78 – approved on 23 February 2010 and defined by Attachment 1 in MS 800.
- 2) Change to the development and usage of boil off gas and an increase of seawater intake volume during the construction period – approved on 26 February 2010 and defined by Attachment 2 in MS 800.
- 3) The use of seawater for construction earthworks on the LNG treatment plant site – approved on 23 March 2010 and defined by Attachment 3 in MS 800.
- 4) Increase in construction duration and construction workforce – approved on 29 April 2011 and defined by Attachment 4 in MS 800.
- 5) Modification to the CO₂ pipeline from an above ground installation to a buried installation – approved on 2 June 2011 and defined by Attachment 5 in MS 800.
- 6) Deletion of construction duration and construction workforce detailed in Attachment 4 and correction of clerical error in Attachment 5 to MS 800 – approved on 26 June 2013 and defined by Attachment 8 in MS 800.

- 7) The temporary venting or flaring of gas liberated during the monoethylene glycol (MEG) regeneration process (MEG flash vapours) until the completion of commissioning of piping to route the MEG flash vapour to the condensate stabilisation overhead unit or until 31 December 2021 (whichever is earlier), and after that time when normal operations are not available (i.e. during periods of process shut-down and start-up, and upset conditions) – approved on 3 April 2020 and defined by Attachment 9 in MS 800.

Gorgon Gas Development Fourth Train Expansion Proposal (MS 1002)

There have been no changes to the proposal under s. 45C of the EP Act.

Gorgon Gas Development – Barrow Island: Additional Construction Laydown and Operations Support Area Project (MS 965)

There have been no changes to the proposal under s. 45C of the EP Act.

Previously approved amendments to the conditions

Jansz Feed Gas Pipeline: Barrow Island Nature Reserve (MS 769)

There has been one change to the conditions under s. 46C of the EP Act:

- 1) Deletion of existing condition 4: Compliance Reporting, condition 5: Environmental Performance Reporting, and condition 21: Submissions of Plans, Programs etc in MS 769 and replacement with revised versions of these conditions and the addition of Schedule 3 into MS 769 – approved on 4 May 2012 and defined by Attachment 1 in MS 769.

Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve (MS 800)

There have been four changes to the conditions under s. 46C of the EP Act:

- 1) Amendment to condition 17 of MS 800 by the addition of condition 17.7 which reads “The proponent shall implement the Plan.” – approved on 31 May 2011 and defined by Attachment 6 in MS 800.
- 2) Amendments to conditions 18, 20, and 21 of MS 800 – approved on 8 June 2011 via Ministerial statement 865 (MS 865).
- 3) Deletion of existing condition 23A.3(ix) and replacement with revised version which reads “Decision schemes for evaluating monitoring data against the Environmental Quality Guidelines and Environmental Quality Standards referred to in condition 23A.3 vii. above;” – approved on 25 June 2013 and defined by Attachment 7 in MS 800.
- 4) Deletion of existing condition 26.2 of MS 800 and replacement with a revised version which reads as follows:

“The Proponent must:

- implement all practicable means to inject underground all reservoir CO₂ removed during Gas Processing Operations of the Gas Treatment Plant; and

- ensure that, calculated on a 5 year rolling average commencing on 18 July 2016, at least 80 per cent of reservoir CO₂ removed during Gas Processing Operations of the Gas Treatment Plant that would otherwise be vented to the atmosphere is injected underground.”

The above change was approved on 29 May 2020 via Ministerial statement 1136 (MS 1136).

Gorgon Gas Development Fourth Train Expansion Proposal (MS 1002)

There have been no changes to the conditions under s. 46C of the EP Act.

Gorgon Gas Development – Barrow Island: Additional Construction Laydown and Operations Support Area Project (MS 965)

There have been no changes to the conditions under s. 46C of the EP Act.

2 Requested amendments to the conditions

In February 2022, the Minister for Environment requested that the EPA inquire into and report on the matter of amending the implementation conditions of:

- MS 769 (for the Jansz Feed Gas Pipeline: Barrow Island Nature Reserve)
- MS 800 as amended by MS 865 and MS 1136 (for the Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve)
- MS 1002 (for the Gorgon Gas Development Fourth Train Expansion Proposal) relating to the emission of greenhouse gases.

The Minister for Environment also requested that the EPA inquire into, and report on, the matter of amending the implementation conditions of MS 965 (for the Gorgon Gas Development – Barrow Island: Additional Construction Laydown and Operations Support Area), to ensure that any amendments to MS 800 arising from this inquiry are incorporated into this statement.

This report satisfies the requirements of the EPA's inquiry.

3 Inquiry into amending the conditions

The EPA has discretion as to how it conducts this inquiry. In determining the extent and nature of this inquiry, the EPA had regard to information such as:

- the Environmental, Social, Economic, and Strategic Review of the proposal to locate the Gorgon Gas Development on Barrow Island and resulting Environmental Advice on the Principle of Locating a Gas Processing Complex on Barrow Island Nature Reserve (EPA Bulletin 1101)
- MS 748 for the Gorgon Gas Development: Barrow Island Nature Reserve proposal
- the *Barrow Island Act 2003*
- the currency of EPA's original assessments for the:
 - Jansz Feed Gas Pipeline: Barrow Island Nature Reserve (EPA Bulletin 1278)
 - Gorgon Gas Development Barrow Island Nature Reserve (EPA Bulletin 1221)
 - Gorgon Gas-Development Revised and Expanded Proposal: Barrow Island Nature Reserve (EPA Report 1323)
 - Gorgon Gas Development Fourth Train Expansion (EPA Report 1539)
 - Gorgon Gas Development – Barrow Island: Additional Construction Laydown and Operations Support Area Project (EPA Report 1499)
- subsequent s. 46 inquiries for the Jansz Feed Gas Pipeline: Barrow Island Nature Reserve and the Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve proposals (EPA Report 1394) relating to MS 769 and MS 800, respectively
- MS 769 for the Jansz Feed Gas Pipeline: Barrow Island Nature Reserve
- MS 800, as amended by MS 865, MS 1002, and MS 1136 for the Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve; Gorgon Gas Development Fourth Train Expansion; and Gorgon Gas Development – Barrow Island: Additional Construction Laydown and Operations Support Area Project proposals, respectively
- the proponent's Gorgon Gas Development and Jansz Feed Gas Pipeline: Greenhouse Gas Abatement Program (Chevron 2015) and Gorgon Gas Treatment Plant Greenhouse Gas Management Plan (Chevron 2022)
- any new information on the potential environmental impacts of the proposal.

EPA procedures

The EPA followed the procedures in the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2021* (State of Western Australia 2021) and the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual* (EPA 2021b).

4 Inquiry findings

The EPA considered that greenhouse gas (GHG) emissions is the key environmental factor relevant to the change to the conditions.

4.1 Greenhouse gas emissions

The EPA's environmental objective for GHG emissions is *to reduce net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change* (EPA 2020).

Context – previous assessments, legislation, and existing ministerial statements and conditions

Gorgon Environmental, Social, Economic, and Strategic Review

In 2001, the Western Australian Cabinet agreed to assess the proposed Gorgon development plan at a strategic level to determine whether an in-principle approval for access to Barrow Island could be granted to the Gorgon Joint Venture. The assessment process involved the evaluation of the environmental, social, economic, and State strategic ramifications of the plan, as far as these could be determined at a strategic level based upon the available information. Chevron's Gorgon Environmental, Social, and Economic (ESE) Review document was released for public comment for 6 weeks in 2003.

Three separate assessments were undertaken, and corresponding pieces of advice were prepared:

- An Expert Panel led by the Allen Consulting Group (acting on behalf of the then Department of Industry and Resources (DoIR)) prepared a *Social, Economic and Strategic Bulletin*.
- The EPA provided strategic environmental advice under s. 16(e) of the EP Act on the principle of locating a gas processing complex on Barrow Island Nature Reserve in EPA Bulletin 1101. The EPA stated that: *“Given the very high environmental and unique conservation values of Barrow Island, which are reflected in its status as a class A Nature Reserve, it is the view of the EPA that, as a matter of principle, industry should not be located on a nature reserve and specifically not on Barrow Island.”*
- The Conservation Commission prepared separate advice in its role as the authority in which Barrow Island is vested.

The Standing Inter-agency Advisory Committee (SIAC), composed of departmental heads, prepared an Overview Report to which summaries of the three pieces of advice were attached, which was also released for a 6 week public comment period. At the conclusion of this period, the SIAC prepared confidential advice to Cabinet and on 8 September 2003, Cabinet granted in-principle approval for the location of the Gorgon Gas Development on Barrow Island. The government subsequently passed the *Barrow Island Act 2003*.

Barrow Island Act 2003

The *Barrow Island Act 2003* was specifically passed to enable Barrow Island to be used for a gas processing and infrastructure plant, including the underground disposal of carbon dioxide from gas processing.

The following information was provided during the 2nd reading of the *Barrow Island Bill 2003* on 16 Sept 2003: *“The gas resources in the greater Gorgon area occur in deep water and the gas in the title areas contains a high content of carbon dioxide. For the past 20 years, the Gorgon joint venturers have been trying to find ways of commercialising the Gorgon gas fields and have spent hundreds of millions of dollars to date in that endeavour. In 2001, the Gorgon joint venturers approached the Western Australian Government regarding the possibility of locating a gas processing facility on Barrow Island. The joint venturers see the use of Barrow Island as central to the commercial viability of the title areas and the greater Gorgon area as a whole. The joint venturers are attracted to Barrow Island for gas processing partly because of their desire to dispose of carbon dioxide, contained in the gas reservoir and stripped out during gas processing, by injection thousands of metres underground. They believe Barrow Island offers the only technically and commercially viable site.”*

In response to the 2nd reading of the *Barrow Island Bill 2003*, the then State Opposition stated that: *“A major issue of the Gorgon gas reserves is that they are high in carbon dioxide - greenhouse gas. The Gorgon reserves have, on average, a 12 per cent carbon dioxide content. By comparison, the North-West Shelf reserves have only two to three per cent. The carbon dioxide from the North-West Shelf is vented - it goes into the atmosphere. Three per cent of the gas does not sound much but it is literally millions of tonnes of carbon dioxide each year. To vent 12 per cent of the volume of Gorgon would be an unacceptable addition to Australia’s carbon dioxide emissions.”*

The *Barrow Island Act 2003* and Agreement became the enabling legislation for the proposal. The *Barrow Island Act 2003* requires compliance in all respects with the EP Act.

In accordance with the government’s in-principle decision, the proponent referred the proposal for formal environmental impact assessment under the EP Act. The EPA completed its assessment in June 2006 (EPA Bulletin 1221).

EPA Bulletin 1221

In EPA Bulletin 1221, the EPA concluded that the proposal could not be made environmentally acceptable, including because of likely impacts to flatback turtles, likely impacts of dredging and infrastructure, residual risk of introduction of non-indigenous species to Barrow Island, and risk that subterranean taxa would be lost.

In relation to greenhouse gas emissions, the EPA stated it *“considers the project would be environmentally unacceptable if it did not include a scheme designed to inject a high percentage of the reservoir CO₂ or implement alternative measures to abate the equivalent amount of reservoir CO₂ vented to the atmosphere.”*

Eleven appeals were lodged against the EPA's report and recommendations in Bulletin 1221. Fourteen grounds of appeal were raised in these appeals, one of which related to GHG emissions.

Minister for Environment's reasons for decision on the appeals on the EPA's report and recommendations in Bulletin 1221

The then Minister for Environment's reasons for decision on the appeals on the EPA's report and recommendations in Bulletin 1221 for the Gorgon Gas Development (which recommended against the proposal being implemented) included the following determinations:

- A key consideration for the location of the plant on Barrow Island was the availability of subsurface geology suitable for geosequestration of carbon dioxide. In these circumstances, the Minister believed that the EPA was justified in recommending that geosequestration should be a requirement of any conditions of approval.
- The proponent should be required to design, construct, and operate infrastructure on Barrow Island to geosequester the carbon dioxide from gas processed at the site.
- It was acknowledged that the amount of carbon dioxide injected may be less than the full amount. The Minister expected that the proponent should be required to prepare regular reports on the implementation of the geosequestration activities. In the event that the amount of carbon dioxide injected did not meet a defined level (i.e. where there is a deficit between the amount of carbon dioxide extracted and injected (as determined by the Minister)), the conditions should require the proponent to report to the Minister on what measures it proposes to address or offset the deficit, and how this is proposed to be implemented.
- A separate, further condition should require the proponent to address the remaining greenhouse gas emissions from the plant through the preparation of a Greenhouse Gas Abatement Program.
- The Minister stated that this is an appropriate response having regard to the conservation status of Barrow Island, and noting the importance of government, industry and the community generally maximising opportunities for reducing greenhouse gas emissions.

Ministerial statement 748

MS 748 was issued following the resolution of appeals on EPA Bulletin 1221, to allow the implementation of the proposal subject to conditions 26 and 27 to regulate GHG emissions.

Condition 26 in MS 748 required the design and construction of a carbon dioxide injection system capable of disposing, by underground injection, 100% of the volume of reservoir carbon dioxide to be removed during routine gas processing operations that would otherwise be vented.

Condition 27 in MS 748 required Chevron to prepare a Greenhouse Gas Abatement Program (GHGAP) to achieve ongoing reductions in gas treatment plant emissions and GHG intensity over time, implement thermal efficiency design and operating goals, consider using renewable energy sources such as solar and wind, and adopt a continuous improvement approach so that advances in technology and potential operational improvements are adopted.

The EPA notes that the preamble section of MS 748 includes references to additional proponent undertakings (i.e. in addition to the conditions) which the State required to allow the proposal to go ahead given its significant location.

EPA Report 1323

In this report, the EPA considered the proposal by Chevron Australia Pty Ltd and its joint venture partners to revise and expand the Gorgon LNG development on the Barrow Island nature reserve.

The EPA advised that it supports Chevron's commitment to a higher target and believes that the removal of carbon dioxide from the atmosphere is so important that it recommended that the proponent be requested to periodically update the EPA as to whether increasing the injection rate to 85% within five years of the commencement of operations and to 95% within seven years of the commencement of operations is feasible to achieve.

The EPA recommended that the long duration and high value environment associated with this proposal requires that implementation is executed with the utmost diligence and absolute vigilance.

EPA Report 1323 stated that: "Gas from the Gorgon field is high in carbon dioxide. A fundamental justification by the proponent for using Barrow Island was the need for access to a suitable aquifer beneath the island for long term carbon dioxide storage. The EPA also notes that sequestration of carbon dioxide was a Government requirement for access to Barrow Island for the Gorgon project and that this requirement is contained in binding conditions applied to the approved Gorgon project. If injection and long term storage of carbon dioxide produced with gas that is processed at the Gorgon plant is not achieved (for whatever reason, including the introduction of carbon markets) then the decision to permit gas processing on Barrow Island nature reserve should be reconsidered."

While noting that significant volumes of reservoir carbon dioxide would be stored underground, the EPA also considered that non reservoir residual emissions of the magnitude planned for this proposal should be avoided or offset via appropriate mechanisms consistent with government policy at the time.

Minister for Environment's reasons for decision on the appeals on the EPA's report and recommendations in Bulletin 1323

The then Minister for Environment noted that the EPA had recommended a change to condition 27 for non-reservoir gas requiring consideration of best practice. The

form of condition was considered in the Ministerial section 45 process, and condition 27 was amended to be as it is for MS 800 today.

In deciding the appeals, the then Minister for Environment noted that: *“Given the expected life of the Gorgon project and that changes to greenhouse policy, management measures and scientific knowledge will continue to develop over time, it is reasonable to expect that changes may be required to the Ministerial conditions in the future. In this regard, the Environmental Protection Act already provides mechanisms for amending implementation conditions. The Minister therefore allowed this ground of appeal to the extent that, should it be required, the issue can be dealt with under section 46 of the Act”.*

This current section 46 inquiry is considering appropriate amendments to the implementation conditions relating to the management of GHG emissions for the Gorgon Gas Development on Barrow Island.

Ministerial statement 800

MS 800 was issued following the resolution of appeals on EPA Bulletin 1221, to allow the implementation of the proposal subject to conditions 26 and 27 to regulate GHG emissions.

Condition 27 in MS 800 is a simplified version of condition 27 in MS 748 which Chevron was required to implement.

Schedule 1 in MS 800 includes the following proposal elements for GHG abatement:

- GHG emissions intensity of 0.348 tonnes of CO₂-e per tonne of LNG shipped expected from abatement actions.
- Beyond no regrets measures.
- Adoption of a no routine venting or flaring policy.
- Improved LNG technology, including use of dry compressor and hydrocarbon pump seals; Providing a cold recovery exchanger for the overhead gas from the Nitrogen Rejection Column to allow reuse of overhead gas in the high pressure (HP) fuel gas system; LNG processing trains increased to the maximum capacity that is practicable; A-MDEA selected as the carbon dioxide removal medium; Utilisation of waste heat, such that fired heaters are only required for plant start up.

Section 46 inquiry and MS 1136

In April 2018, the Minister for Environment requested the EPA inquire into and report on condition 26 of MS 800, after it became apparent a clearly defined start point for the commencement of the Carbon Dioxide Injection System needed to be established.

The EPA recommended a new version of condition 26-2 which proposed the starting point for the injection system be the commencement of gas processing operations. The change was approved on 29 May 2020 via Ministerial statement 1136 (MS 1136).

The amended condition meant that under condition 26 of MS 800, the proponent must:

- implement all practicable means to inject underground, all reservoir CO₂ removed during Gas Processing Operations of the Gas Treatment Plant
- ensure that, calculated on a 5 year rolling average commencing on 18 July 2016, at least 80 per cent of reservoir CO₂ removed during Gas Processing Operations of the Gas Treatment Plant that would otherwise be vented to the atmosphere, is injected underground.

The EPA notes that there were no further changes made to the requirements of conditions 26 and 27 in MS 800 and that they are currently applicable to the Gorgon Gas Development on Barrow Island.

Reservoir emissions – injection to date

The EPA notes from the Gorgon CO₂ Injection Project Compliance and Performance Monitoring Report, Year ending December 2021 (DMIRS 2022) that the cumulative quantity of CO₂ injected in the storage reservoir (i.e. the Dupuy Formation) beneath Barrow Island since commencement in August 2019 until December 2021 is approximately 5.3 million tonnes. Table 1 in the above-mentioned report indicates that 779,836 tonnes of CO₂ was injected in 2019, 3,295,044 tonnes of CO₂ was injected in 2020, and 1,321,436 tonnes of CO₂ was injected in 2021.

Chevron has advised that the time taken to safely start and optimise the system has meant that the volume of carbon dioxide injected has been less than the amount available to be injected.

Non-reservoir emissions – GHGAP to date

Chevron's Gorgon Gas Development and Jansz Feed Gas Pipeline GHGAP was approved in May 2015 under the requirements of condition 27.1 of MS 800, as it was considered by the then Minister for Environment to have demonstrated the implementation of best practice at that point in time.

Condition 27.2 of MS 800 additionally required Chevron to periodically review the GHGAP and where practicable, to adopt advances in technology and operational processes aimed at reducing GHG intensity. Section 7.3 of the approved GHGAP states that Chevron may submit an amendment or addendum to the GHGAP where measures are identified to improve it. However, since 2015, no program amendments have been submitted. That is, since 2015, no amendments to the GHGAP have been sought by Chevron to reflect the adoption of advances in technology or operations to reduce GHG intensity or otherwise meet best practice requirements.

Chevron have advised it has implemented some GHG optimisation activities, including retrofitting to route MEG flash vapours to the Gas Treatment Plant inlet facilities, Gas Turbine Performance Improvements, Advanced Process Control systems, Warm Restart Main Cryogenic Heat Exchange cooldown procedures and mobile solar powered lighting towers for night works.

The GHGMP which Chevron submitted for consideration as part of this inquiry, indicates that GHG intensity (tonnes of CO₂-e per tonne of LNG shipped) by financial year (FY) to date has been:

FY2016 – 19.6

FY2017 – 1.14

FY2018 – 0.63

FY2019 – 0.57

FY2020 – 0.43

FY2021 – 0.46.

This is in comparison to schedule 1 of MS 800 which states that a GHG emissions intensity of 0.348 tonnes of CO₂ per tonne of LNG shipped is expected from abatement actions.

Assessment of the requested amendments to conditions

The EPA considers that the *Environmental factor guideline – Greenhouse gas emissions* (EPA 2020) is the current environmental policy and guidance relevant to its inquiry.

In undertaking this inquiry, the EPA has considered the following key questions:

1) Should condition 26 (Reservoir Carbon Dioxide Injection System) and condition 27 (GHGAP for the gas treatment plant) be retained as separate conditions?

The EPA considered the context of this proposal and its approach for other conditions in recently assessed proposals.

The EPA considers that condition 26 should be retained as a standalone reservoir condition given:

- that the ability to inject reservoir emissions beneath Barrow Island was a key consideration for allowing the Gorgon Gas Development to be located on a Class A nature reserve
- the need for the transparency of the injection requirement to be retained
- the need to allow specific issues associated with reservoir injection to be regulated in an organised manner in a single condition
- the distinct subject matter of the conditions, with condition 26 relating to the reservoir carbon dioxide management system, and condition 27 relating to non-reservoir emissions from the processing facilities.

2) Is condition 26 still appropriate to meet the EPA's objectives in relation to the sequestration of reservoir emissions?

The current version of condition 26.1 requires Chevron to design and construct a Reservoir Carbon Dioxide Injection System that is capable of sequestering 100% of the volume of reservoir CO₂ removed during routine gas processing operations by injecting it underground. Chevron's GHGAP states that the Reservoir Carbon Dioxide Injection System that has been constructed is capable of disposing, by underground injection, 100% of the volume of CO₂ to be removed during routine processing operations. Given that Chevron's Reservoir Carbon Dioxide Injection System has been built and is now operational, the EPA considers that the current version of condition 26.1 is no longer required.

Condition 26.2 of MS 800 requires Chevron to sequester at least 80% of the volume of reservoir CO₂ removed during routine gas processing operations based on a rolling 5 year average. The EPA notes that Chevron's current approved GHGAP indicates that it intends to initially inject underground, 80% of reservoir CO₂ emissions, and Chevron's GHGMP submitted for consideration as part of this Section 46 inquiry states that Chevron aims to increase this to 100% in the future.

Chevron have advised the uncertainties associated with the reservoir CO₂ Injection System were outlined in the original environmental assessment for Gorgon and the Minister for Environment's reasons for decision on the EPA's report and recommendations in Bulletin 1221 for the Gorgon Gas Development, and that these uncertainties remain.

Chevron have also advised that injection performance to date is consistent with its initial assessment that it would take a number of years to reach the long run performance target injection rates.

Chevron have advised that further investment will continue to be made in the coming years to improve existing pressure management operations which have encountered limitations in achieving the necessary pressure relief. These improvements are aimed at increasing CO₂ injection rates and further actual abatement.

The EPA has considered whether the requirement for Chevron to inject underground at least 80% of reservoir CO₂ and to aim to inject 100% is still appropriate and has determined that it is, based on the following:

- Chevron's Reservoir Carbon Dioxide Injection System was designed and has been constructed to sequester 100% of the volume of reservoir CO₂.
- Uncertainties about the Reservoir Carbon Dioxide Injection System were raised in the past by Chevron in its appeal on EPA Bulletin 1221 and resolved by the Minister in a way which required Chevron to design and construct a Reservoir Carbon Dioxide Injection System that is capable of sequestering 100% (condition 26.1) and sequester at least 80% of the volume of reservoir CO₂ removed during routine gas processing operations (condition 26.2). The EPA is not aware of any material uncertainties since

the Minister made this decision that would need these requirements to be altered. The EPA understands that issues with the pressure management system which have in part affected the performance of the system to date, have been, or are expected to be resolved. In the meantime, Chevron can address the pressure management issues by reducing the rate of production.

- Injection performance is expected to improve. Performance to date is consistent with Chevron's initial assessment that it would take a number of years to reach the long run performance target injection rates, and future investment will be aimed at increasing carbon dioxide injection rates and further actual abatement.
- The intent of both Chevron and the existing conditions was to move beyond the 80% requirement. This was indicated in EPA Report 1323 which states that: "*The EPA supports the proponent's commitment to a higher target and believes that the removal of carbon dioxide from the atmosphere is so important that the EPA recommends the proponent be requested to periodically update the EPA as to whether increasing the injection rate to 85% within five years of the commencement of operations and to 95% within seven years of the commencement of operations is feasible to achieve.*" The intent to move beyond the 80% requirement is also included in Chevron's approved GHGAP which indicates that it intends to initially inject underground, 80% of reservoir CO₂ emissions, and in Chevron's GHGMP submitted for consideration as part of this Section 46 inquiry which indicates that Chevron aims to increase this to 100% in the future.

The EPA has recommended that condition 26 be amended to make Chevron's obligations clearer. The EPA's suggested amended version of condition 26 reflects the different standard of measures that would be required for Chevron to inject a minimum of 80% of reservoir CO₂ underground and still also seek to achieve 100% injection in the longer term (see Appendix B – Recommended Conditions). It also considers matters around technology availability and geological safety (including subsurface integrity and environmental protection).

The EPA's recommended condition 26 requires the proponent to:

- consider all measures that are necessary to achieve and are reasonably available to implement the injection of 80% of the reservoir CO₂
- implement all practicable means to inject 100% of the reservoir CO₂ and includes considerations of costs.

The EPA advises that its recommended conditions will require Chevron to inject 3.4 Mt of CO₂/year (80% injection requirement) and 4.25 Mt of CO₂/year (if 100% injection is attained). This represents about 4.2% (80% injection requirement) and about 5.2% (if 100% injection is attained) of WA's net GHG emissions in 2020.

The EPA has considered Chevron's suggested changes to the conditions to indicate injection measures should not be disproportionate to their effectiveness, and that the requirement to inject 80% of reservoir CO₂ should be in terms of

requiring best endeavours. The EPA does not believe these are sufficiently clear, objective, or measurable matters to include in the conditions.

The EPA considers that Chevron should be required to provide offsets to account for any shortfall in meeting 100% target injection. The EPA also considers offsets are required to account for any shortfall in meeting the 80% requirements to provide some flexibility if needed to accommodate any practical issues that may arise with the reservoir CO₂ injection system. These requirements are included in the EPA's recommended revised version of condition 26.

The continued use of a 5-year rolling average in condition 26 is not supported by the EPA because:

- it would significantly increase the complexity of the recommended reporting and offset conditions and Chevron's five yearly reporting requirements which increase the difficulty of determining non compliances
- it would result in the compliance periods stipulated in conditions 26 and 27 to be different.

The EPA's amended version of condition 26 includes revised reporting requirements to:

- provide the proponent an opportunity to demonstrate whether they have implemented all measures that are necessary and available, to inject underground at least 80 per cent of reservoir emissions
- ensure consistency with the requirement in the EPA's amended condition 27 for the proponent to prepare and submit a Reservoir Emissions Injection Report to the CEO of the DWER
- include appropriate provisions for reporting of offsets.

3) Is condition 27 still appropriate to meet the EPA's objectives regarding non-reservoir GHG emissions?

The EPA recommends that a revised contemporary version of condition 27 be imposed to address the management of scope 1 non-reservoir emissions.

The recommended condition includes a requirement for GHG emissions reductions to net-zero by 2050 along a straight line trajectory measured in 5 -yearly increments starting from a baseline quantity of 6.073 Mt of CO₂-e/year.

4) Should reservoir and non-reservoir emissions be considered together for the purpose of a trajectory to net zero?

In recommending the trajectory for the reduction of non-reservoir CO₂ emissions, the EPA considered whether it should take the quantity of reservoir CO₂ to be injected underground into account. The EPA determined that it was not appropriate in this case as it is not consistent with fundamental elements of the original decision making process that the proposal be required to inject reservoir CO₂ beneath Barrow Island and be separately required to implement best

practice and adopt advances in technology and operations to reduce other emissions. The EPA notes that original condition 27 in MS 748 shows that extensive additional matters for non-reservoir emissions were expected to be considered on an ongoing basis, that GHG intensity would be reduced over time, and the project would not solely rely on injection to reduce its GHG emissions and GHG emissions intensity.

Chevron submitted that the EPA should take the quantity of reservoir CO₂ to be injected underground into account for the trajectory of non-reservoir CO₂ emissions, for consistency with other recently assessed proposals. The EPA does not consider that this is appropriate because:

- The reservoir CO₂ content associated with the North-West Shelf Project Extension proposal (approximately 2–2.5%) and Pluto emissions (approximately 0.1% from Scarborough) are much smaller than that of the Gorgon Gas Development reservoirs (approximately 14%). The high reservoir CO₂ content of the Gorgon gas warrants requirements for it to be injected and being treated separately to the requirements for non-processing emissions to be reduced.
- The need to inject the high reservoir CO₂ content associated with the Gorgon gas underground was a key element of the proposal which Chevron originally referred and has been implementing. This differentiates it from other proposals with much lower reservoir CO₂ content.
- In determining the appeals on EPA Bulletin 1221 for the Gorgon Gas Development Barrow Island Nature Reserve proposal, the then Minister for Environment decided that:
 - The proponent should be required to design, construct, and operate infrastructure on Barrow Island to geosequester the CO₂ from gas processed at the site.
 - A separate, further condition should require the proponent to address the remaining GHG emissions from the processing plant.
 - The Minister stated that this is an appropriate response having regard to the conservation status of Barrow Island, and noting the importance of government, industry and the community generally maximising opportunities for reducing GHG emissions.

The EPA is not aware of any new information since the then Minister's decision which would alter this view.

- The EPA's inquiry is primarily into whether the EPA's factor objective for GHG is met. This is because:
 - The EPA's factor objective is to reduce emissions
 - Total ongoing GHG emissions from the Gorgon Gas Development are approximately 11.5% of WA's emissions (based on 2020 emissions).

5) What trajectory should be required?

In recent decisions, the EPA has recommended emissions reductions trajectories to net zero by 2050 along a linear trajectory, measured every 5 years.

The EPA considered whether a straight line emissions reduction trajectory commencing from the baseline GHG emissions quantity (excluding the quantity equal to the injection of 100% of reservoir CO₂) is reasonable. The EPA determined that it is, because:

- Chevron's proposed trajectory relies heavily on the injection of reservoir CO₂.
- It is generally consistent with Chevron having already been required to implement best practice and ongoing review and adopt advances in technology and operations for the processing plant as per existing condition 27.2.
- The EPA considered the impact of having the starting point of the trajectory with other possible baselines. Most other possible baselines were less than the baseline which the EPA recommends. The EPA considers that its recommended baseline is a reasonable one, but not the only possible baseline. The EPA selected the baseline in part to ensure that the trajectory starting point, and hence the trajectory itself, would be reasonable.
- The EPA considered the impact of having the starting point of the trajectory as the date of any amended condition. The EPA decided that recommending the trajectory commence in 2025, instead of earlier (such as 2022 or 2023, the likely date of any amended condition) would in part ensure that the trajectory itself would be reasonable.
- Offsets are permitted if Chevron does not meet the trajectory.

The EPA's recommended trajectory is shown in Figure 1 below.

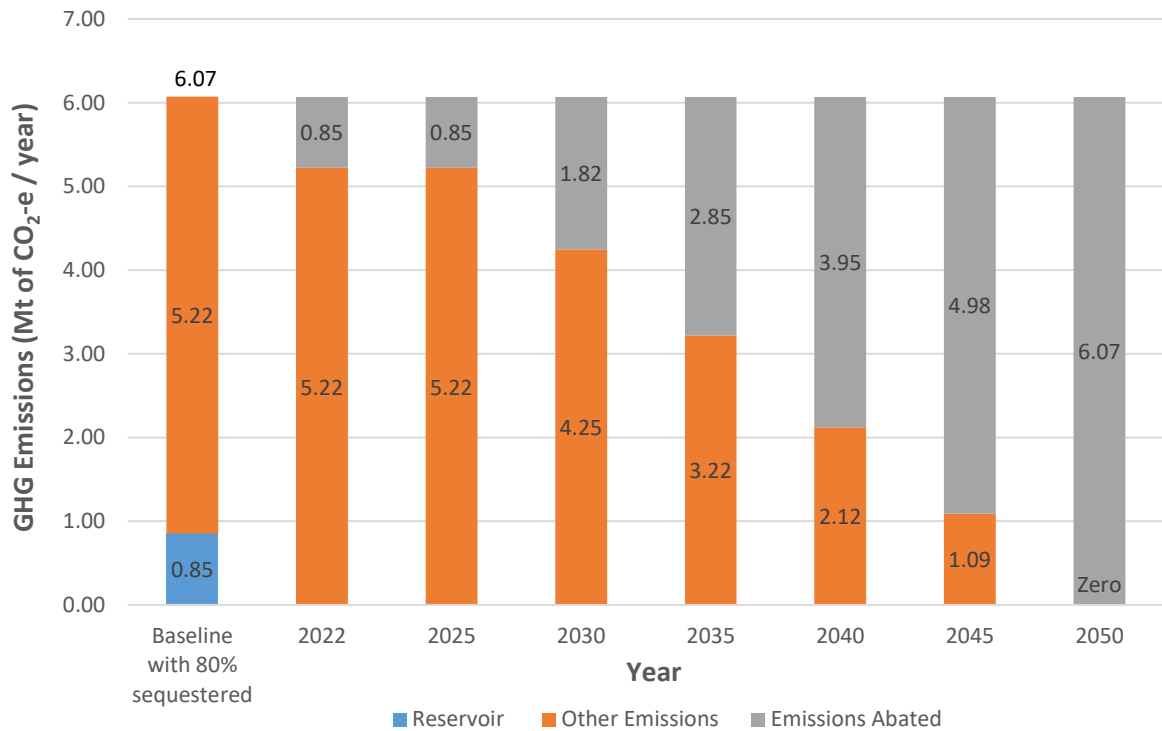


Figure 1: EPA’s recommended GHG emissions reduction trajectory

The EPA notes that Western Australia has committed to a whole-of-government reduction target in GHG emissions of 80% below 2020 levels by 2030. Although this does not apply to non-government operations, as a point of comparison, to achieve this trajectory, Chevron would need to abate a significantly greater quantity of GHG emissions by 2030 than the EPA’s recommended trajectory. If the whole of government emissions target were applied to Chevron’s processing emissions alone, Chevron would be required to reduce emissions by 4.176 Mt of CO₂-e by 2030, rather than 0.97 Mt of CO₂-e under the EPA’s recommended trajectory. If the whole of government emissions target were applied to Chevron’s entire emissions, it would be required to reduce emissions by 7.57 Mt of CO₂-e by 2030.

The EPA considers that the recommended trajectory represents a reasonable contribution to GHG emissions reduction in Western Australia. This is particularly important, given that Chevron’s processing emissions represent approximately 7.4% of WA’s emissions in 2020.

Chevron have submitted that there is significant uncertainty over the most effective means to reduce emissions at LNG facilities over the long term, and that emission reductions will continue to be subject to a number of factors, including the advances in or availability of technology that is practicable for retrofitting to existing plant; the outcomes of ongoing operational improvements; and availability of offsets. The EPA advises that this issue is common to most facilities which are required to reduce GHG emissions in the medium to long term. The EPA’s recommended conditions to require a GHGMP, which is to be

reviewed every 5 years, is the appropriate mechanism to address this uncertainty. The GHG conditions recommended by the EPA require achievement of specific GHG emissions limits but are flexible enough to be able to ensure the GHGMP includes innovation and improvement in best practice technologies.

Chevron have submitted that there are tenure and logistical constraints of operating on a class A nature reserve that mean some reduction techniques are not available. The constraints of Chevron operating on Barrow Island are acknowledged, but the EPA does not consider that they are a certain impediment as:

- Options to improve technology might not all require more land. The EPA notes that the best practice review (below) has shown less efficient options may have been selected and developed as part of the original proposal.
- Additional land has been granted before (up from 300 ha to 332 ha). Whether more could be granted would be a matter for decision making at the time when proposed methods to reduce emissions are more known and proposed under the GHGMP.
- Logistical issues are a commercial matter for the proponent, unless there is a clear known reason why they would prevent emission reductions.
- Given that the decision to approve the proposal on Barrow Island was based on reducing emissions by injection, it would be a potentially perverse outcome if the issues of operating on Barrow Island were now a decisive factor in not reducing emissions. However, these issues will be able to be considered in the future when proposed methods to reduce emissions are more known and proposed under the GHGMP.

Best practice review

To gain a better understanding of whether current best practice technology has been incorporated into the Gorgon Gas Treatment Plant, the EPA commissioned an independent peer review.

The peer review indicated that the use of contemporary best practice process compressor and power generation gas turbines would result in the total non-reservoir GHG emissions from the Gorgon Gas Treatment Plant reducing from 5.22 Mt of CO₂-e / year down to about 3.82 Mt of CO₂-e / year (i.e. 27% less).

The outcomes from the peer review indicate that the thermal efficiency of the 6 existing Frame 7 process compressor gas turbines within the Gorgon Gas Treatment Plant is about 29%. This is less than the current ISO thermal efficiency for a Frame 7E gas turbine of 34% with the difference mainly due to allowances for site conditions and degradation.

Alternative gas turbines such as the H-100 and the LMS100 which have been qualified for LNG mechanical drive service have ISO thermal efficiencies of 57% and 51%, respectively.

The efficiency of the H-100 gas turbine is considered to be a reasonable basis for current best practice. However, taking typical site conditions, inlet and exhaust losses, and degradation into account, the thermal efficiency of a H-100 gas turbine is estimated to be about 33.5% at site conditions.

The use of H-100 gas turbines for the process compressors instead of the Frame 7 units would reduce GHG emissions from 2.35 Mt of CO₂-e / year to 2.18 Mt of CO₂-e / year.

The Gorgon Gas Treatment Plant currently uses 5 Frame 9 gas turbines for power generation which are operated in simple (open) cycle in N + 1 mode (i.e. minimum number to meet power demand plus one operating spare unit).

The peer review indicated that the thermal efficiency of these units is calculated to be about 26% based on available data which is significantly less than the ISO thermal efficiency for a Frame 9 gas turbine of 34%. The difference is likely to be due to site temperature, inlet and exhaust losses, turbine fouling / degradation, and part load operation to manage system load variability which is exacerbated by operation in N + 1 mode.

Current best practice for electrical power supply for LNG plants is either supply from the grid with a portion of this power sourced from renewable sources or a combined cycle power plant.

Given the remoteness of Barrow Island, power from the grid with a renewable power contribution is unlikely to be feasible.

The ISO thermal efficiency of combined cycle power plants is typically above 50%. Although a combined cycle power plant could be feasible, it would most likely result in a higher cost of power compared to using simple (open) cycle gas turbines, depending on the attributed cost of fuel gas. It would also complicate the matching of site load to the number of operating units and would result in worse part load operation if operated in N + 1 mode. Additional space and water treatment facilities would also be required.

The potential use of a combined cycle power plant for electricity generation with a typical ISO thermal efficiency of 54% or about 43.7% on-site with allowances for site conditions and degradation, would reduce GHG emissions from 2.56 Mt of CO₂-e / year to 1.512 Mt of CO₂-e / year.

6) What should the baseline GHG emissions quantity for condition 27 be?

The EPA has considered various potential total baseline GHG emissions quantities for this inquiry including the following:

- Chevron's initial preferred baseline estimate of 9.5 Mt of CO₂-e / year (which includes the injection of 80% of reservoir CO₂ (i.e. 3.4 Mt of CO₂-e / year).
- The EPA's calculated baseline of 9.473 Mt of CO₂-e / year based on 3 LNG trains operating using data from the 2014 PER document about the 3 train

proposal emissions (which includes the injection of 80% of reservoir CO₂ (i.e. 3.4 Mt of CO₂-e / year).

- The baseline in the current GHGMP of 9.473 Mtpa of CO₂-e / year (which includes the injection of 80% of reservoir CO₂ (i.e. 3.4 Mt of CO₂-e / year).
- The NGER Safeguard Mechanism Baseline GHG emissions quantity for the Gorgon Gas Development of 8.34 Mt of CO₂-e / year.
- The baseline quantity of 8.84 Mt of CO₂-e / year calculated from the data in the 2008 PER document for the Gorgon Gas Development Revised and Expanded Proposal.
- A baseline which is based on GHG intensity.
- A baseline based on the best practice review which found that use of contemporary best practice process compressor and power generation gas turbines would result in the total non-reservoir GHG emissions from the Gorgon Gas Treatment Plant reducing from 5.22 Mt of CO₂-e / year down to about 3.82 Mt of CO₂-e / year (i.e. 27% less). (Note these figures do not include reservoir emissions).
- A recommended baseline quantity of 6.073 Mtpa of CO₂-e / year which excludes the injection of 80% of reservoir CO₂ (i.e. 3.4 Mt of CO₂-e / year) given that Chevron should already be injecting at this rate (See Figure 1 above).

The EPA notes that the minor difference between Chevron's preferred baseline of 9.5 Mt of CO₂-e / year and the EPA's calculated baseline of 9.473 Mt of CO₂-e / year is mainly due to minor differences in several estimated emission quantities from plant items such as flares and diesel engines possibly as a result of rounding. Whilst it would be reasonable to use either baseline, the EPA considers that its calculated baseline is the most appropriate to use as it is not influenced by the rounding of figures.

The EPA considers that the NGER Safeguard Mechanism Baseline GHG emissions quantity of 8.34 Mt of CO₂-e / year should not be used as the applicable baseline for as it does not appropriately reflect the annual average forward looking estimates for the total emissions footprint of the facility (gross emissions) and because it was influenced by higher uncertainty on input variables and assumptions which affected the estimated production and emissions outputs.

The EPA has determined that the baseline quantity of 8.836 Mt of CO₂-e / year calculated from the data in the 2008 PER document should not be used by the EPA as it is not the most up to date expected emissions data available.

The use of a GHG intensity baseline was considered for conditions 26 and 27 and for other proposals during the early implementation of the EPA's current GHG Environmental factor guideline. The EPA also advised during the appeal on its Report 1323 that a program to ensure GHG emissions intensity per unit product is equivalent to or better than best practice is the best way to ensure that a new plant is designed and operated taking into account all measures that are

currently possible to lower emissions, and that expressing greenhouse gas efficiency in terms of intensity per unit of product provides a simple metric that allows comparisons between plants.

Since that time, the EPA has usually considered that the conditioning of GHG emissions reduction using GHG emissions intensity is not the most transparent for requiring emissions reductions, and does not allow easy calculation and forecasting of WA wide ongoing emissions and reductions. The EPA therefore usually recommends conditions which refer to absolute emission limits. The EPA considers that its usual approach is also appropriate in this case. Details about intensity are still however required to be included in the GHGMP and ongoing reporting, so comparison of plants and consideration of best practice is still possible.

The EPA also notes that emissions intensity is already included in Schedule 1 of MS 800, which states that an intensity of 0.348 tonnes of CO₂ per tonne of LNG shipped expected from abatement actions. The proponent has not yet achieved this intensity.

The EPA did not consider it reasonable to set a baseline based on current best practice, as the site is an existing brownfields operation and so already has existing facilities in place which it would not be practical to completely replace.

The peer review referred to previously determined that:

- Chevron's initial preferred baseline of 9.5 Mt of CO₂-e / year from the 2014 PER document includes all likely emission sources.
- The EPA's calculated baseline of 9.473 Mt of CO₂-e / year appears to be more accurate due to the influence of rounding errors in Chevron's initial preferred baseline.

Table 1 below illustrates the data that was used by Chevron and the EPA to calculate their respective baselines and reflects the reasons for the differences between the two figures provided by the peer review.

Table 1: Comparison of data used to determine the EPA's and Chevron's baseline GHG emissions quantities

	3 Train emissions based on data in the 2014 Fourth Train PER (Mtpa)	3 Train emissions based on data from Chevron (15 June 2022) (Mtpa)	Difference between 2022 and 2014 figures (Mtpa)
Gas Turbine (Processing Drivers)	2.53	5.1	5.1 – 5.09 = 0.01
Gas Turbine (Power Generation)	2.56		
Fired Heaters	0.01	0.01	0
Flare - Events	0.023	0.1	0.1 – 0.094 = 0.006
Flare - Pilots	0.071		

Fugitive Emissions	0.017	0.02	$0.02 - 0.017 = 0.003$
Diesel Engines	0.012	0.02	$0.02 - 0.012 = 0.008$
Sub-total excluding reservoir CO₂ emissions	5.223	5.25	0.027
20% of reservoir CO ₂ emissions vented	0.85	0.85	0
Total CO₂ emissions vented	6.073	6.1	0.027
80% of reservoir CO ₂ emissions sequestered	3.4	3.4	0
Baseline GHG emissions quantity	9.473	9.5	0.027

The EPA recommends that a baseline GHG emissions quantity of 6.073 Mt of CO₂-e / year (which excludes the injection of 80% of reservoir CO₂ (i.e. 3.4 Mt of CO₂-e / year) is appropriate in this case as it takes into account that Chevron should have already been injecting at least 80% of reservoir CO₂ at this point in time (see Figure 1).

Amendments to other conditions of MS 800

Condition 5.1 of MS 800 requires Chevron to submit an annual Environmental Performance Report to the Minister for Environment which covers the topics listed in conditions 5.2i to 5.2x. These topics include the Carbon Dioxide Injection System and greenhouse gas abatement which are referred to in conditions 5.2vi and 5.2x, respectively.

The EPA considers that it is appropriate that the text “(excluding Item 10iii and 10iv)” currently included in condition 5.1 of MS 800 be deleted, and that conditions 5.2vi and 5.2x of MS 800 also be deleted as the reporting requirements relating to the Carbon Dioxide Injection System and greenhouse gas abatement are adequately addressed within the EPA’s amended versions of conditions 26 and 27.

Amendments to other Ministerial statements

The Minister requested that the EPA inquire into, and report on the amendment of the GHG conditions of Ministerial statements 769, 800, 965, and 1002.

MS 769 does not incorporate the conditions of MS 800, nor does it contain any conditions specifically regulating GHG. The approach that the EPA and the Minister have taken to date for is to impose conditions on the Ministerial statements where GHG emissions are over 100,000 tonnes of CO₂-e / year. On this basis, it was not necessary to impose GHG conditions on MS 769.

MS 965 (for the Additional Construction Laydown and Operations Support Area) incorporates the conditions of MS 800 as amended by MS 865. It is not necessary to update MS 965 so that it includes the new GHG conditions that will be included in

MS 800 given the nature of the Additional Construction Laydown and Operations Support Area proposal and that it is not related to the GHG emissions reduction matters in condition 26 and condition 27.

MS 1002 (for the Gorgon Fourth Train Proposal) incorporates the conditions of MS 800 as amended by MS 865. It therefore also includes the original condition 26 (prior to it being amended by MS 1136). The EPA could recommend that MS 1002 be amended to state that it is subject to the conditions of MS 800 as amended by MS 865, MS 1002, and the new statement that will be issued in response to the EPA's inquiry. However, it is difficult to see how the Gorgon Fourth Train could be accommodated in any new net-zero emissions conditions in MS 800, given that it is not clear when it will commence operation.

Given that it is not clear when the Gorgon Fourth Train will commence operation, the amendment of the GHG conditions of MS 1002 should be done when there is more certainty about when the Gorgon Fourth Train will be constructed so that appropriate emission limits can be included in the new condition.

Other advice

Offsets integrity

The EPA advises that any offsets which may be required to be surrendered at the first reporting period (2025) and then every five years until the proposal is fully implemented, should meet offset integrity principles and be based on clear, enforceable, and accountable methods. The EPA's guidance on GHG emissions (EPA 2020) currently recognises that Australian Carbon Credit Units (ACCUs) issued under the Commonwealth *Carbon Credits (Carbon Farming Initiative) Act 2011* (the Act) as meeting these standards.

ACCUs are administered by the Clean Energy Regulator and assured by the Emissions Reduction Assurance Committee (ERAC), an independent statutory committee which assesses ACCUs compliance against the Offsets Integrity Standards set out in section 113 of the Act. The EPA notes that in response to recent concerns raised about the methodology used to verify some of the ACCUs, the ERAC has conducted a review, and the Commonwealth Government is conducting a further independent review and due to report by 31 December 2022. The EPA considers that by the time any offsets are required to be surrendered under the recommended conditions (2025 at the earliest), there is likely to be sufficient assurance that ACCUs meet the Offsets Integrity Standards set out in section 113 of the Act. If this is not the case, a s. 46 inquiry into the offsets conditions can be initiated.

Scope 3 GHG emissions

Chevron has estimated that based on the transport and third-party end use of LNG, the quantity of scope 3 GHG emissions associated with the Gorgon Gas Development is approximately 49.8 Mt of CO₂-e / year (Chevron 2022). This represents about 61% of Western Australia's total scope 1 GHG emissions in 2020 of 81.7 Mt of CO₂-e / year.

Scope 3 emissions have the same potential to impact on WA environment as scope 1 emissions. The scope 3 emissions associated with the proposal are therefore a substantial contribution to cumulative emissions arising from proposals in WA.

The EPA does not consider that the scope 3 emissions in this case are sufficiently in the proponent's control to recommend a condition to reduce them. The scope of the EPA's current inquiry does not require the EPA to consider whether the Gorgon Gas Development proposal with scope 3 emissions should be recommended to proceed. Therefore, scope 3 emissions are not dealt with further in this inquiry.

The EPA notes however that this proposal also has comparatively high scope 1 emissions, because of the high CO₂ content of the Gorgon gas fields. The EPA advises that in future cases where scope 3 emissions from a proposal are substantial, and the scope 1 emissions are also comparatively high, the EPA may consider whether the proposal should be recommended to proceed.

5 Conclusions and recommendations

Amendment to condition 26

The EPA considers that it is appropriate to change condition 26 of MS 800 so that it reflects that 100% of reservoir CO₂ emissions should be injected underground using the established Reservoir Carbon Dioxide Injection System where practicable, and that all measures necessary to achieve the injection of 80% of reservoir CO₂ emissions should be implemented, and any remaining volume of reservoir CO₂ that is not injected underground is offset using authorised offsets.

Amendment to condition 27

The EPA considers it is appropriate to change condition 27 of MS 800 in order to make it consistent with contemporary EPA recommended conditions on the management of GHG emissions, particularly in regard to requiring the proponent to commence a straight line GHG emissions reduction trajectory in 2025 to achieve net-zero GHG emissions by 2050. The EPA considered the original requirements for continuous improvement and best practice as a part of these conditions.

The EPA considered the proponent's submission that the baseline for the GHG emissions reduction trajectory should include reservoir and non-reservoir emissions, consistent with some other recent EPA decisions. The EPA does not consider this is appropriate in this case as the reservoir CO₂ content associated with the North-West Shelf Project Extension proposal (approximately 2–2.5%) and Pluto LNG facility emissions (approximately 0.1% from Scarborough) are much smaller than that of the Gorgon Gas Development reservoirs (approximately 14%). The high reservoir CO₂ content of the Gorgon gas warrants requirements for it to be injected and being treated separately to the requirements for non-processing emissions to be reduce.

Amendments to other conditions of MS 800

The EPA considers that it is appropriate that the text “(excluding Item 10iii and 10iv)” currently included in condition 5.1 of MS 800 be deleted, and that conditions 5.2vi and 5.2x of MS 800 also be deleted as the reporting requirements relating to the Carbon Dioxide Injection System and greenhouse gas abatement are adequately addressed within the EPA's amended versions of conditions 26 and 27.

Amendments to other Ministerial statements

MS 769 does not incorporate the conditions of MS 800, nor does it contain any conditions specifically regulating GHG. On this basis, the EPA considers that it was not necessary to impose GHG conditions on MS 769.

The EPA has determined that it is not necessary to update MS 965 so that it includes the new GHG conditions that will be included in MS 800 given the nature of the Additional Construction Laydown and Operations Support Area proposal and that it is not related to the GHG emissions reduction matters in condition 26 and condition 27.

Given that it is not clear when the Gorgon Fourth Train will commence operation, the EPA considers that the amendment of the GHG conditions of MS 1002 should be done when there is more certainty about when the Gorgon Fourth train will be constructed so that appropriate emission limits can be included in the new condition.

Conclusions

In relation to the environmental factors, and considering the information provided by the proponent and relevant EPA policies and guidelines, the EPA concludes that:

- The key considerations for the location of the LNG plant on Barrow Island and the high carbon dioxide content of the reservoir emissions provide a different context to the management of greenhouse gas emissions, when compared to other plants
- impacts to the key environmental factor are considered manageable, based on the requirements of the original conditions retained in MS 800, as amended by MS 865, MS 1002, and MS 1136, and the imposition of the attached recommended conditions (Appendix B).

Recommendations

Having inquired into this matter, the EPA submits the following recommendations to the Minister for Environment under s. 46 of the EP Act:

1. While retaining the environmental requirements of the original conditions of MS 800, as amended by MS 865, MS 1002, and MS 1136, it is appropriate to delete existing implementation conditions 5, 26, and 27 and replace them with new revised versions.
2. That the Minister notes that the EPA has determined that MS 769 and MS 965 are not relevant to this inquiry, and they contain no implementation conditions relating to the management of GHG emissions.
3. After complying with s. 46(8) of the EP Act, the Minister may issue a statement of decision to change conditions 5, 26, and 27 of MS 800 in the manner provided for in the attached recommended statement (Appendix B).

Appendix A: Assessment of proposed amendments to implementation conditions of Ministerial statement 800

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
Ministerial statement 800			
5	Environmental Performance Reporting	<p>5. Environmental Performance Reporting</p> <p>5.1 The Proponent shall submit annually to the Minister an Environmental Performance Report covering the topics listed in Condition 5.2, and the specific details shown in Schedule 3 (excluding Item 10 iii and 10 iv), covering the previous 12 month period as determined by the Minister. The date of the first Environmental Performance Report (the Report) shall be 15 months from the date this Statement with each subsequent report 12 months from the date of the previous report.</p> <p>5.2 The Report shall cover the following topics:</p> <ul style="list-style-type: none"> i. Terrestrial and subterranean environment state; ii. Terrestrial and marine quarantine (including weed management); iii. Marine turtles (including light and noise management iv. Short range endemics and subterranean fauna; v. Fire management; vi. Carbon Dioxide Injection System; vii. Air quality; viii. Coastal stability; 	<p>The EPA considers that it is appropriate that the text “(excluding Item 10 iii and 10 iv)” currently included in condition 5.1 of MS 800 be deleted, and conditions 5.2vi and 5.2x of MS 800 be deleted as the reporting requirements relating to the Carbon Dioxide Injection System and greenhouse gas abatement are adequately addressed within the EPA’s amended versions of conditions 26 and 27.</p>

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<ul style="list-style-type: none"> ix. Terrestrial rehabilitation; and x. Greenhouse gas abatement. 	
26	Greenhouse gas emissions	<p>26 Reservoir Carbon Dioxide Injection System</p> <p>26.1 The proponent must:</p> <ul style="list-style-type: none"> xi. implement all practicable means to inject underground all Reservoir Carbon Dioxide; xii. implement all measures that are necessary to achieve, and which are reasonably available and/or able to be implemented, the injection underground of at least 80 per cent of Reservoir Carbon Dioxide during the periods referred to in condition 26.2, which includes: <ul style="list-style-type: none"> a. the ongoing investigation of any constraints associated with injecting Reservoir Carbon Dioxide into the Dupuy geological formation; b. the adoption of technologies that are reasonably available to be safely adopted; c. maintaining the Reservoir Carbon Dioxide Injection System in good working order, <p>and which, for the avoidance of doubt:</p>	<p>The proposed revised condition will reflect the EPA’s current policy position that 100% of reservoir CO₂ emissions should be injected underground using the established Reservoir Carbon Dioxide Injection System where possible, and any remaining volume of reservoir CO₂ that is not injected underground is offset using Authorised Offsets.</p>

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<p>d. does not require the implementation of a measure that would result in non-compliance with another condition of this Statement.</p> <p>26.2 The following periods apply for the purposes of condition 26.1ii:</p> <p>i. the period commencing on the date of this Statement and ending 30 June 2025; and</p> <p>ii. every following five year period until the proposal is fully implemented.</p> <p>26.3 The proponent will not be taken to have complied with condition 26.1i or condition 26.1ii for a particular period unless it has provided to the CEO a report for the relevant period as required by condition 27.3(1).</p> <p>26.4 The proponent must offset the quantity of Reservoir Carbon Dioxide that were not injected underground.</p> <p>26.5 For the purposes of condition 26.4, Reservoir Carbon Dioxide are offset for a period by the quantity of GHG Emissions represented by:</p> <p>i. the amount of Authorised Offsets that meet the Timing and Reporting Requirements; and/or</p> <p>ii. the amount of Non-Reservoir GHG Emissions that have been avoided or reduced through a Certified Improvement.</p>	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
27	Greenhouse gas emissions	<p>27 Greenhouse Gas Management Plan</p> <p>27.1 Subject to condition 27.2, the proponent shall take measures to ensure that Net GHG Emissions do not exceed:</p> <ul style="list-style-type: none"> i. 5,220,000 tonnes of CO₂-e / year for the period until 30 June 2030; ii. 4,250,000 tonnes of CO₂-e / year for the period between 1 July 2030 and 30 June 2035; iii. 3,220,000 tonnes of CO₂-e / year for the period between 1 July 2035 and 30 June 2040; iv. 2,120,000 tonnes of CO₂-e / year for the period between 1 July 2040 and 30 June 2045; v. 1,090,000 tonnes of CO₂-e / year for the period between 1 July 2045 and 30 June 2050; and in any event; and vi. zero tonnes of CO₂-e / year for every five year period from 1 July 2050 onwards. <p>27.2 The Proponent shall submit a report to the CEO each year by 31 March, commencing on the first 31 March after the date of this Statement, verifying for the previous financial year:</p> <ul style="list-style-type: none"> i. the quantity of Proposal GHG Emissions, Reservoir Carbon Dioxide, and Non-Reservoir GHG Emissions; 	<p>The proposed revised condition will reflect the EPA's current policy position that proponents should be required to implement deep and substantial reductions in their GHG emissions on a trajectory which achieves net-zero GHG emissions by 2050 consistent with contemporary community expectations and State and Federal requirements.</p> <p>In this case, the EPA considers that its recommended GHG emissions baseline quantity and GHG emissions reduction trajectory will ensure that these goals are achieved.</p>

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<ul style="list-style-type: none"> ii. the quantity of Reservoir Carbon Dioxide that has been injected underground in accordance with condition 26; iii. the number of terajoules of gas processed at the proposal facility; iv. the number of terajoules of gas produced from the proposal facility determined in accordance with NGER Item 30(1); and v. Proposal GHG Emissions Intensity and Non-Reservoir GHG Emissions Intensity, including calculations and calculation methodology for each. <p>27.3 The Proponent shall submit to the CEO by 31 March 2026, and every fifth 31 March thereafter:</p> <ul style="list-style-type: none"> (1) a consolidated report specifying: <ul style="list-style-type: none"> (a) for each of the preceding five (5) financial years, the matters referred to in conditions 27.2i to 27.2v; (b) for the period comprising five (5) financial years which ended on 30 June in the year before the report is due: <ul style="list-style-type: none"> i. the quantity of Reservoir Carbon Dioxide that has been injected underground in accordance with condition 26; 	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<ul style="list-style-type: none"> <li data-bbox="920 280 1581 507">ii. the amount of Non-Reservoir GHG Emissions that have been avoided or reduced through a Certified Improvement, including describing the Certified Improvement that caused the avoidance or reduction; <li data-bbox="920 544 1532 770">iii. the type, quantity, identification or serial number, and date of retirement or cancellation of any Authorised Offsets which have been retired or cancelled, including written evidence of such retirement or cancellation; <li data-bbox="920 807 1565 954">iv. the progress towards meeting the interim and long-term reduction targets for Proposal GHG Emissions as specified in the Greenhouse Gas Management Plan; <li data-bbox="920 991 1576 1094">v. any measures that have been implemented to avoid or reduce Proposal GHG Emissions; <li data-bbox="920 1131 1476 1198">vi. identifies any shortfall in injection of Reservoir Carbon Dioxide; <li data-bbox="920 1235 1505 1340">vii. identifies the periods when Reservoir Carbon Dioxide were not injected underground, and the corresponding 	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<p>quantities that were not injected underground during those periods;</p> <p>viii. identifies, quantifies, and establishes the shortfall that complies with conditions 26.1i and 26.1ii and identifies and justifies the reasons why the shortfall complies;</p> <p>ix. identifies any additional measures that could be implemented in the future to ensure that at least 80 per cent of Reservoir Carbon Dioxide is injected underground (if any) and the timeframe for implementation of those measures; and</p> <p>x. contains recorded data sets from which the information referred to in Conditions 27.3(1)i to viii was derived in Excel format or some other format approved by the CEO.</p> <p>(2) a report of a peer review carried out by an independent person or independent persons with suitable technical expertise to review the matters referred to in Conditions 27.3(1)i to x which includes a review of the suitability of the methodology used to review the matters set out in the report, whether the report is accurate and whether the report is supported by any credible evidence.</p>	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<p>(3) a report if the proponent has not injected underground 80 per cent of Reservoir Carbon Dioxide that:</p> <ul style="list-style-type: none"> i. specifies the measures it implemented to comply with condition 26.1; ii. why those steps were insufficient to ensure that 80% of Reservoir Carbon Dioxide was injected underground for the relevant period; iii. any additional measures that could be taken into the future to ensure at least 80 per cent of Reservoir Carbon Dioxide is injected underground; and iv. which of the measures in condition iii the proponent intends to take and a timeframe for the taking of those measures. <p>(4) a report of a peer review carried out by an independent person or independent persons with suitable technical expertise to review the matters referred to in 27.3(3)i to iii.</p> <p>27.4 Subject to, and to the extent that it is consistent with the achievement of the limits in, or the achievement of emissions reductions beyond those required by condition 27.1 or condition 27.2, the proponent shall implement:</p>	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<ul style="list-style-type: none"> i. The Gorgon Gas Treatment Plant Greenhouse Gas Management Plan (ABU220200238, Revision 2.0) dated 17 August 2022; or ii. if that plan has been revised, the latest version of the plan that the CEO has confirmed in writing meets the requirements of condition 27.7. <p>27.5 A summary document comprising of a summary plan and progress statement outlining key information from the Greenhouse Gas Management Plan (and reports to that time) must be submitted to the CEO every five years as per condition 27.3 and also if the Greenhouse Gas Management Plan is revised under condition 27.6. The summary must include:</p> <ul style="list-style-type: none"> (a) a graphical comparison of Proposal GHG Emissions reduction commitments in the Greenhouse Gas Management Plan to achieve the required reduction in Proposal GHG Emissions by 2030 and net-zero Proposal GHG Emissions by 2050 with 'actual' Proposal GHG Emissions for compliance periods; (b) proposal performance against benchmarking for comparable facilities; (c) Proposal GHG Emissions Intensity and Non-Reservoir GHG Emissions Intensity; 	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<p>(d) a summary of emission reduction measures undertaken by the proponent; and</p> <p>(e) a clear statement as to whether interim targets have been achieved.</p> <p>27.6 The proponent:</p> <p>(a) may revise a Greenhouse Gas Management Plan at any time;</p> <p>(b) must revise the Greenhouse Gas Management Plan if there is a change to the proposal which means that there is a material risk that condition 27.1 will not be achieved;</p> <p>iii. must revise the Greenhouse Gas Management Plan at least every five years to align with the five yearly reporting requirements specified in condition 27.3; and</p> <p>iv. must revise a Greenhouse Gas Management Plan if directed to by the CEO, within the time specified by the CEO;</p> <p>v. must revise the Gorgon Gas Treatment Plant Greenhouse Gas Management Plan (ABU220200238, Revision 2.0) dated 17 August 2022 as required by condition 27.7; and</p> <p>vi. with any revision, must prepare a summary of the Greenhouse Gas Management Plan which includes a summary of the matters in condition 27.7.</p>	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<p>27.7 Within 6 months of the date of this Statement, the proponent shall submit a revised Greenhouse Gas Management Plan referred to in condition 27.6 to the CEO that:</p> <ul style="list-style-type: none"> (a) is consistent with the achievement of the limits in, or the achievement of emissions reductions beyond those required by condition 27.1, and with the other requirements of condition 27; (b) specifies the estimated Proposal GHG Emissions, Reservoir Carbon Dioxide, Non-Reservoir GHG Emissions, Proposal GHG Emissions Intensity and Non-Reservoir GHG Emissions Intensity for the remainder of the life of the proposal; (c) includes comparison of each of the estimated Proposal GHG Emissions and Proposal GHG Emissions Intensity figures referred to in condition 27.7(ii) for the remainder of the life of the proposal against other comparable projects; (d) specifies the estimated number of terajoules of gas to be processed at the proposal facility for the remainder of the life of the proposal; (e) specifies the estimated number of terajoules of gas to be produced at the proposal facility as determined in accordance with NGER Item 30(1) for the remainder of the life of the proposal; 	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<p>(f) includes where practicable, the adoption of advances in technology and operational processes that the proponent will implement to avoid, reduce and/or offset Proposal GHG Emissions, Reservoir Carbon Dioxide or Non-Reservoir GHG Emissions, and/or reduce Proposal GHG Emissions Intensity;</p> <p>(g) specifies interim and long-term targets for avoiding, reducing and/or offsetting Proposal GHG Emissions; and</p> <p>(h) provides for a program for the future review of the plan to:</p> <ul style="list-style-type: none"> i. assess the effectiveness of the advances in technology and operational processes referred to in condition 27.7(vi); and ii. identify and describe options for future advances in technology and operational processes that the proponent may or could implement to avoid, reduce and/or offset Proposal GHG Emissions, Reservoir Carbon Dioxide or Non-Reservoir GHG Emissions, and/or reduce Proposal GHG Emissions Intensity. <p>27.8 For the life of the proposal, the proponent shall make all Greenhouse Gas Management Plans and the reports (including summary plans and progress statements) publicly available within the specified timeframes on the proponent's website for the life of</p>	

Ministerial condition	Environmental factor	Proposed amendment	Assessment and evaluation of proposed amendment
		<p>the proposal, or in any other manner specified by the CEO, within a time specified by the CEO:</p> <ul style="list-style-type: none"> (a) the Greenhouse Gas Management Plan referred to in condition 27.4(i) within two (2) weeks of the issue of the Statement; (b) the revised Greenhouse Gas Management Plan referred to in condition 27.7 and summary plan referred to in condition 27.6.vi within two (2) weeks of receiving confirmation from the CEO as referred to in condition 27.4(ii) (c) the report referred to in condition 27.2 within two (2) weeks of submitting a relevant report to the CEO; (d) the reports, summary plans and progress statements referred to in conditions 27.3 and 27.5 within two (2) weeks of submitting the relevant reports, summary statements and progress reports to the CEO; and (e) any revised Greenhouse Gas Management Plan referred to in condition 27.6 and the summary plan referred to in condition 27.6.vi within two (2) weeks of receiving confirmation from the CEO as referred to in condition 27.4(ii). 	

Appendix B: Recommended conditions

STATEMENT TO AMEND THE IMPLEMENTATION CONDITIONS APPLYING TO A PROPOSAL (Section 46 of the *Environmental Protection Act 1986*)

GORGON GAS DEVELOPMENT REVISED AND EXPANDED PROPOSAL: BARROW ISLAND NATURE RESERVE

Proposal: The construction of facilities for the development of the Greater Gorgon Gas Fields on the North-West Shelf, and the processing and export of the gas at a liquefied natural gas plant to be constructed on Barrow Island, as more generally described in the Draft Environmental Impact Statement / Environmental Review and Management Programme for the Proposed Gorgon Development, the Final Environmental Impact Statement/ Response to Submissions on the Environmental Review and Management Programme; as amended under Section 45C; and as expanded and revised in the Public Environmental Review for the Gorgon Gas Development Revised and Expanded Proposal and the Response to Submissions: Gorgon Gas Development Revised and Expanded Proposal, Public Environmental Review.

Proponent: Chevron Australia Pty Ltd
Australian Company Number: 086 197 757

Proponent address: QV1 Building, 250 St Georges Terrace, Perth WA 6000

Report of the Environmental Protection Authority: 1729

Preceding Statement/s relating to this proposal: 748, 769, 800, 865, 965, 1002, and 1136

Pursuant to Section 45 of the *Environmental Protection Act 1986*, as applied by section 46(8), it has been agreed that the implementation conditions set out in Ministerial Statement No. 800, be amended as specified in this Statement.

Condition 5 of Ministerial Statement 800 is deleted and replaced with:

5 Environmental Performance Reporting

5.1 The Proponent shall submit annually to the Minister an Environmental Performance Report covering the topics listed in condition 5.2, and the specific details shown in Schedule 3, covering the previous 12-month period as

determined by the Minister. The date of the first Environmental Performance Report (the Report) shall be fifteen (15) months from the date this Statement with each subsequent report twelve (12) months from the date of the previous report.

5.2 The Report shall cover the following topics:

- (a) Terrestrial and subterranean environment state;
- (b) Terrestrial and marine quarantine (including weed management);
- (c) Marine turtles (including light and noise management
- (d) Short range endemics and subterranean fauna;
- (e) Fire management;
- (f) Air quality;
- (g) Coastal stability; and
- (h) Terrestrial rehabilitation.

Condition 26 of Ministerial Statement 800 is deleted and replaced with:

26 Reservoir Carbon Dioxide Injection System

26.1 The proponent must:

- (a) implement all practicable means to inject underground all **Reservoir Carbon Dioxide**;
- (b) implement all measures that are necessary to achieve, and which are reasonably available and/or able to be implemented, the injection underground of at least 80 per cent of **Reservoir Carbon Dioxide** during the periods referred to in condition 26.2, which includes:
 - i. the ongoing investigation of any constraints associated with injecting **Reservoir Carbon Dioxide** into the Dupuy geological formation;
 - ii. the adoption of technologies that are reasonably available to be safely adopted;
 - iii. maintaining the **Reservoir Carbon Dioxide Injection System** in good working order,

and which, for the avoidance of doubt:

- iv. does not require the implementation of a measure that would result in non-compliance with another condition of this Statement.

26.2 The following periods apply for the purposes of condition 26.1ii:

- (a) the period commencing on the date of this Statement and ending 30 June 2025; and
- (b) every following five (5) year period until the proposal is fully implemented.

26.3 The proponent will not be taken to have complied with condition 26.1i or condition 26.1ii for a particular period unless it has provided to the CEO a report for the relevant period as required by condition 27.3(1).

26.4 The proponent must offset the quantity of **Reservoir Carbon Dioxide** that were not injected underground.

26.5 For the purposes of condition 26.4, **Reservoir Carbon Dioxide** are offset for a period by the quantity of **GHG Emissions** represented by:

- (a) the amount of **Authorised Offsets** that meet the **Timing and Reporting Requirements**; and/or
- (b) the amount of **Non-Reservoir GHG Emissions** that have been avoided or reduced through a **Certified Improvement**.

Condition 27 of Ministerial Statement 800 is deleted and replaced with:

27 Greenhouse Gas Management Plan

27.1 Subject to condition 27.2, the proponent shall take measures to ensure that **Net GHG Emissions** do not exceed:

- (a) 5,220,000 tonnes of CO₂-e / year for the period until 30 June 2030;
- (b) 4,250,000 tonnes of CO₂-e / year for the period between 1 July 2030 and 30 June 2035;
- (c) 3,220,000 tonnes of CO₂-e / year for the period between 1 July 2035 and 30 June 2040;
- (d) 2,120,000 tonnes of CO₂-e / year for the period between 1 July 2040 and 30 June 2045;
- (e) 1,090,000 tonnes of CO₂-e / year for the period between 1 July 2045 and 30 June 2050; and in any event; and
- (f) zero tonnes of CO₂-e / year for every five year period from 1 July 2050 onwards.

27.2 The proponent shall submit a report to the CEO each year by 31 March, commencing on the first 31 March after the date of this Statement, verifying for the previous financial year:

- (a) the quantity of **Proposal GHG Emissions, Reservoir Carbon Dioxide, and Non-Reservoir GHG Emissions**;
- (b) the quantity of **Reservoir Carbon Dioxide** that has been injected underground in accordance with condition 26;
- (c) the number of terajoules of gas processed at the proposal facility;
- (d) the number of terajoules of gas produced from the proposal facility determined in accordance with **NGER Item 30(1)**; and
- (e) **Proposal GHG Emissions Intensity** and **Non-Reservoir GHG Emissions Intensity**, including calculations and calculation methodology for each.

27.3 The proponent shall submit to the CEO by 31 March 2026, and every fifth 31 March thereafter:

- (1) a consolidated report specifying:
 - (b) for each of the preceding five (5) financial years, the matters referred to in conditions 27.2i to 27.2v;
 - (c) for the period comprising five (5) financial years which ended on 30 June in the year before the report is due:
 - i. the quantity of **Reservoir Carbon Dioxide** that has been injected underground in accordance with condition 26;
 - ii. the amount of **Non-Reservoir GHG Emissions** that have been avoided or reduced through a **Certified Improvement**, including describing the **Certified Improvement** that caused the avoidance or reduction;
 - iii. the type, quantity, identification or serial number, and date of retirement or cancellation of any **Authorised Offsets** which have been retired or cancelled, including written evidence of such retirement or cancellation;
 - iv. the progress towards meeting the interim and long-term reduction targets for **Proposal GHG Emissions** as specified in the **Greenhouse Gas Management Plan**;

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- v. any measures that have been implemented to avoid or reduce **Proposal GHG Emissions**;
 - vi. identifies any shortfall in injection of **Reservoir Carbon Dioxide**;
 - vii. identifies the periods when **Reservoir Carbon Dioxide** was not injected underground, and the corresponding quantities that was not injected underground during those periods;
 - viii. identifies, quantifies, and establishes the shortfall that complies with conditions 26.1i and 26.1ii and identifies and justifies the reasons why the shortfall complies;
 - ix. identifies any additional measures that could be implemented in the future to ensure that at least 80 per cent of **Reservoir Carbon Dioxide** is injected underground (if any) and the timeframe for implementation of those measures; and
 - x. contains recorded data sets from which the information referred to in Conditions 27.3(1)i to viii was derived in Excel format or some other format approved by the CEO.
- (2) a report of a peer review carried out by an independent person or independent persons with suitable technical expertise to review the matters referred to in Conditions 27.3(1)i to x which includes a review of the suitability of the methodology used to review the matters set out in the report, whether the report is accurate and whether the report is supported by any credible evidence.
- (3) a report if the proponent has not injected underground 80 per cent of **Reservoir Carbon Dioxide** that:
- i. specifies the measures it implemented to comply with condition 26.1;
 - ii. why those steps were insufficient to ensure that 80 per cent of **Reservoir Carbon Dioxide** was injected underground for the relevant period;
 - iii. any additional measures that could be taken into the future to ensure at least 80 per cent of **Reservoir Carbon Dioxide** is injected underground; and

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- iv. which of the measures in condition iii the proponent intends to take and a timeframe for the taking of those measures.
- (4) a report of a peer review carried out by an independent person or independent persons with suitable technical expertise to review the matters referred to in 27.3(3)i to iii.
- 27.4 Subject to, and to the extent that it is consistent with the achievement of the limits in, or the achievement of emissions reductions beyond those required by condition 27.1 or condition 27.2, the proponent shall implement:
- (a) The Gorgon Gas Treatment Plant Greenhouse Gas Management Plan (ABU220200238, Revision 2.0) dated 17 August 2022; or
- (b) if that plan has been revised, the latest version of the plan that the CEO has confirmed in writing meets the requirements of condition 27.7.
- 27.5 A summary document comprising of a summary plan and progress statement outlining key information from the **Greenhouse Gas Management Plan** (and reports to that time) must be submitted to the CEO every five (5) years as per condition 27.3 and also if the **Greenhouse Gas Management Plan** is revised under condition 27.6. The summary must include:
- (a) a graphical comparison of **Proposal GHG Emissions** reduction commitments in the **Greenhouse Gas Management Plan** to achieve the required reduction in **Proposal GHG Emissions** by 2030 and net-zero **Proposal GHG Emissions** by 2050 with ‘actual’ **Proposal GHG Emissions** for compliance periods;
- (b) proposal performance against benchmarking for comparable facilities;
- (c) Proposal GHG Emissions Intensity and Non-Reservoir GHG Emissions Intensity;
- (d) a summary of emission reduction measures undertaken by the proponent; and
- (e) a clear statement as to whether interim targets have been achieved.
- 27.6 The proponent:
- (a) may revise a **Greenhouse Gas Management Plan** at any time;
- (b) must revise the **Greenhouse Gas Management Plan** if there is a change to the proposal which means that there is a material risk that condition 27.1 will not be achieved;

- (c) must revise the **Greenhouse Gas Management Plan** at least every five years to align with the five (5) yearly reporting requirements specified in condition 27.3;
- (d) must revise a **Greenhouse Gas Management Plan** if directed to by the CEO, within the time specified by the CEO;
- (e) must revise the Gorgon Gas Treatment Plant Greenhouse Gas Management Plan (ABU220200238, Revision 2.0) dated 17 August 2022 as required by condition 27.7; and
- (f) with any revision, must prepare a summary of the **Greenhouse Gas Management Plan** which includes a summary of the matters in condition 27.7.

27.7 Within six (6) months of the date of this Statement, the proponent shall submit a revised **Greenhouse Gas Management Plan** referred to in condition 27.6 to the CEO that:

- (a) is consistent with the achievement of the limits in, or the achievement of emissions reductions beyond those required by condition 27.1, and with the other requirements of condition 27;
- (b) specifies the estimated **Proposal GHG Emissions, Reservoir Carbon Dioxide, Non-Reservoir GHG Emissions, Proposal GHG Emissions Intensity** and **Non-Reservoir GHG Emissions Intensity** for the remainder of the life of the proposal;
- (c) includes comparison of each of the estimated **Proposal GHG Emissions** and **Proposal GHG Emissions Intensity** figures referred to in condition 27.7(ii) for the remainder of the life of the proposal against other comparable projects;
- (d) specifies the estimated number of terajoules of gas to be processed at the proposal facility for the remainder of the life of the proposal;
- (e) specifies the estimated number of terajoules of gas to be produced at the proposal facility as determined in accordance with **NGER Item 30(1)** for the remainder of the life of the proposal;
- (f) includes where practicable, the adoption of advances in technology and operational processes that the proponent will implement to avoid, reduce, and/or offset **Proposal GHG Emissions, Reservoir Carbon Dioxide** or **Non-Reservoir GHG Emissions**, and/or reduce **Proposal GHG Emissions Intensity**;

- (g) specifies interim and long-term targets for avoiding, reducing and/or offsetting **Proposal GHG Emissions**; and
- (h) provides for a program for the future review of the plan to:
 - i. assess the effectiveness of the advances in technology and operational processes referred to in condition 27.7(vi); and
 - ii. identify and describe options for future advances in technology and operational processes that the proponent may or could implement to avoid, reduce and/or offset **Proposal GHG Emissions, Reservoir Carbon Dioxide or Non-Reservoir GHG Emissions**, and/or reduce **Proposal GHG Emissions Intensity**.

27.8 For the life of the proposal, the proponent shall make all **Greenhouse Gas Management Plans** and the reports (including summary plans and progress statements) publicly available within the specified timeframes on the proponent's website for the life of the proposal, or in any other manner specified by the CEO, within a time specified by the CEO:

- (a) the **Greenhouse Gas Management Plan** referred to in condition 27.4(i) within two (2) weeks of the issue of the Statement;
- (b) the revised **Greenhouse Gas Management Plan** referred to in condition 27.7 and summary plan referred to in condition 27.6.vi within two (2) weeks of receiving confirmation from the CEO as referred to in condition 27.4(ii);
- (c) the report referred to in condition 27.2 within two (2) weeks of submitting a relevant report to the CEO;
- (d) the reports, summary plans and progress statements referred to in conditions 27.3 and 27.5 within two (2) weeks of submitting the relevant reports, summary statements and progress reports to the CEO; and
- (e) any revised **Greenhouse Gas Management Plan** referred to in condition 27.6 and the summary plan referred to in condition 27.6.vi within two (2) weeks of receiving confirmation from the CEO as referred to in condition 27.4(ii).

Abbreviations and definitions

Acronym or Abbreviation	Definition or Term
Authorised Offsets	<p>Units representing GHG Emissions issued under one of the following schemes and cancelled or retired in accordance with any rules applicable at the relevant time governing the cancellation or retiring of units of that kind:</p> <ul style="list-style-type: none"> (a) Australian Carbon Credit Units issued under the <i>Carbon Credits (Carbon Farming Initiative) Act 2011</i> (Cth); (b) Verified Emission Reductions issued under the Gold Standard program; (c) Verified Carbon Units issued under the Verified Carbon Standard program; or (d) other offset units that the Minister has notified the proponent in writing meet integrity principles and are based on clear, enforceable and accountable methods.
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the <i>Environmental Protection Act 1986</i> , or their delegate.
Certified Improvement	<p>An improvement to technology and/or processes approved in writing by the CEO as an improvement that was or would be unlikely to occur in the ordinary implementation of the proposal (disregarding the effect of these conditions), and which is the subject of a report that:</p> <ul style="list-style-type: none"> (a) describes the improvement; (b) demonstrates that the improvement was or would be unlikely to occur in the ordinary implementation of the proposal (disregarding the effect of these conditions); and (c) has been reviewed by a suitably qualified peer reviewer, who has been approved by the CEO, and who confirms that he or she agrees with the conclusions set out in the report.
CO₂-e	Carbon dioxide equivalent.
Greenhouse Gas or GHG	Has the meaning given by section 7A of the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth) or, if that definition is amended or repealed, the meaning set out in an Act, regulation or instrument concerning greenhouse gases as specified by the Minister.
GHG Emissions or CO₂-e	Greenhouse gas emissions expressed in tonnes of carbon dioxide equivalent (CO ₂ -e) as calculated in accordance with the definition of 'carbon dioxide equivalence' in section 7 of the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth), or, if that definition is amended or repealed, the meaning set out in an Act, regulation or instrument concerning greenhouse gases as specified by the Minister.

Acronym or Abbreviation	Definition or Term
Greenhouse Gas Management Plan	<i>Gorgon Gas Treatment Plant Greenhouse Gas Management Plan</i> (ABU220200238, Revision 2.0) dated 17 August 2022 and any subsequent version of the plan that the CEO has confirmed in writing meets the requirements of condition 27.7.
LNG	Liquefied Natural Gas
Mtpa	Million tonnes per annum
Net GHG Emissions	Proposal GHG Emissions for a period less any reduction in GHG Emissions represented by the cancellation or retirement of Authorised Offsets which comply with the Timing and Reporting Requirements .
Net Non-Reservoir GHG Emissions	Non-Reservoir Emissions for a period less any reduction in GHG Emissions represented by the cancellation or retirement of Authorised Offsets which comply with the Timing and Reporting Requirements .
NGER Item 30(1)	Item 30(1) of Schedule 2 to the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Cth) in force at the date of this Ministerial Statement, or, if amended or repealed such that it no longer provides for the calculation of gas production, a provision of an Act, regulation or instrument specified by the CEO .
Non-Reservoir GHG Emissions	Proposal Emissions other than Reservoir Carbon Dioxide which have not been injected underground .
Non-Reservoir GHG Emissions Intensity	Non-Reservoir GHG Emissions per terajoule of gas produced from the proposal facility determined in accordance with NGER Item 30(1) .
Practicable	Reasonably practicable having regard to, among other things, local conditions and circumstances (including costs) and to the current state of technical knowledge as defined in Section 3(1) of the <i>Environmental Protection Act 1986</i> .
Proposal GHG Emissions	Scope 1 GHG Emissions released to the atmosphere as a direct result of an activity or series of activities that comprise/s or form/s part of the proposal, calculated in accordance with: <ul style="list-style-type: none"> (a) the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth) and its subsidiary legislation; or (b) if that Act or the relevant subsidiary legislation is amended or repealed such that it does not provide a mechanism for calculating the Proposal Emissions, any other Act, regulation or instrument concerning greenhouse gases as specified by the CEO.

Acronym or Abbreviation	Definition or Term
Proposal GHG Emissions Intensity	Proposal GHG Emissions per terajoule of gas produced from the proposal facility determined in accordance with NGER Item 30(1) .
Reservoir Carbon Dioxide Injection System	Infrastructure which is capable of permanently disposing of by injection underground into the Dupuy aquifer beneath Barrow Island, 100 per cent of the Reservoir Carbon Dioxide removed during routine gas processing operations.
Reservoir Carbon Dioxide	Proposal GHG Emissions that are separated (from natural gas or the products produced from extracted hydrocarbons) in the acid gas removal units and subsequently injected underground.
Reservoir GHG Emissions Intensity	Reservoir GHG Emissions per terajoule of gas produced from the proposal facility determined in accordance with NGER Item 30(1) .
Timing and Reporting Requirements	<p>The Timing and Reporting Requirements are that the Authorised Offsets:</p> <ul style="list-style-type: none"> (a) were cancelled or retired between the first 1 July of the relevant period until 1 March in the year after the period ends; (b) have been identified as cancelled or retired in the relevant report as required by condition 27.3(1)(b)iii; (c) have not been identified as cancelled or retired in any prior report required by condition 27.3(1)(b)iii; (d) have not been used to offset any GHG Emissions other than Proposal GHG Emissions; and (e) were not generated by avoiding Proposal GHG Emissions.
TJ	Terajoules.

Appendix C: Decision-making authorities

The decision-making authorities in the table below have been identified for the purposes of s. 45 as applied by s. 46(8) of the *Environmental Protection Act 1986*.

Decision-Making Authority	Legislation (and approval)
1. Minister for Aboriginal Affairs	<i>Aboriginal Heritage Act 1972</i> – (Section 18 approval to disturb registered Aboriginal heritage sites)
2. Minister for Environment	<i>Biodiversity Conservation Act 2016</i> – (Section 40 authority to take or disturb threatened flora and fauna species)
3. Minister for Lands	<i>Land Administration Act 1997</i>
4. Minister for Mines and Petroleum	<i>Petroleum and Geothermal Energy Resources Act 1967</i>
5. Minister for State Development	<i>Barrow Island Act 2003</i> and the Gorgon Gas Processing and Infrastructure Project Agreement (the State Agreement)
6. Minister for Transport	<i>Marine and Harbours Act 1981</i>
7. Chief Dangerous Goods Officer, Department of Mines, Industry Regulation and Safety	<i>Dangerous Goods Safety Act 2004</i> – (Approvals for the construction and operation of a Major Hazard Facility and the storage and handling of dangerous goods)
8. Chief Executive Officer, Department of Water and Environmental Regulation	<i>Environmental Protection Act 1986</i> – (Part V Works Approval and Licence)
9. Trustees of the Western Australian Museum	<i>Maritime Archaeology Act 1973</i>

Note: In this instance, agreement is only required with DMAs 1 to 6 since these DMAs are Ministers.

References

Chevron 2008, *Gorgon Gas Development Revised and Expanded Proposal Public Environmental Review*, Chevron Australia Pty Ltd, Perth WA.

Chevron 2014, *Gorgon Gas Development Fourth Train Expansion Proposal Public Environmental Review / Draft Environmental Impact Statement (PER / Draft EIS)*, Chevron Australia Pty Ltd, Perth WA.

Chevron 2015, *Gorgon Gas Development and Jansz Feed Gas Pipeline: Greenhouse Gas Abatement Program*, Document No: G1-NT-PLNX0000012, Revision 1, Chevron Australia Pty Ltd, 11 May 2015.

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DMIRS 2022, *Gorgon CO₂ Injection Project Compliance and Performance Monitoring Report, Year ending December 2021, Confidential*, Department of Mines, Industry Regulation and Safety, 30 June 2022, Perth, WA.

EPA 2009, *Gorgon Gas Development Revised and Expanded Proposal: Barrow Island Nature Reserve*, Report 1323, Environmental Protection Authority, Perth WA.

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EPA 2021b, *Environmental impact assessment (Part IV Divisions 1 and 2) procedures manual*, Environmental Protection Authority, Perth, WA.

State of Western Australia 2021, *Western Australia Government Gazette, No. 180, Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2021*, 22 October 2021.