MINISTER FOR THE ENVIRONMENT;
LABOUR RELATIONS

Statement No.

000536

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

NORTH WEST SHELF GAS PROJECT
ADDITIONAL LIQUEFIED NATURAL GAS FACILITIES
BURRUP PENINSULA

Proposal: The construction of two additional Liquefied Natural Gas (LNG) processing trains, with support facilities, at the existing LNG plant on the Burrup Peninsula in the North West of Western Australia. This expansion will increase the LNG capacity of the plant from 7.5 million tonnes per annum to 15.5 million tonnes per annum. The export of the additional LNG will require the construction of one additional LNG jetty (see schedule 1, attached).

Proponent: Woodside Energy Ltd.

Proponent Address: 1 Adelaide Terrace, PERTH WA 6000

Assessment Number: 1188

Report of the Environmental Protection Authority: Bulletin 962

The proposal to which the above report of the Environmental Protection Authority relates may be implemented subject to the following conditions and procedures:

1 Implementation

1-1 Subject to these conditions and procedures, the proponent shall implement the proposal as documented in schedule 1 of this statement.

1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.

1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

Published on

11 FEB 2000

18th FLOOR, ALLENDALE SQUARE, 77 ST. GEORGE'S TERRACE, PERTH 6000 TELEPHONE: (08) 9421 7777 FACSIMILE: (08) 9221 4665/8

2 Proponent Commitments

2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 2 of this statement.

2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of conditions and procedures in this statement.

3 Environmental Management System

3-1 In order to manage the environmental impacts of the project, and to fulfil the requirements of the conditions and procedures in this statement, prior to construction, the proponent shall demonstrate to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection that there is in place an environmental management system which includes the following elements:

1 An environmental policy and corporate commitment to it;

2 Mechanisms and processes to ensure:

(1) planning to meet environmental requirements;

(2) implementation and operation of actions to meet environmental requirements;

(3) measurement and evaluation of environmental performance; and

3 Review and improvement of environmental outcomes.

3-2 The proponent shall implement the environmental management system referred to in condition 3-1.

4 Greenhouse Gas Emissions

4-1 Prior to commissioning, the proponent shall prepare a Greenhouse Gas Emissions Management Plan:

- to ensure that "greenhouse gas" emissions from the project are adequately addressed and best available efficient technologies are used in Western Australia to minimise Western Australia's "greenhouse gas" emissions; and
- to mitigate "greenhouse gas" emissions in accordance with the Framework Convention on Climate Change 1992, and consistent with the National Greenhouse Strategy,

to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

This Plan shall include:

1 calculation of the "greenhouse gas" emissions associated with the proposal, as indicated in "Minimising Greenhouse Gas Emissions, Guidance for the Assessment of Environmental Factors, No. 12" published by the Environmental Protection Authority;

2 specific measures to minimise the "greenhouse gas" emissions associated with the proposal;

3 monitoring of "greenhouse gas" emissions;

4 estimation of the "greenhouse gas" efficiency of the project (per unit of product and/or other agreed performance indicators) and comparison with the efficiencies of other comparable projects producing a similar product; and

5 an analysis of the extent to which the proposal meets the requirements of the National Strategy using a combination of:

- "no regrets" measures;
- "beyond no regrets" measures;
- land use change or forestry offsets; and
- international flexibility mechanisms.

4-2 The proponent shall implement the Greenhouse Gas Emissions Management Plan required by condition 4-1.

4-3 The proponent shall make the Greenhouse Gas Emissions Management Plan required by condition 4-1 publicly available, to the requirements of the Environmental Protection Authority.

5 Decommissioning and Rehabilitation

5-1 At least six months prior to decommissioning, the proponent shall prepare a Decommissioning and Rehabilitation Management Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

This Plan shall address:

1 removal or, if appropriate, retention of plant and infrastructure;

2 rehabilitation of all disturbed areas to a standard suitable for agreed new land use(s); and

3 identification of contaminated areas, including provision of evidence of notification to relevant statutory authorities.

5-2 The proponent shall implement the Decommissioning and Rehabilitation Management Plan required by condition 5-1 until such time as the Minister for the Environment determines that decommissioning and / or rehabilitation is / are complete.

5-3 The proponent shall make the Decommissioning and Rehabilitation Management Plan required by condition 5-1 publicly available, to the requirements of the Environmental Protection Authority.

6 Performance Review

6-1 Each six years following the commencement of construction, the proponent shall submit a Performance Review report to the Department of Environmental Protection:

- to document the outcomes, beneficial or otherwise;

- to review the success of goals, objectives and targets; and
- to evaluate the environmental performance over the six years;

relevant to the following:

1 environmental objectives reported on in Environmental Protection Authority Bulletin 962;

2 proponent's consolidated environmental management commitments documented in schedule 2 of this statement and those arising from the fulfilment of conditions and procedures in this statement;

3 environmental management system environmental performance targets;

4 environmental management programs and plans; and/or

5 environmental performance indicators;

to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

Note:

1 This report may be amalgamated with the Triennial Report as required under the *North West Gas Development (Woodside) Agreement Act 1979*.

2 The Environmental Protection Authority may recommend changes and actions to the Minister for the Environment following consideration of the Performance Review report.

7 Proponent

7-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person in respect of the proposal.

7-2 Any request for the exercise of that power of the Minister referred to in condition 7-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.

7-3 The proponent shall notify the Department of Environmental Protection of any change of proponent contact name and address within 30 days of such change.

8 Commencement

8-1 The proponent shall provide evidence to the Minister for the Environment within five years of the date of this statement that the proposal has been substantially commenced.

8-2 Where the proposal has not been substantially commenced within five years of the date of this statement, the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.

8-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement at least six months prior to the expiration of the five year period referred to in conditions 8-1 and 8-2.

8-4 Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years for the substantial commencement of the proposal.

9 Compliance Auditing

9-1 The proponent shall submit periodic Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.

9-2 Unless otherwise specified, the Chief Executive Officer of the Department of Environmental Protection is responsible for assessing compliance with the conditions, procedures and commitments contained in this statement and for issuing formal written advice that the requirements have been met.

9-3 Where compliance with any condition, procedure or commitment is in dispute, the matter will be determined by the Minister for the Environment.

Note

1 The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the Environmental Protection Act.

CHERYL EDWARDES (Mrs) MLA
MINISTER FOR THE ENVIRONMENT

11 FEB 2000

Schedule 1

The Proposal (1188)

The proposal is to construct two additional Liquefied Natural Gas (LNG) processing trains at the existing LNG plant on the Burrup Peninsula in the North West of Western Australia. This expansion will increase the LNG capacity of the plant from 7.5 million tonnes per annum to 15.5 million tonnes per annum. The export of the additional LNG will require the construction of an additional LNG jetty with its berthing pocket.

The key characteristics of the proposal are summarised in Table 1 below.

Table 1 - Summary of key proposal characteristics

Project Characteristics	Requirements
Project life	30+ years
Reserve source	North Rankin, Goodwyn gas fields
Project facilities	▪ additional LNG processing trains; ▪ 1 additional fractionation unit; ▪ 2 additional power generation units; ▪ 1 additional LNG jetty berth; ▪ 1 additional LNG storage tank; ▪ Utilities upgrade (nitrogen plant, water treatment facilities, waste heat recovery from the existing power plant); and ▪ Relocation of administration complex.
Main process	Shell Propane/Mixed Refrigerant (C3/MR) process with waste heat recovery
Additional LNG production	8 million tonnes per annum (existing 7.5 Mtpa)
Additional land disturbance (laydown)	45 hectares (existing 231 hectares)
Additional power supply	Approx 50 megawatts (for two trains)
Additional carbon dioxide emissions	2.9 million tonnes per annum
Dredged seabed material for shipping lanes, ship berthing basins and turning circles	2.7 million cubic metres
Additional permanent workforce	Approximately 40-70 persons
Construction workforce	Approximately 2,000 - 2,500 persons (peak)
Construction period	Approximately 3 years per train

Figures

The project location map is at Figure 1 (attached), and a plan and aerial photograph showing the LNG expansion facilities are at Figures 2 and 3 (attached).

The additional LNG trains will be located to the south of the existing three trains. One new LNG storage tank will be located to the south west of the existing LNG storage tanks. The LNG trains and supporting facilities will be located within the existing Woodside leases. However, additional areas for the project will be required for the lay down of construction materials and for quarrying. The proponent is negotiating the use of a 100 metre buffer strip to the south of the Woodside leases adjacent to the Gorgon LNG project lease area for these purposes, for which a temporary lease will be required. The haul road from the Dampier Port Authority to the south will also be used for transporting construction material.

The two additional LNG processing trains will require the construction of additional processing support facilities. The additional power supply of approximately 50 megawatts, will be supplied by high efficiency gas turbines. One additional fractionating unit, to remove heavier hydrocarbons, will be required. It will be positioned adjacent to the existing fractionating units 1 and 2.

The construction workforce of approximately 2,000 to 2,500 people will be accommodated in the Karratha area and the construction period is approximately 3 years if the trains are constructed together. The proponent may choose to stage the construction of any part or parts of this proposal, integrating this construction with other previous approvals, to meet market demands.

Figure 1 Project Location Map

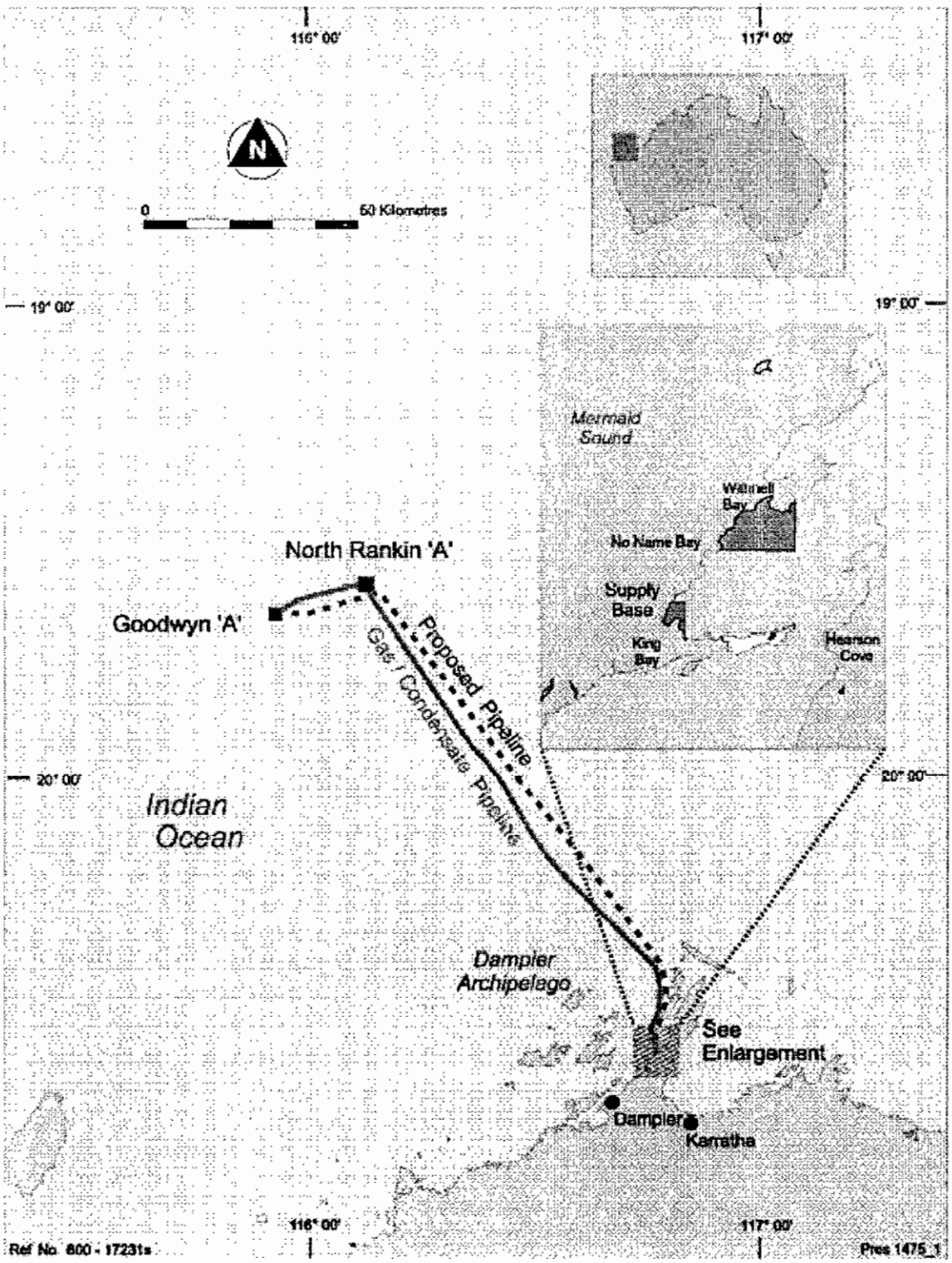


Figure 2 LNG Expansion Project Plan

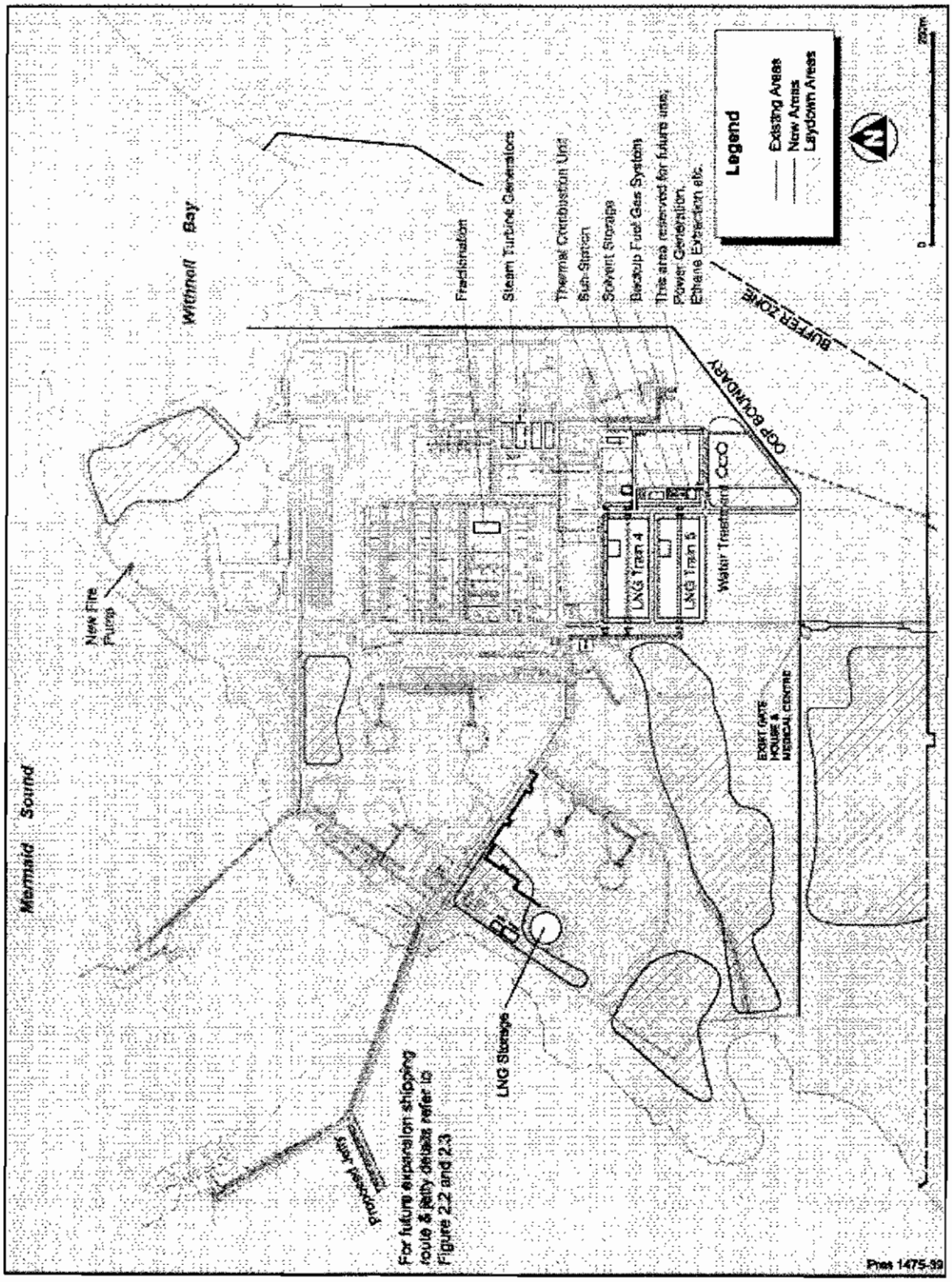
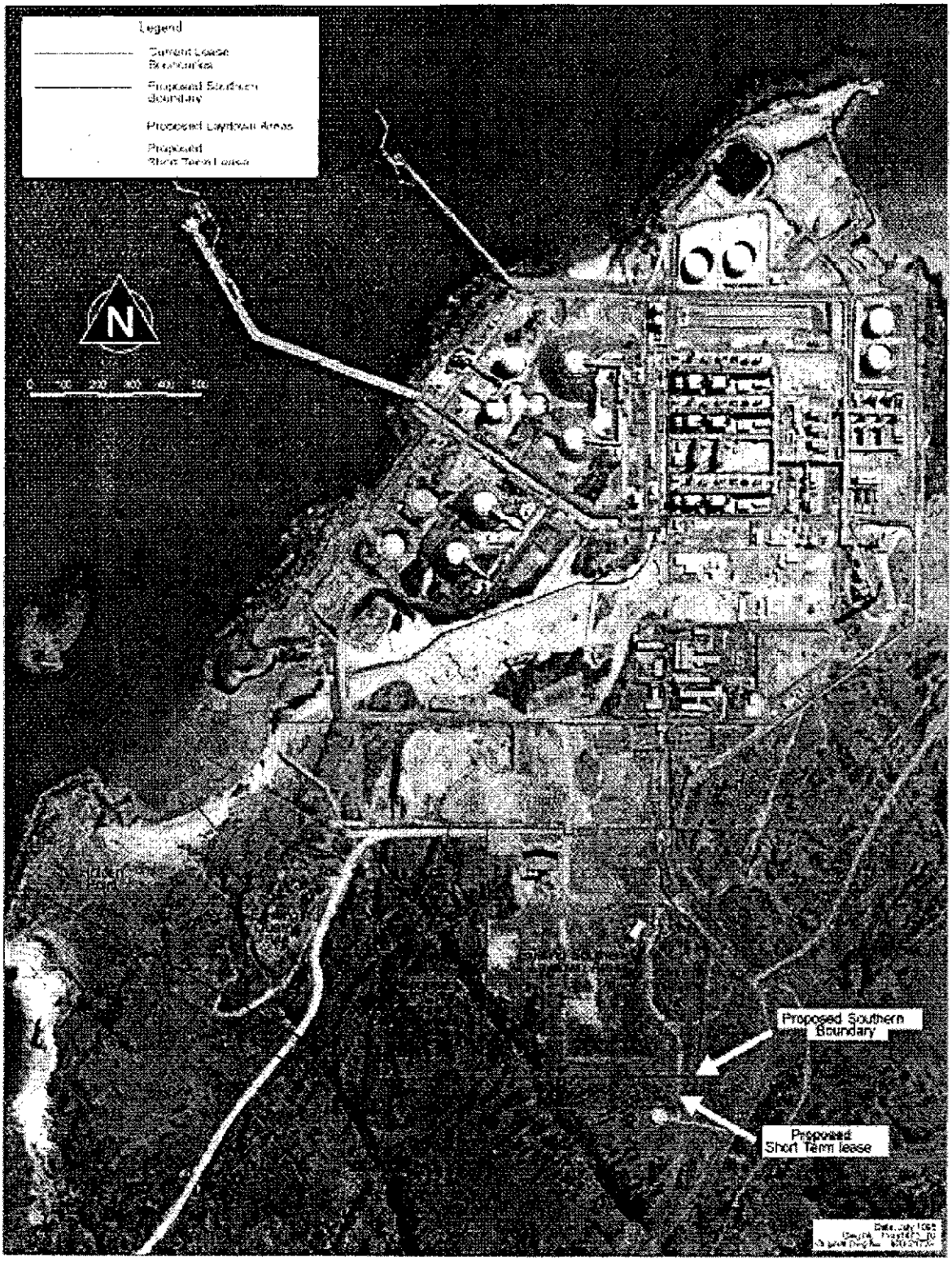


Figure 3 Project location ariel photograph



Schedule 2

Proponent's Consolidated Environmental Management Commitments

NORTH WEST SHELF GAS PROJECT ADDITIONAL LIQUEFIED NATURAL GAS FACILITIES

(Assessment No. 1188)

July 1999

WOODSIDE ENERGY LTD

Schedule 2 - Proponent's Consolidated Environmental Management Commitments (1188)

No	Topic	Action	Objective	How	Timing	Whose advice
			CONSTRUCTION			
1	Dredging and Blasting Impacts	The proponent to prepare a Dredging and Blasting Environmental Management Plan (DBEMP).	To manage and minimise the impacts on human safety, water quality, marine flora and fauna and nearby industries and communities, from dredging and blasting operations, and spoil disposal.	The DBEMP will include the following measures for: <u>Blasting, to:</u> 1. use a cutter suction dredge wherever possible to excavate calcarenite material; 2. incorporate delays into the blast pattern to reduce peak particle velocities and overpressures to minimise effects on marine life; 3. utilise operational procedures to minimise the impact of blasting on marine life; 4. ensure a whale and turtle watch is maintained in the blast area and to stop blasting while marine mammals/reptiles are in the blasting area; 5. develop a strategy to minimise the amount of plastic casing fragments generated by each charge. All signal tubes will be recovered after each blast; and 6. remove dead fish after each blast as soon as practicable to prevent injury to birds; <u>Dredging,</u> to minimise sedimentation impacts from dredging and the impact on neighbouring corals by: 1. not dredging for a suitable time period around the actual coral spawning event. The downtime for coral spawning will be managed in consultation with CALM; 2. monitoring the neighbouring corals before and after dredging; 3. minimising sediment generation by the use of appropriate dredging methods; 4. seeking to manage dredge position to minimise sediment dispersion to the shoreline; and 5. that in the event of significant (>50%) mortality of coral communities attributable to high levels of dredge spoil turbidity, the proponent will implement a suitable program of enhancing coral recruitment in that area.	Prior to jetty construction	CALM and EA.

No	Topic	Action	Objective	How	Timing	Whose advice
2	Dredging and Blasting Impacts	Implement the Dredging and Blasting Environmental Management Plan (DBEMP).	To achieve the objectives of commitment 1.		During construction of Shipping Channel & Turning basin.	
3	Shipping/ Vessel Management Wastes disposal	Ensure that wastes are disposed in accordance with MARPOL Annex IV or at the onshore gas plant waste system.	To manage the impacts of wastes from vessels on the marine environment.	Report in the annual report to the WA Government under the North West Gas Development (Woodside) Agreement 1979 (hereafter called the 'annual report to Government').	Report annually	
4	Shipping/ Vessel Management Sediment Ballast Water	Dredges arriving in Australia will be required to comply with AQIS Notice 92/2 'Controls on the discharges of ballast water and sediment from ships entering Australia from Overseas'. To audit compliance of the disposal of ballast water and control of sediments.	To manage the impacts of discharges from vessels, and sediment from dredges, on the marine environment.	A summary of compliance audits of this and of ballast water discharges will be sent to DEP.	Summary report will be provided to DEP on a regular basis or reported in the annual report to Government.	
5	Shipping/ Vessel Management Oil Spills	Include a Risk Assessment of extra shipping risks in the Project QRA.	To minimise the risks of oil spills from vessels on the marine environment.	Include the assessment of shipping risks in the plant Quantified Risk Assessment.	Prior to commissioning.	DME and DPA.
6	Shipping/ Vessel Management Oil Spills	Ensure MARPOL and proponent requirements for oil spills are reviewed.	To manage the impacts of oil spills from vessels on the marine environment.	Oil Spill Response Plans will be developed and implemented to interface with the proponent's Oil Spill Contingency Plan.	Prior to project related vessel movements.	DPA and DME.

No	Topic	Action	Objective	How	Timing	Whose advice
7	Effluent discharges Hydrotesting	Obtain DEP agreement for each batched disposal of hydrotest fluids.	To manage the impacts of discharges from plant construction on the marine environment.	The proponent will prepare a hydrotest program for approval by the DEP, prior to the commencement of the hydrotesting phase of construction. The proponent will notify the DEP (if required) of the hydrotest discharges to be performed each day under the approved hydrotest program.	As required.	
8	Effluent discharges Pickling liquors	Pickling liquors will not be disposed of into the marine environment.	To manage the impacts of discharges from plant construction on the marine environment.	n/a	n/a	n/a
9	Dust	Control dust emissions from the project areas during construction, where necessary.	To protect surrounding land users from adverse impacts.	Dust suppression (road dampening) and dust water sprays will be utilised as required.	During construction of additional LNG trains.	
10	Flora and Fauna Disturbance of new areas.	Liaise with CALM prior to the destruction of Priority Flora and Fauna and report in annual report.	To protect the environment to the maximum extent possible.	Report in annual report to Government.	During construction of additional LNG trains.	CALM
11	Flora and Fauna Weed control	Construct vehicle washdown facilities in appropriate locations.	Maintain the abundance, diversity, geographic distribution and productivity of vegetation communities.	Report in annual report to Government.	During construction of additional LNG trains.	
12	Flora and Fauna	Participate in appropriate joint industry/government vegetation survey on the Burrup Peninsula.	Understand the abundance, diversity, geographic distribution and productivity of vegetation communities.		As initiated by Government.	

No	Topic	Action	Objective	How	Timing	Whose advice
13	Flora and Fauna	Participate in appropriate joint industry/government weed research programme on the Burrup Peninsula.	Maintain the abundance, diversity, geographic distribution and productivity of vegetation communities.		As initiated by Government.	
14	Surface Water Disturbance of new areas and disposal of waste rock.	Change to landform will not extend past the immediate area of disturbance. Maintain beneficial uses of surface water consistent with draft EPA Guidance #26.	Manage contaminated surface water runoff consistent with draft EPA Guidance #26.	Post construction site audit and report in annual report to Government.	After construction of additional LNG trains	
15	Waste Management Solid Wastes	Dispose of solid wastes in accordance with the Shire of Roebourne and DEP requirements.	To reduce the environmental impacts from waste disposal.	Develop recycling procedures, where possible, for higher quality wastes. Dispose of lower quality wastes in accordance with the Shire of Roebourne and DEP requirements. Report in annual report to Government.	During construction of additional LNG trains.	Shire of Roebourne
16	Noise, vibration	Monitor noise levels where appropriate during construction.	To meet the *Environmental Protection (Noise) Regulations 1997.*	Report in annual report to Government.	During construction of additional LNG trains.	
17	Onshore Process Spills	Install bunding in areas where there is a possibility of accidental oil contamination.	To protect the marine environment.	Bunding to meet AS 1940 Standards. Report in annual report to Government.	After Construction of additional LNG trains.	
			OPERATION			
18	Effluent discharges from LNG plant operation	Sulfinol concentrations in effluent discharges will be maintained within the DEP licence conditions.	To protect the marine environment.	Report discharge in annual report to Government.	After construction of additional LNG trains.	

No	Topic	Action	Objective	How	Timing	Whose advice
19	Shipping impacts on the marine environment. Turbidity Tri-butyl tin	Monitor the effect of turbidity on corals, and TBT accumulation in Mermaid Sound.	To protect the marine environment.	Report results of the monitoring annually as part of the Chemical and Ecological Monitoring of Mermaid Sound (CHEMMS) Programme.	During plant operation.	
20	Greenhouse Gases	Incorporate the LNG expansion project into the cooperative agreement with the Commonwealth Government under the "Greenhouse Challenge" program.	Measure and report greenhouse gas emissions.	Annual report to the Greenhouse Challenge Office.	During operations.	Greenhouse Challenge Office
21	Greenhouse Gases	Install equipment (sulfinol vent gas combustion) and other measures to reduce greenhouse gases, as proposed in the PER.	Minimise Greenhouse Gas emissions.	Report in annual report to Government.	After Construction of additional LNG trains.	Greenhouse Challenge Office
22	Greenhouse Gases	Undertake a study of forestry and other options as part of the ongoing greenhouse gas reduction strategy.	Minimise Greenhouse Gas emissions.	Annual report to the Greenhouse Challenge Office.	During operations	Greenhouse Challenge Office
23	Air Emissions	Install low NOx burners on all new gas equipment.	Minimise the potential for photochemical smog.	Report in annual report to Government.	After Construction of additional LNG trains.	
24	Air Emissions	Confirm the predictive air modelling as part of the Pilbara Air Quality Study.	To confirm predictive modelling results.	Report in annual report to Government.	Prior to construction of additional LNG trains.	

No	Topic	Action	Objective	How	Timing	Whose advice
25	Mercury regeneration	Dispose of the spent mercury bed material in an appropriate manner.	To prevent mercury losses to the environment.	Report in annual report to Government.	During operations	
26	Groundwater monitoring	Confirm any additional groundwater monitoring requirements.	To maintain the beneficial uses of the groundwater.	Ascertain any requirements for additional groundwater monitoring on completion of the current groundwater study.	Construction	
27	Risk	Undertake a full Quantified Risk Assessment.	To confirm the results of the preliminary risk assessment.	Quantified Risk Assessment to include analysis of common mode failures.	Commissioning	DME
28	Risk	Update the Safety Case and Safety Management System.	To include the additional facilities in the safety case.	Safety Case to include managing the additional risks from construction activities.	Commissioning	DME
29	Aboriginal Heritage	Site clearance will be undertaken in accordance with the *Aboriginal Heritage Act 1972*.	To comply with the *Aboriginal Heritage Act 1972*.	To utilise the Aboriginal Heritage Management Committee in site clearance and curation of heritage material.	During construction	AAD

Abbreviations:

AAD = Aboriginal Affairs Department
AQIS = Australian Quarantine Inspection Service
CALM = Department of Conservation & Land Management
DEP = Department of Environmental Protection
DME = Department of Minerals & Energy
DPA = Dampier Port Authority
EA = Environment Australia
EPA = Environmental Protection Authority
LNG = Liquefied Natural Gas
MARPOL = Marine Pollution Convention
PER = Public Environmental Review
QRA = Quantified Risk Assessment
TBT = Tri-butyl tin

Attachment to Statement 536, change to definition of proposal

Proposal: North West Shelf Gas Project – Additional Liquefied Natural Gas Facility, Burrup Peninsula

Proponent: Woodside Energy Ltd

Change: in Schedule 1, from an additional two generating units (50MegaWatts total) to an additional four generating units (120 MW total).

Approval date: 25 February 2005

Attachment to Statement 536 – Change to Definition of Proposal.

Proposal: North West Shelf Gas Project Additional Liquified Natural Gas Facilities.

Proponent: Woodside Energy Ltd.

Change: in Schedule 1, Key Characteristics Table

From:

Element	Quantities/Description
Dredged seabed material for shipping lanes, ship berthing basins, and turning circles	2.7 Million cubic metres.

To:

Element	Quantities/Description
Dredged seabed material for shipping lanes, ship berthing basins, and turning circles	2.7 Million cubic metres plus approximately 1 Million cubic metres at Star Rock.

Approval Date: 7 / 6 /2005

Attachment to Statement 536– Change to Definition of Proposal.

Proposal: North West Shelf Gas Project Additional Liquefied Natural Gas Facilities Burrup Peninsula

Proponent: Woodside Energy Ltd.

Change: Schedule 1

From:

Element	Quantities/Description
Project Facilities	• Additional LNG processing trains; • 1 additional fractionation unit; • **4 additional power generation units;** • 1 additional LNG jetty berth; • 1 additional LNG storage tank; • Utilities upgrade (nitrogen plant, water treatment facilities, waste heat recovery from the existing power plant); and • Relocation of administrative complex
Additional LNG production	**8 million tonnes per annum (existing 7.5 mtpa)**
Additional Power supply	**Approx 120 megawatts (4 no. gas turbines (GTs))**

To:

Element	Quantities/Description
Project Facilities	• Additional LNG processing trains; • 1 additional fractionation unit; • **5 additional gas powered generation units** • **4 additional gas engines** • **1 BOG liquefaction unit** • **1 inlet air chilling unit** • 1 additional LNG jetty berth; • 1 additional LNG storage tank; • Utilities upgrade (nitrogen plant, water treatment facilities, waste heat recovery from the existing power plant); and • Relocation of administrative complex
Additional LNG production	**11 million tonnes per annum (existing 7.5 mtpa)**
Additional Power supply	**Approx. 150 megawatts (5 no. gas turbines (GTs)) and approx. 12 megawatts (4no. gas engines)**

Approval Date: 29/8/06

Attachment 4 to Ministerial Statement 536

Change to proposal approved under section 45C of the *Environmental Protection Act 1986*

This Attachment replaces Table 1 of Schedule 1 and revokes Attachment's dated; 11 February 2000, 25 February 2005, 7 June 2005 and 29 August 2006 to Ministerial Statement 536

Proposal: **North West Shelf Gas Project Additional Liquefied Natural Gas (LNG) Facilities**

Proponent: **Woodside Energy Ltd**

Changes:

- Add to the reserve source listed in Table 1 of Schedule 1 to *and gas received through onshore receipt points and tie-ins.*
- Add to the project facilities column listed in Table 1 of Schedule 1; *Onshore receipt points and tie-ins.*

Table 1: Summary of the Proposal

Proposal Title	North West Shelf Gas Project Additional Liquefied Natural Gas (LNG) Facilities
Short Description	The construction of two additional LNG processing trains, with support facilities, at the existing LNG plant on the Burrup Peninsula in the North West of Western Australia. This expansion will increase the LNG capacity of the plant from 7.5 Million tonnes per annum (Mtpa) to 18.5 Mtpa. The export of the additional LNG will require the construction of one additional LNG jetty.

Table 2: Location and authorised extent of physical and operational elements

Element	Location	Previously Authorised Extent	Authorised Extent
Project life		30 + years	30 + years
Reserve source		North Rankin, Goodwyn gas fields	North Rankin, Goodwyn gas fields **and gas received through onshore receipt points and tie ins**
Project facilities		• Additional LNG processing trains • 1 additional fractionation unit • 5 additional gas-powered generation units • 4 additional gas engines • 1 Boil Off Gas (BOG)	• Additional LNG processing trains • 1 additional fractionation unit • 5 additional gas-powered generation units • 4 additional gas engines • 1 Boil Off Gas (BOG)

Element	Location	Previously Authorised Extent	Authorised Extent
		liquefaction unit • 1 inlet air chilling unit • 1 additional LNG jetty berth • 1 additional LNG storage tank • Utilities upgrade (nitrogen plant, water treatment facilities, waste heat recovery from the existing power plant) • Relocation of administrative complex	liquefaction unit • 1 inlet air chilling unit • 1 additional LNG jetty berth • 1 additional LNG storage tank • Utilities upgrade (nitrogen plant, water treatment facilities, waste heat recovery from the existing power plant) • Relocation of administrative complex • **Onshore receipt points and tie-ins**
Main process		Shell Propane/Mixed Refrigerant (C3/MR) process with waste heat recovery	Shell Propane/Mixed Refrigerant (C3/MR) process with waste heat recovery
Additional LNG production		11 Mtpa (existing 7.5 Mtpa)	11 Mtpa (existing 7.5 Mtpa)
Additional land disturbance (laydown)		45 hectares (existing 231 hectares)	45 hectares (existing 231 hectares)
Additional power supply		Approximately 150 megawatts (5 no. gas turbines (GTs)) and approximately 12 megawatts (4 no. gas engines)	Approximately 150 megawatts (5 no. gas turbines (GTs)) and approximately 12 megawatts (4 no. gas engines)
Additional carbon dioxide emissions		2.9 million tonnes per annum	2.9 million tonnes per annum
Dredged seabed material for shipping lanes, ship berthing basins and turning circles		2.7 million cubic metres	2.7 million cubic metres
Additional permanent workforce		Approximately 40-70 persons	Approximately 40-70 persons
Construction workforce		Approximately 2,000 – 2,500 persons (peak)	Approximately 2,000 – 2,500 persons (peak)
Construction period		Approximately 3 years per train	Approximately 3 years per train

Note: Text in **bold** in Table 2 indicates a change to the proposal.

Table 3: Abbreviations

Abbreviation	Term
BOG	Boil Off Gas
GT's	Gas Turbines
C3/MR	Shell Propane/Mixed Refrigerant Process
LNG	Liquefied Natural Gas
Mtpa	Million tonnes per Annum
No.	Number

Dr Tom Hatton
CHAIRMAN
Environmental Protection Authority
under delegated authority

Approval date: 18 July 2019