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## 18.0 SHORT TITLES AND ACRONYMS

The table below sets out the short titles and acronyms used in this document.

Short Titles and Acronyms	Long Title
AGRU	Acid Gas Removal Unit
ALARP	As low as reasonably practicable
ANZECC	Australian and New Zealand Environment and Conservation Council
APCDC	Asia Pacific Partnership on Clean Development and Climate
APPEA	Australian Petroleum Production and Exploration Association
Approved Development	Approved Gorgon Gas Development
AQIS	Australian Quarantine Inspection Service
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ABU	Australasia Strategic Business Unit
AS/NZ	Australia/New Zealand
AS/NZS	Australia/New Zealand Standard
AEC	Australian Environment Council
bbI	Barrel (approximately 200 L)
BOG	Boil Off Gas
BP	Before Present
BPP	Benthic Primary Producers
BPPH	Benthic Primary Producers Habitat
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CALM Act	West Australian Conservation and Land Management Act 1984
CAMBA	China Australia Migratory Birds Agreement
CCIWA	Chamber of Commerce and Industry Western Australia
°C	Degrees Celsius
Chevron Australia	Chevron Australia Pty Ltd
CLT	Cumulative Loss Threshold
CHMP	Cultural Heritage Management Plan
CMEWA	Chamber of Minerals and Energy Western Australia
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
CO	Carbon Monoxide
CSIRO	[Australian] Commonwealth Scientific and Industrial Research Organisation
dB(A)	Noise level measured in decibels with A-weighting system
dB(C)	Noise level measured in decibels with C-weighting

Short Titles and Acronyms	Long Title
	system
DEC	Western Australian Department of Environment and Conservation
CSLF	Carbon Sequestration Leadership Forum
DEWHA	Commonwealth Department of the Environment, Water, Heritage and the Arts
DIA	Western Australian Department of Indigenous Affairs
DISPMOD	Gaussian Plume Modelling System
DLN	Dry Low Nitrogen Oxides
DMA	Decision Making Authority
DNA	Deoxyribonucleic Acid
DoIR	Western Australian Department of Industry and Resources
DPI	Western Australian Department for Planning and Infrastructure
DRET	Commonwealth Department of Resources, Energy and Tourism
DRF	Declared Rare Flora
EIS/ERMP	Environmental Impact Statement/Environmental Review and Management Programme
eNGO	Environmental Non-Government Organisation
EMP	Environmental Management Plan
EPA	Western Australian Environmental Protection Authority
EP Act	Western Australian Environmental Protection Act 1986
EPA SU	Western Australian Environmental Protection Authority Service Unit
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
EQC	Environmental Quality Criteria
ESD	Ecologically Sustainable Development
ESE	Environmental, Social and Economic
FEED	Front End Engineering and Design
GDA94	Geocentric Datum of Australia 1994
GDW1	Gorgon Data Well 1
GEMS	Global Environmental Modelling Systems
GJVs	Gorgon Joint Venturers
ha	Hectare
HDD	Horizontal Directional Drilling
HES	Health, Environment and Safety
H <sub>2</sub> S	Hydrogen Sulphide
IMS	Impact Mitigation Strategy
ISO	International Organization for Standardization
IUCN	International Union for Conservation and Natural

Short Titles and Acronyms	Long Title
	Resources
ISQG	Interim Sediment Quality Guideline
JAMBA	Japan Australia Migratory Birds Agreement
JIP	Joint Industry Program
JVP	Joint Venture Partner
kg	Kilogram
kg/ha	Kilogram per hectare
km	Kilometre
km/hr	Kilometre per hour
L	Litre
LA <sub>1</sub> :	A noise level that is not to be exceeded for more than 1% of the time.
LA <sub>10</sub> :	Light Attenuation Coefficient
LAC	A noise level that is not to be exceeded for more than 10% of the time
LAm <sub>ax</sub> :	A noise level that is not to be exceeded at any time.
LA <sub>eq</sub>	The Equivalent Continuous Sound Level, which is the level of a notional steady sound, that at a given position and over a defined period of time would have the same A-weighted acoustic energy as the fluctuating noise.
LAT	Lowest Astronomical Tide
LHV	Low heating value
LNG	Liquefied Natural Gas
m	Metre
mm	millimetre
m/s	Metres per second
m <sup>2</sup>	Square metre
m <sup>3</sup>	Cubic metre
µg/L	Microgram per litre
µg/m <sub>3</sub>	Microgram per cubic metre
mg/cm <sup>2</sup>	Milligram per square metre
mg/L	Milligram per litre
mg/m <sup>3</sup>	Milligram per cubic metre
MARPOL	International Convention for the Prevention of Pollution from Ships
MDEA	methyl-diethanolamine
MDF	Marine Disturbance Footprint
MEB	Marine Ecology Branch (EPA SU) (WA)
MGA94	Map Grid of Australia 1994
MIS	Ministerial Implementation Statement
MOF	Materials Offloading Facility
MPa	Megapascal

Short Titles and Acronyms	Long Title
MSDS	Material Safety Data Sheet
MTEP	Marine Turtle Expert Panel
MTPA	Million Tonnes Per Annum
MW	Megawatt
N/A	Not Applicable
NavSim	Navigation Simulations
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NES	Matters of National Environmental Significance as defined by the EPBC Act
NGER Act	Commonwealth National Greenhouse and Energy Reporting Act 2007
NGO	Non-Government Organisation
NHMRC	National Health and Medical Research Centre
NIS	Non-indigenous Species
nm	Nautical Mile
NOx	Oxides of Nitrogen
NO <sub>2</sub>	Nitrogen Dioxide
NOHSC	National Occupational Health and Safety Council
O <sub>3</sub>	Ozone
ODAC	Western Australian Office of Development Approvals Coordination
OE	Operational Excellence
OEMS	Operational Excellence Management System
OSCP	Oil Spill Contingency Plan
PAH	Polycyclic Aromatic Hydrocarbon
PEC	Priority Ecological Community
PER	Public Environmental Review
PM <sub>10</sub>	Particulate Matter of 10 Micrometres or Less
ppm	Parts per Million
QAC	Quarantine Advisory Committee
QAP	Quarantine Approved Premises
QEP	Quarantine Expert Panel
QHAZ	Quarantine Hazard Analysis
QMS	Quarantine Management System
RAMSAR	The Convention on Wetlands of International Importance
Revised Proposal	Gorgon Gas Development Revised and Expanded Proposal
RO	Reverse Osmosis
ROKAMBA	Republic of Korea Australia Migratory Birds Agreement
SAA	Australian Standards Australia
SOx	Oxides of Sulphur

Short Titles and Acronyms	Long Title
SO <sub>2</sub>	Sulphur Dioxide
SRE	Short Range Endemic
SWQMS	State Water Quality Management Strategy
t	Tonne
TAPM	The Air Pollution Model
TBT	Tributyltin
TDF	Terrestrial Disturbance Footprint
TDS	Total Dissolved Solids
TEC	Threatened Ecological Community
TPA	Tonnes per Annum
TP	Total Phosphorus
TSS	Total Suspended Solids
TVDss	Total Vertical Depth Sub-sea
VOC	Volatile Organic Compound
µg/m <sup>3</sup>	Milligrams per Cubic Metre
UWA	University of Western Australia
WA	Western Australia
WHO	World Health Organisation
WHRU	Waste Heat Recovery Unit
Wildlife Act	Western Australian Wildlife Conservation Act 1950
WMP	Weed Management Plan
WWF	World Wide Fund for Nature
2D	Two Dimensional

## 19.0 DEFINITIONS

“As far as practicable”, “to the extent practicable”, “where practicable” and “practicable” all mean reasonably practicable having regard to, among other things, local conditions and circumstances (including costs) and to the current state of technical knowledge.

Average Net Detectable Mortality - Average Net Detectable Mortality of coral is the result of averaging the Net Detectable Mortality of all Monitoring Sites within the Zone, i.e. the mean of Net Detectable Mortality of any Zone.

Barrow Island Industry Participants – The Gorgon Joint Venture Participants, the Barrow Island Joint Venture Participants and any other future Industry Participant.

Behavioural Impact – Disruption of established behavioural patterns affecting reproductive or survival success.

Best Practicable Measures - Has the meaning as defined in Western Australian Environmental Protection Authority Guidance Statement No 55 (2003)

Consequence – The implication of the impact (as defined).

### Coral Mortality definitions

*Direct loss* is defined as permanent removal of Benthic Primary Producer Habitat (BPPH) substrate and mortality of coral.

*Indirect loss* is defined as mortality of coral with no removal BPPH. BPPH may return at some future time, but this will be dependent upon the condition of the substrate and successful recruitment.

*The Change in coral mortality* is determined by subtracting the baseline extent of Gross coral mortality from the extent of Gross coral mortality measured on a sampling occasion.

*Net detectable coral mortality at a monitoring location* is the result of subtracting the Change in coral mortality at the Reference Site from the Change in coral mortality at that Monitoring Site.

*Average Net detectable coral mortality* is the result of averaging the net mortality of all monitoring locations within the Zone i.e. the mean of net mortality of any Zone.

Gross coral mortality at a site is expressed as a percentage of total coral cover at the time of sampling at that monitoring location.

In determining the coral loss, measurement uncertainty is to be taken into consideration.

Construction – Construction includes any Proposal-related construction and commissioning activities within the Terrestrial and Marine Disturbance Footprints, excluding investigatory works such as, but not limited to, geotechnical, geophysical, biological and cultural heritage surveys, baseline monitoring surveys and technology trials.

Construction Period - The period from the date on which the Gorgon Joint Venturers first commence construction of the Proposal until the date on which the Gorgon Joint Venturers issue a notice of acceptance of work under the EPCM, or equivalent contract entered into in respect of the second LNG train of the Gas Treatment Plant.

Decrease in abundance – Loss of individual animals/plants.

Deep wells (in the context of liquid waste disposal) – refer to injection wells completed in the Barrow Group (a well defined geological formation approximately 1 000 – 1 800m below the surface).

Dominant coral species – species with the highest relative percentage cover. Percentage cover is expressed as the proportion of total coral cover.

Disposal of carbon dioxide (CO<sub>2</sub>) underground – an activity conducted pursuant to Part 4 section 13 and Clauses 7, 8 and 9 of Schedule 1 of the *Barrow Island Act 2003* (WA).

Disruption – Interruption to the flow or continuity of biological processes and/or behaviour.

Ecological Community – refers to all the interacting organisms living together in a specific habitat.

EIS/ERMP - the Environmental Impact Statement/Environmental Review and Management Programme for the Proposed Gorgon Development dated September 2005 as amended or supplemented from time to time.

Endemic – Unique to an area; found nowhere else.

Environmental Harm - has the meaning given by Part 3A of the *Environmental Protection Act 1986* (WA)

Greenhouse gas abatement 'Beyond No Regrets Measures' – are measures that involve additional costs to the Proposal which are unlikely to be recovered

Greenhouse gas abatement 'No Regrets Measures' – are measures that are cost-neutral and do not add additional cost to the Proposal.

Hazard – A source of potential harm, or a situation with a potential to cause loss or adverse effect. Hazard has the same meaning as 'threat'.

Impact – Direct interaction of a stressor with the environment.

Impact on population - Decrease in abundance beyond natural variation in population size.

Immediate region – For aspects of the Gorgon Gas Development on Barrow Island or within the marine conservation reserves: Barrow Island, Lowendal Islands and Montebello Islands. For aspects of the Gorgon Gas Development offshore of Barrow Island: Pilbara Offshore Region. For aspects of the Gorgon Gas Development between Barrow Island and mainland: Pilbara Nearshore Region. For aspects of the Gorgon Gas Development on the mainland: Pilbara.

Introduced Terrestrial Species - non-indigenous terrestrial species (including weeds).

Likelihood – The probability of a stressor impacting on the key receptors.

Listed marine fauna – marine fauna that are included on lists of threatened species (State, Federal or International).

Local – Impacts restricted to the area directly affected by the Gorgon Gas Development and the immediate vicinity of the Gorgon Gas Development.

Long-term – Greater than five years.

Lux – a unit of measure of illuminance and luminous emittance.

Marine Disturbance Footprint – the area of the seabed to be disturbed by construction or operations activities associated with the Marine Facilities listed in Condition 14.3 (excepting that area of the seabed to be disturbed by the generation of turbidity and sedimentation from dredging and dredge spoil disposal).

Marine Pests – Species other than the native species known or those likely to occur in the waters of the Indo-West Pacific region and the Pilbara Offshore (PIO) marine bioregion in Interim Marine and Coastal Regionalisation for Australia: An Ecosystem Based Classification for Marine and Coastal Environments (IMCRA, 1997), of which

Barrow Island is a part, that do or may threaten biodiversity in the Pilbara Offshore (PIO) marine bioregion. As a minimum, the National Introduced Pest Information System Database (NIMPIS, Dept Environment and Water Resources, Commonwealth Government), National Priority Pests listed in the document National Priority Pests, Part II, Ranking of Australian Marine Pests (CSIRO Marine Research, 2005) will guide the interpretation of this definition. Additional species may be added on the advice of experts from the WA Department of Fisheries and the Quarantine Expert Panel.

Marine Quarantine Controlled Access Zone – The zone that extends from 500m offshore from the Barrow Island MHHW mark and encapsulates the entire coastline of Barrow Island. The zone also extends 500m from all marine facilities contiguous with Barrow Island.

Marine Quarantine Limited Access Management Zone – The zone that commences at the outer boundary approximately 2.5 km from the Barrow Island shoreline (MHHW Mark) up to the 500 metre mark from the shoreline.

Marine Turtles – Refers to flatback, green and hawksbill turtles nesting on Barrow Island.

Material Environmental Harm – means environmental harm that is neither trivial nor negligible.

Minister – WA Minister for the Environment

Non-indigenous terrestrial species - Any species of plant, animal or micro-organism not native to Barrow Island. (Native - species that are native to (naturally occurring in) a region. (Reference: State of the Environment Advisory Council (1996). Australia: State of the Environment 1996)

Operations – for the respective LNG trains, this is the period from the date on which the Gorgon Joint Venturers issue a notice of acceptance of work under the Engineering, Procurement and Construction Management (EPCM) contract, or equivalent contract entered into in respect of that LNG train of the Gas Treatment Plant; until the date on which the Gorgon Joint Venturers commence decommissioning of that LNG train.

Population – A group of organisms of the same species occupying an area.

Population viability – The ability of a group of organisms (occupying an area) to survive in that area.

Porites – An important genus of long-lived, reef building corals.

Receptor – An ecological entity (e.g. species, population, community or habitat) exposed to a stressor.

Reduced viability – Reduced ability of a population to persist through time.

Region – Pilbara.

Reservoir Carbon Dioxide - a gas stream that consists overwhelmingly of carbon dioxide and coming from the acid gas removal units of the Gas Treatment Plant to be located on Barrow Island. The carbon dioxide will contain incidental associated substances derived from the natural gas and the process used to separate the carbon dioxide from that natural gas.

Reservoir Carbon Dioxide Injection System – the mechanical components required to be constructed to enable the injection of reservoir carbon dioxide, including but not limited to compressors, pipelines and wells.

Restricted and significant marine benthic primary producer communities – benthic primary producer communities that are of high ecological value and are of high conservation value due to their limited representation in the local area or region

Serious Environmental Harm - means environmental harm that:

- a. is irreversible, of a high impact or on a wide scale
- b. is significant or in an area of high conservation value or special significance and is neither trivial nor negligible.

Short-Range Endemics - Taxonomic group of invertebrates that are unique to an area; found nowhere else and have naturally small distributions (i.e. <10 000km<sup>2</sup>)

Short-term – Less than five years.

Species viability – The ability of the species to persist over time.

Statistical Power - The probability of detecting a meaningful difference, or effect, if one were to occur.

Stressor – A source of potential harm or a situation with the potential to cause loss or adverse effect.

Sub-dominant coral species – species, excluding Dominant coral species, which have greater than or equal to 5% cover. Percentage cover is expressed as the proportion of total coral cover.

Substantially Commenced - physical construction activities for, and progress of an important or essential element(s) of the Proposal scope.

Terrestrial Disturbance Footprint – the area to be disturbed by construction or operations activities associated with the terrestrial facilities listed in Condition 6.3.

Terrestrial Quarantine Controlled Access Zone – The zone encompassing the following points of entry to Barrow Island:

- a. Quarantine Approved Premises ( marine offloading facility, warehouse, remedial facility, quarantine washdown bay and first stage laydown)
- b. Airport
- c. WAPET Landing.

Terrestrial Quarantine Limited Access Management Zone – The Zone encompassing areas of the Terrestrial Disturbance Footprint which are used for intensive, long-term development activities on Barrow Island:

- a. Gas Treatment Plant
- b. Construction Village and Barrow Island Oil Joint Venture Camp
- c. Administration and Operations Complex
- d. Onshore Feed Gas Pipeline System and Carbon Dioxide Injection System corridors

Widespread – Impacts extending to areas well-outside the direct impact zone from the Gorgon Gas Development.



## Gorgon Gas Development Revised and Expanded Proposal



Gorgon Gas Development Revised and Expanded Proposal