

GENG5505 (Sem1, 2024) - Major Group Project Marking Guide

Group Name: Group 6			
Project Name: Waitsia Gas Project Stage 1			
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CONTENT ASSESSMENT CRITERIA

Marking	Very Poor	Fair	Good	Excellent	
Executive Summary (Maximum 1 page)					
Clarity & conciseness	0-1.5	2	2.5	3	3.5
Executive Summary - Total					
Section A: Case study writing (Approx. 1,500 words)					
Clarity & conciseness of project background	0	4	5	6	7
Quality & relevance of research material (i.e. info/facts)	0	4	5	6	7
Total Section A					
Section B: Case Study Analysis (Approx. 2,500 words)					
Introduction (clarity of purpose & conciseness)	0-1.5	2	2.5	3	3.5
Use & relevance of theories, models & frameworks	0	4	5	6	7
Depth of analysis, clear & logical argument	0	4	5	6	7
Total Section B					
Section C: Recommendations to the case (Approx. 2,000 words)					
Use & relevance of theories, models & frameworks	0	4	5	6	7
Relevance & justification of recommendations	0-2.5	3	3.5	4	5
Insight & synthesis, clear & logical argument	0-2.5	3	3.5	4	5
Total Section C					
Conclusion (Maximum 1 page)					
Logical summary	0-1.5	2	2.5	3	3.5
Conclusion - Total					
Table of contents (compulsory), references & appendices					
Appropriate table of contents, appendices & references	0-1.5	2	2.5	3	3.5
Table of contents, references & appendices – Total					
Group meetings (agenda & minutes)					
Relevance & consistency of issues & outcome	0	4	5	6	7
Clarity, conciseness, team reflections and leadership	0-1.5	2	2.5	3	3.5
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The University of Western Australia

Waitsia Gas Project – Case Study: Analysis and Recommendation

GENG5505: Project Management and Engineering Practice

15th April 2024

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Executive Summary

This report outlines an overview of analyses and recommendations for a “real-world” engineering case study through consideration of PMBOK concepts and the project lifecycle stages: Conceptualisation, Planning, Execution and Finalisation. The topic of this paper is Stage 1 of the Waitsia Gas Project, one of the largest gas fields in Perth, Western Australia.

This report is divided into three key sections:

- **Section A: Case Study – Information relevant to Waitsia Gas Project**
- **Section B: Case Study Analysis – Examining the issues encountered in each stage of project lifecycle using the information in Section A.**
- **Section C: Case Study Recommendation – Providing ideal recommendations that could be utilised to Waitsia Gas Project and how to implement these recommendations through project lifecycle stages.**

The Waitsia Gas Project Stage 1 is composed of two substages: Stage 1A and the Stage 1 Expansion. AWE (for Stage 1A) and MEPAU (for the Stage 1 Expansion) were the operators of the project; they are responsible for the Engineering, Procurement and Construction Management of the project. Stage 1 was evaluated at \$18 million, spanning over 2.5 years with the aim of developing 10TJ/day of natural gas capacity. Similarly, the expansion stage supply of up to 20TJ/day of gas spanning 4.5 years of duration. The entire Waitsia Gas Project (encompassing both Stage 1 and 2) aims to produce 280TJ/day of natural gas. The purpose of the Waitsia Gas Project was to of the expend the naturally abundant Waitsia gas fields using the existing local Xyris Production facility. Major stakeholders within the project include: Enscope and Upstream Production Solutions (outsourced contracted bodies), DMIRS and DWER (Government and Regulatory bodies) and the YMCA (a local community representative). Recommendations in this report delve into schedule and stakeholder management. Concepts and tools highlighted in PMBOK were utilised to reinforce the value of the suggestions proposed: project proposals, project charters, WBS, impact reports and power-interest matrices.

Overall, Stage 1 of the Waitsia Project was successful in developing part of one of the largest gas fields in the State and has substantial value as a case study subject for project management.

List of Acronyms

Term or Abbreviation	Definition
AWE	Australian Worldwide Exploration Limited Perth Pty
ASX	Australian Securities Exchange
Bcf	Billion cubic feet
DBNGP	Dampier to Bunbury Natural Gas Pipeline
DFES	(WA) Department of Fire and Emergency Services
DMIRS	(WA) Department of Mines, Industry Regulation and Safety
DWER	Department of Water and Environmental Regulation
EPA	Environment Protection Authority
EPCM	Engineering Procurement and Construction Management
FID	Financial Investment Decision
HAZOP	Hazard and Operability Study
HSE	Health, Safety and Environment
LOPA	Layers of Protection Analysis
MEPAU	Mitsui E&P Australia Pty Ltd
PESTELG	Political, Economic, Social, Technology, Legal and Environment
PGER(E)R	(WA) Petroleum Geothermal Energy Resources (Environment) Regulations 2012
PGP	Parmelia Gas Pipeline
SWOT	Strengths, Weaknesses, Opportunities and Threats
TBL	Triple Baseline
TJ/day	Terajoules per day
WBS	Work Breakdown Structure
WGPS1	Waitsia Gas Project Stage 1
WGPS1A	Waitsia Gas Project Stage 1A
WGPS1E	Waitsia Gas Project Stage 1 Expansion
WGP	Waitsia Gas Plant
XPF	Xyris Production Facility
YMAC	Yamaji Maripa Aboriginal Corporation

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1.0 Part A: Case Study

1.1 Project Introduction

The Waitsia Gas Project Stage 1 comprises of two substages, Stage 1A (completed in August 2016) and the Stage 1 Expansion Project (completed in September 2021), which aimed to deliver up to 30 TJ/day of natural gas to the DBNGP [1]. Stage 1A and Stage 1 Expansion were respectively operated by AWE (for Stage 1A) and MEPAU (for the Stage 1 Expansion); they are responsible for the Engineering, Procurement and Construction Management of the project. The first of the two substages was targeted at connecting two new gas wells to an existing production facility (Xyris) which was previously under care and maintenance [1]. The production facility was able to contribute up to 10 TJ/day to the PG) [1]. The second substage was focused on improving the production capacity of the XPF and re-directing the export gas to the DBNGP to account for future wells to be tied-in to the XPF [1].

1.2 Project Background

In the inland Perth Basin of Western Australia, the Waitsia Gas Project presents as quite a significant project for the Australian natural gas sector. As an acquisition occurred during the 1st Stage of development; AWE was the main responsible company and initiator, but presently MEPAU is constructing this project with other cooperation companies (Appendix A1).

The Perth Basin has been known for its rich hydrocarbon reserves (Appendix A section A1). It has been the centre of exploratory efforts for decades. The importance of the Perth Basin is further demonstrated by the Waitsia gas field. It is estimated that the Waitsia gas field contains an approximate total of 178 Bcf gross 2P reserves and 306 Bcf gross 2C resources [2].

This project has completed testing and quantitative supervision of flora and vegetation, groundwater and surface water, greenhouse gas emissions, and other projects to ensure compliance with environmental requirements standards [3] [4]. This demonstrates a commitment to sustainability and minimizing ecological impacts.

The Waitsia Gas Project is divided into two stages: Waitsia Gas Project Stage 1 and Waitsia Gas Project Stage 2. Through the entire Waitsia Gas Project it is estimated that the natural gas field can supply 280 TJ/day of energy, making the region an important natural gas supply area [1]. The project is expected to play a key role in Australia's energy strategy, creating over 400 job opportunities in mid-2023, alleviating some employment pressure; it obtained \$6 million in investment, promoting economic growth and transitioning towards a cleaner energy market [1]. This project has achieved common interests and sustainable development through the cooperation framework of local communities, government agencies, and enterprises.

The Waitsia Gas Project Stage 1's strategic planning, creative use of technology, and commitment to social and environmental responsibility make it an example of how to run a project well. Its development represents a significant advancement for Australia's natural gas resources and had a significant effect on the local economy, employment, and energy sector.

1.3 Project Purpose

Stage 1 of the project is purposed predominantly for three reasons. The first reason being that the client (AWE/MEPAU) had the intentions of exploiting the natural gas field which was discovered in 2014. This gas field (namely Waitsia) became the biggest discovery in the Perth Basin since 1966 and was also the largest discovery made onshore Australia in just under 40 years [5]. The gas reserves were determined to have great flow potential, and hence warranted extraction for economic benefit [5]. The second reason for this project was to make use of the local production facility which had not been actively operated since 2004 [6]. This would save a significant fortune by making an opportunity of using the existing and local infrastructure as opposed to designing, composing, and constructing a new facility. The third reason for undertaking this project also ties into the first reason with regards to projecting an expansion. For a large gas reservoir that was discovered and for the little capacity which the XPF initially provided, the expansion of the project was imminent. This expansion would also enable the client to tap into the domestic and industrial gas supply.

1.4 Key Stakeholders

There have been numerous stakeholders identified for WGPS1 and WGPS1A that were directly and indirectly affected. AWE was the initiator and operator of the project (Appendix A4). They bared the overall responsibility for its management and planning. In 2018, AWE was takeover by MEPAU, where MEPAU had a fifty percent stake over the entire Waitsia Project.

Government and regulatory bodies including DMIRS and DWER, participate in the approval and regulation of environmental plans to ensure project compliance with state and national environmental regulations. DFES provides advice and guidance on safety measures to ensure the safety of construction and operational activities (Appendix A4).

Indigenous groups and some landowners, including the Southern Yamatji people represented by YMCA, influenced by the project through consultations that ensure their land use rights and cultural heritage are respected, alongside environmental protections for their lands (Appendix A4).

Additionally, third-party contractors and service providers, such as Upstream Production Solutions Pty Ltd and Enscope, are key stakeholders (Appendix A4). Upstream Production Solutions Pty Ltd, as the contract operator, oversees the project's daily operational management. Enscope is responsible for EPCM, ensuring construction meets technical specifications and environmental standards.

A larger range of stakeholders based on the PMBOK definition of a stakeholder are identified as follows [7]:

- Board Members
- Staff
- Subcontractors
- Media Outlets
- Research and Academic Institutions
- The City of Shire of Irwin
- Local residents
- Environmental and Heritage Protection Groups

1.5 Major Project Issues and Difficulties

Though the WGPS1 was an overall success, there were still a few issues and setbacks that occurred through its two substages. Some levels of scope creep with respect to unexpected approval delays were evident in between the conceptualisation and planning stages of its life cycle. Aside from this, stakeholder satisfaction and continual contact post WGPS1A completion remains an unaddressed problem, as no action from AWE or MEPAU has been taken to address them.

1.6 Triple Bottomline Consideration

1.6.1 Environmental Sustainability

Western Australia's energy supply is still largely dependent on natural gas, on its own it constitutes 54.5% of the composition of energy used in 2021-22 by the State [8]. Though a transition into renewable sources is desired in the long term, it remains vital that energy is supplied in the present. The Project has a gas production capacity of 30 TJ/day and is currently supplying the state's domestic market through the existing DBNPGP [9]. In this way, the Project's contribution towards Western Australia's operation is not dismissible, which rectifies its use of natural non-renewable resources.

Stage 1 of the Waitsia Gas Project completed an environmental risk assessment and management plan in compliance to Regulation 18 and 20 of the PGER(E)R, that both recognises and introduces mitigation measures for potential environmental hazards that may arise from the project (Appendix A). The Project has taken into consideration its environmental impact on the surrounding area prior, during and post development.

1.6.2 Social Sustainability

The project's operators, MEPAU and Beach Energy, prioritised engaging with local communities to ensure transparent communication and collaboration throughout the project lifecycle. To ensure public transparency, AWE and

Beach Energy Ltd developed the Project Development deed, in which outlines their priorities, provided publicly.

The operators acknowledge the potential enhanced employment opportunities associated with the project. To further reinforce this welcomed event, the project aims to assist in upskilling and provide training opportunities to facilitate work readiness and employment [10]. Moreover, consultations with indigenous groups, landowners, and other stakeholders to address concerns, respect cultural heritage, and maximise opportunities for local participation and benefits have been implemented when satisfying social sustainability goals. By fostering inclusive practices, respecting community interests, and investing in social infrastructure and development initiatives, the Waitsia Gas Project endeavours to nurture lasting social benefits and enhance the well-being of the communities it operates within [10].

1.6.3 Economic Sustainability

Large resource-intensive projects often affect the local economy in which they operate. Additionally, energy is paramount for state operations that contribute to the economy and as a sellable resource. In this way, the Waitsia Project's venture to contribute to energy security has a direct impact on Western Australia's economy. During the project, local contractors were hired to aid the project's activities [10]. Their work culminated to an estimated value of two million dollars [10]. As the onsite employees often spent their money nearby, there was also passive contribution to Dongara's local economy [10]. With respect to energy security within Western Australia, Mitsui signed a 4.5-year gas sales agreement with Alinta Energy to supply up to 20TJ/day of gas from the Waitsia Field [11]. This will add to the energy being supplied to Perth's Metropolitan areas, and hence aiding in powering the State's economy.



2.0 Part B: Analysis



2.1 Conceptualisation

2.1.1 Scope Identification

Stage 1 comprises of two substages 1A and 1E, Enscope contributed to the project (i.e., 1A) working alongside with AWE. Through the installation of two new flowlines and new trucklines according to AS2885, the project links two new gas wells to the XPF [12]. The low temperature separation processing facility at Xyris, which under care and maintenance before, underwent modifications and upgrades that included the installation of a new gas to gas heat exchanger, a new power generation plant, and control systems. Additionally, all remaining equipment was restored to working conditions. The fabrication of tanks and process pipes were included in the project's scope as outline below. After that, the assembled components were delivered to the installation location [13].



The scope of WGP1A comprises of following key components according Enscope (Appendix C19):

- 2x Well pads,
- 2x Flowlines,
- 6.5km DN150 Trunkline,
- Pipeline facilities, and
- LTS gas processing facilities.

The second sub-phase to Stage 1 is the expansion (1E) where Beach and MEPAU together signed a gas sales agreement with Alinta Energy for the supply of up to 20TJ/day of gas from the Waitsia Field [14].

The WGPs1E Project comprises upgrades to the existing equipment and installation of new infrastructure including:

- Upgrade and install new infrastructure within the XPF,
- Connecting the Waitsia-02 appraisal well to the XPF,



- Evaporation pond construction, and
- Construction of the Waitsia Gas Export Pipeline and compound to connect the XPF to the DBNGP.

2.1.2 Risk Identification

Risk identification is a vital procedure for identifying, assessing, analysing, mitigate, monitoring & evaluate the overall risk of the project [15]. It is vital that all risks are identified within the completion of the concept stage as this is the most impactful time to proactively manage risk [15]. A framework such as SWOT and PESTELG analysis can be used to identify potential source of risk both internal and external [15].

A risk assessment is outlined (see Appendix A2, B1 and B2) by MEPAU for Stage 1, includes environmental and greenhouse gas management plan. Additionally, identifies potential hazards and how management and mitigation is measured. Environmental plan and GHG emissions as previously mentioned in section 2.1.1 produces an effect in the construction of WGP and supporting infrastructure. Based on the assessments conducted by MEPAU's WGP2 which includes water management, flora & vegetation, and greenhouse gas emissions, which can be inferred a similar process was used for Stage 1.



2.2 Planning

2.2.1 Schedule Development

Prior to the kick-off of Waitsia Stage 1A in May 2015 AWE had begun to transition the project into the development stage where they had anticipated the production of 'first gas' by mid-2016 (Appendix C19 and C10). The kick-off, however, was subject to regulatory approvals (Appendix C16). The actual completion of Stage 1A was recorded as August of 2016 with reports of this stage of the project being completed on schedule (Appendix C19). This would imply that the scheduled project start date was delayed by a couple of months due to obtaining the regulatory approvals required.

In July 2019, Beach Energy and MEPAU had reached a FID for the Waitsia Stage 1 Expansion and had signed the gas sales agreement with Alinta Energy to inject 20TJ of natural gas per day into the DBNGP from 1st July 2020 (Appendix C17 and C14). On the 1st January 2020, the XPF was shut in for the purpose of commencing construction activities which was intended for completion by July of 2020 (Appendix C18). The activities with regards to the expansion were completed as of September 2020 (Appendix C13) which infers that the schedule of the expansion stage had encountered two months of delays.

2.2.2 Scope Refinement

The scope of the project as detailed in Section 2.1.1, was likely to have experienced a range of events relating to the onset of scope creep as both Stage 1A and Stage 1 Expansion of the project had experienced significant schedule delays as discovered in Section 2.2.1. In the case of Stage 1A, the developed schedule for the completion of the project was noted to be ‘tight’ (Appendix C19). A tight schedule is generally likely to increase the likelihood of conflicting resource assignments, pressure from stakeholders, and ignoring specific instructions which are likely events which were experienced during this substage [15].

During the Stage 1 Expansion, the two most significant potential sources of scope creep include the delay in resource availability due to the onset of COVID-19. As reported by MEPAU, they were content with the progression of the project despite the COVID-19 restrictions [10]. Ultimately this infers that more significant delays would be attributed to the availability of resources (related to procurement). Reportedly, for the expansion they had procured their compressors from Canada and pipes from China – both of which were significant components of the expansion project [16].

2.2.3 Budget Development

AWE's priority at the time of developing the project was to fast track the project and execute it at reduced costs due to negotiations of reduced construction and drilling rates (Appendix C15). It was also notable that the Managing Director and CEO at the time aimed to reduce the exploration and development costs during the 2016 financial year to prioritize value-adding projects like Waitsia. The budget for Stage 1A was estimated at \$18 million (Appendix C12). In 2016, financial measures such as reducing corporate overheads by 41%, reducing total investment expenditure by 55%, reducing recurring capex of existing projects and exiting out of USA and China were all taken to ensure safe capital for the Waitsia project (Appendix C9). The gross development capex estimate was re-evaluated at the beginning of 2016 to be \$17.5 million (Appendix C11). Since MEPAU had taken over AWE in 2018 (MEPAU Acquisition of AWE), it can be assumed that a similar financial philosophy governed the budgeting of the project considering its significance in Western Australia.

2.2.4 Stakeholder Involvement

Stakeholders are defined as those who contribute to or are impacted by project outputs [15]. Gas development touches on local interests and impacts the environment. In the WGP, communication and management with beneficiaries are emphasized, implementing various participation strategies and plans.

In the planning phase, AWE emphasized communication and management with beneficiaries like landowners, local communities, and governments in Waitsia Gas Project Stage 1A. This engagement is detailed in AWE's 2015-16 Annual Sustainability Report, it included various activities such as community information sessions, face-to-face meetings, and distribution of information flyers, aimed at enhancing understanding and dialogue with the local community [17] [18].

Reed (2008) highlighted that the complexity and dynamism of environmental issues necessitate a decision-making process that is flexible and transparent,

inclusive of a diverse range of knowledge and values [19]. AWE's strategy reflects this by engaging key stakeholders, including residents and governments in its decision-making. This ensures broader acceptance and support for project outcomes, enhancing their sustainability and permanence.

AWE showed its dedication to environmental management by actively reporting greenhouse gas emissions to the Australian government and joining the Carbon Disclosure Project. This action reflects its efforts to keep a positive relationship with environmental groups and stakeholders. Additionally, AWE was transparent in reporting Lost Time Injuries (LTIs) and environmental events, quickly sharing information with the public [18]. This transparency highlights AWE's commitment to safety and environmental care.

In Waitsia Gas Project 1 Expansion, MEPAU included detailed tables of Stakeholder Consultation Undertaken in their construction environment plan summaries for WGPS1E, showing their commitment to thorough stakeholder engagement as seen in Appendix A of Stage 1 Expansion Project in 2019. These tables not only demonstrate a structured approach to engaging with stakeholders, such as the Yamatji people through the Yamatji Marlpá Aboriginal Corporation (YMAC), but they also highlight the transparency and accountability of documenting and reporting on these interactions, further emphasizing AWE's commitment to inclusive and respectful stakeholder engagement.

2.3 Execution

2.3.1 Quality Assurance, Control & Improvement

Assuring project activities and outputs are in line with the standards of quality, set by project initiators and expected by stakeholders, is an important aspect of consideration during a project's execution stage. As an integral component of AWE's Year End Financial Reports, an audit is conducted on the organisation, and therefore its management of projects, to ensure professionalism and integrity. Relevant to the timeline of WGPS1A and found in C5 of Appendix C,

EY Australia was brought in to conduct an audit on the organisation, for which they declared that no contraventions had occurred.

From Appendix C and based on PMBOK's outlined tools for managing quality, it is reasonable to assume that AWE exercised quality assurance, control, and improvement to some level [7]. From the onset of the Project's execution, various updates from AWE were provided through ASX Announcements. AWE's Managing Director and CEO at the time, David Biggs, often addressed the announcements, detailing ongoing analysis of project activities ranging from initial gas flow tests to consequential production upgrades, followed by the Project's first sales to the overall performance of the gas wells erupted in the Stage 1A (see sections C1 to C4 in Appendix C). Based on the types and frequency of the updates, which were on average every one to two months from 2014, it is plausible that the organisation followed a Plan, Do, Check and Act (PDCA) cycle for managing quality assurance.

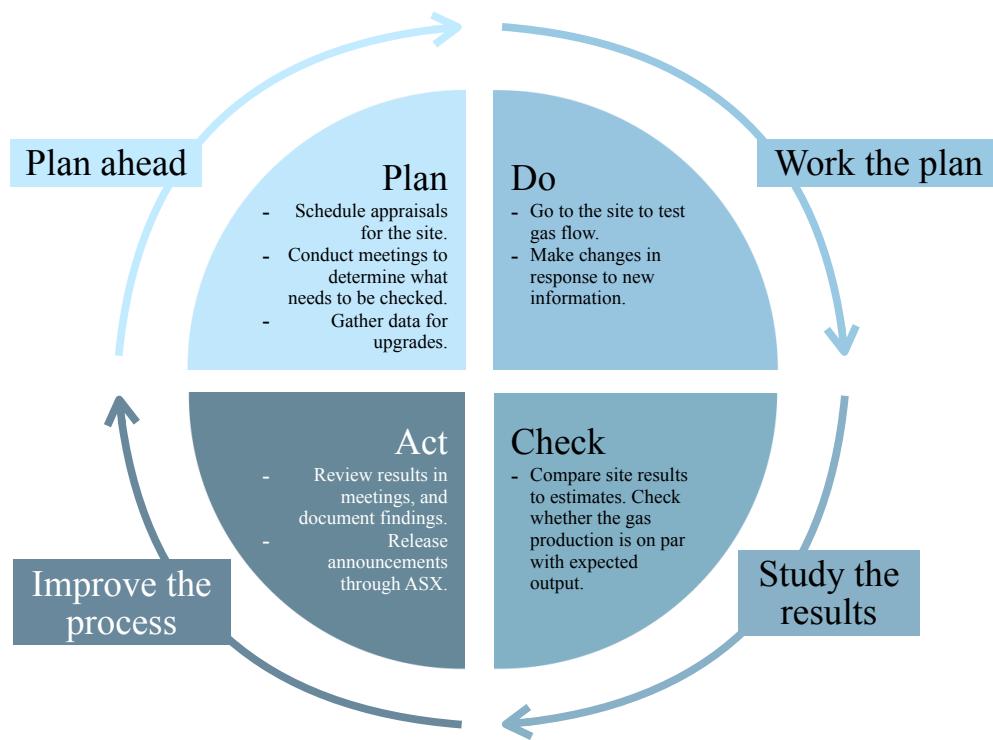


Figure 1 WGPS1E Adapted PDCA cycle to highlight the quality management activities undertaken by AWE.

AWE consistent effort to highlight scope and site upgrades, in addition to contracting an audit for their organisation, and consequently for this project,

shows that quality assurance, control, and improvement are within their project management priorities.

2.3.2 Risk Management

Managing risks during the execution of a project is important to ensure the safety of workers involved, and the continuation of the project. As highlighted in AWE's 2015 Sustainability report, the organisation undertook numerous safety audits across operations, such as the WGP, to ensure activities are conducted in a safe and responsible manner [17]. This auditing seeks to meet legal and regulatory requirements in the location of operation. Post-audit activities involved refining contractor management, regulatory compliance, risk management and incident management [17]. At the end of the 2014-2015 financial year, AWE revised the key performance indicators (KPI) to improve on HSE performance [17]. In particular, AWE aimed to improve safety performance among subcontractors, due to the forecast of increased drilling and development activity in the Perth Basin, where WGP is located [17].

2.3.3 Project Performance

AWE utilised a myriad of communication tools and formats to deliver critical information to relevant parties and stakeholders within the Waitsia Gas Project during its execution. Through David Biggs's, transcribed commentary on project updates (Appendix C), it can be assumed some level of internal communication, such as meetings or informal messaging, was utilised within AWE to review project performance. Biggs announces updates regarding site performance and investment progression/changes, along with corporate activity, these can be found in Appendix C. Knowledge and information of these topics are likely to have been formulated through the communication management mediums mentioned before.

In terms of communication with investors, governing agencies and other relevant stakeholders, AWE provides a Year End Financial Report (YEFR) and Annual Report disclosing key performance indicators with respect to all

projects for which they are responsible. In both their 30 June 2016 YEFR and 2016 Annual Report, they highlight an increase in the company's reserves and contingent resources due to the Waitsia project. Additionally, their Quarterly Report (C7 in Appendix C) specifies the company's investment expenditure along with gross production of Waitsia Stage 1A. The exhaustive documentation AWE formulates is a result of their well-developed system for communication management.

2.4 Finalisation and Evaluation

The conclusion of a project involves several key steps and activities to ensure that all the aspects of the project are completed satisfactorily to seamlessly transition into its intended operational stage. For the operational phase of Stage 1A, the target entails achieving a production capacity of 10TJ/day. The following project management competencies pertinent to finalisation will be discussed in this analysis, integration management, and cost finalisation. Details on these aspects are located within the project finalisation report.

2.4.1 Cost Management

Finalisation of financial matters includes budget reconciliations, payment of contractors and suppliers and resolution of any outstanding financial matters. Additionally, considering the transitional development of the project into Stage 2, potential expenditure outside of operational expenses may be involved in financial closure. Unfortunately, the project finalisation report for the Waitsia Gas project stage 1 was not able to be acquired, hence information pertaining to the financial closure was gathered from other sources. It should be noted that analysis based on these sources may carry some level of assumption and uncertainty.

Quarterly reports from AWE (see Appendix C) provide insights on final financial costs and decisions regarding the project. In the March 2016 quarterly report (Appendix C20), it was disclosed that the construction of Stage 1A of the project has commenced following the finalisation of construction contracts in

March. Moreover, engineering, execution, and management costs for Stage 1A of the project were approximately \$18 million, with a net cost of \$9 million to AWE. Notably, around the commencement of construction of Stage 1A, AWE was able to pay off millions of dollars of debt and achieve a net cash of \$52 million.

In the June 2016 quarterly report (Appendix C8), Stage 1A construction was nearing completion, expected to transition into its operational phase in August 2016. AWE notes that over the 2015-2016 financial year, the company was able to operate sustainably by controlling cost, optimising operating structures, reducing and reprioritising investment spends, and portfolio management (involved asset liquidation). It can be assumed that this decision was likely made to support Stage 1A of the Waitsia Gas project, consistent with AWE's executive decision of focusing of the Waitsia project in the 2014-15 YEFR (Appendix C15) and reiterated in 2015's sustainability report [17]. In this quarter, development expenditure increased by 52% to \$30 million. This rise was partially attributed to development costs for the Stage 1A Waitsia gas project. For FY 2015-16, development expenditure was \$120 million (below the \$125 to \$135 million guidance range).

It is worth highlighting that information from the project finalisation report and the Stage 1A financial investment decision report would have been more beneficial for this analysis.

2.4.2 Integration management

Integration management involves the processes required to integrate the project aspects and in the scenario for the finalisation stage, it delves into the closing of the project. Once again, as there is a subsequent stage to this project, details such as potential changes in cost, procurement, risk (resulting changes in human resources and stakeholders) may be outlined in closing and handover documents. Moreover, much of the information can be extracted from initial planning for Stage 2, as ideally the initial planning phase would discuss prior problems from Stage 1 and ongoing considerations.

In the Environmental Referral Supporting report for Stage 2 (Appendix 21), MEPAU used lessons learned from Stage 1 to improve interactions with land users. In one scenario, AWE ensured that Stage 1 did not compromise Irwin Park Farm productivity. Resultingly, MEPAU took that into consideration when planning the proposal for Stage 2. Once again, acquiring the project finalisation report and any lessons learned documents from Stage 1 would have proved to be substantial in this analysis.



(See the next page)

3.0 Part C: Recommendation

This section outlines recommendation and implementation to the Waitsia Gas Project by establishing project management tools that are applicable to issue areas identified as schedule and stakeholder management.

3.1 Schedule Management

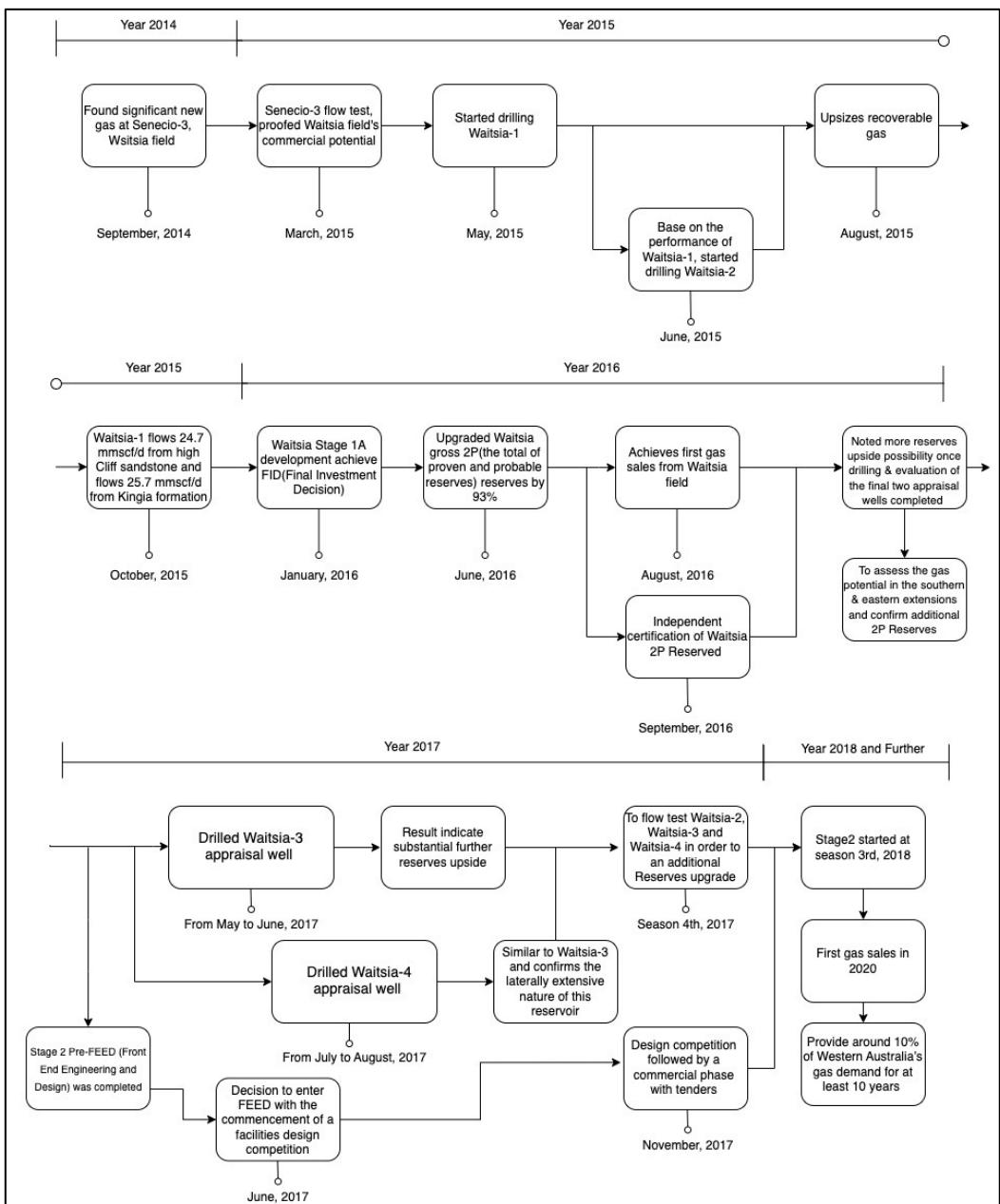


Figure 2 Mapped out Waitsia Gas Project Timeline, indicating a linear schedule.

A project schedule correlates tasks with their anticipated start and finish times, resources, and milestones. As mentioned in section 2.2.1, WGP1A began in May 2015, with ‘first gas’ production by mid-2016, albeit facing couple of months of delays due to regulatory approvals. Additionally, the expansion stage was delayed by two months due to construction activities in XPF. Figure 3, shown above, provides a project timeline of events surrounding the WGPS1.

3.1.1 Recommendations

Parallel Timeline for Activities:

As shown in Figure 2, it appeared that activities in WGP1A were run in a linear fashion; we propose that AWE should have instead designed activities to run in parallel. A parallel schedule would have helped AWE perform even better. Given that AWE restructured their internal personnel, they had an adequate workforce to carry out a parallel timeline (Appendix C22). 

Utilising Additional Schedule Management Tools at Life the Different Cycle Stages:

Please note that due to our inability to acquire certain documents, the following recommendations delve into some Project Management tools of interest, where we propose their inclusion as our recommendation. This does not imply that AWE did *not* incorporate these tools into their project management; rather, it reflects our unsuccess in locating evidence of their implementation.

Life Cycle Stage	Recommendation
Concept	1) Collecting project proposal and project charter.
Plan	2) Developing a schedule for tasks and milestones.
Execute	3) Utilising Gantt charts or WBS to track progress on tasks.
Finalisation	4) Conduct impact and present to the stakeholders.

Table 1 Recommendations for the Waitsia Gas Project Stage 1 based on Coursera [20].

1) Collecting Project Proposal and Project Charter:

The Project Proposal defines the scope, key dates, specifications, and objectives while the project charter outlines comprehensive details which facilitates completion, including risks, benefits, constraints, and stakeholders [20].

2) Developing a schedule for tasks and milestones:

Creating a detailed timetable with activities and deadlines is essential to successful project management. This means predicting the time needed for each work, segmenting the project into manageable tasks, and adding buffers in case of last-minute changes or delays. As a safety measure, time buffers permit modifications without endangering the timeline. Through careful preparation and distribution of time, AWE/MEPAU can maximise output, reduce delays, and guarantee project completion on schedule.

3) Utilising Gantt Charts or WBS to track progress on tasks:

WBS and Gantt charts are two essential tools for effectively tracking progress. Gantt charts provide a graphical representation of project schedules, highlighting work dependencies and milestones, allowing AWE/MEPAU to

track advancement and any possible obstacles. Similarly, WBS provides a hierarchical picture of tasks and their interactions by breaking the project down to smaller manageable steps. Through utilising these tools, AWE/MEPAU may be able to distribute resources efficiently, adapt to changing priorities, ensure the project stays on track towards successful completion and stakeholder's expectation.

4) Conduct an impact report and present it to the stakeholders:

An impact report is a powerful tool that showcases the positive impact an organisation has made in the community or industry. This method helps evaluating and communicating a project's success as well as demonstrate its value to the stakeholders [21]. For AWE/MEPAU provide a comprehensive impact report allows the organisation to:

- Analyse and communicate the project's success.
- Demonstrate the impact and value it has brought to stakeholders.
- Building trust with the stakeholders.
- Attracts potential investors and partners.
- Identify area of improvement and future growth.

3.1.2 Implementation

Project Proposal and Project Charter:

To implement the project proposal, MEPAU/AWE should aim to deliver a formal document which indicates items of the scope that were mentioned in Section 2.1.1, and indicating any key dates which would align to the major milestones identified in the schedule. Such milestones should include the design and construction completion dates with respect to each item in the scope. Specifications should also be generated which would indicate the required gas composition, temperature, pressure, flowrate, preferred materials (for equipment/piping) and preferred vendors (based off previous experience). Objectives should be raised in the proposal which should reflect the triple bottom line. Main objectives would outline the environmental footprint and

what safety would look like (quantitative/qualitative) which would be accompanied by the cost and time considerations.

The project charter should outline risks, benefits, constraints, and stakeholders. The risks mentioned will involve primarily environmental risks as described in Appendix A2, since many design, construction and commissioning risks will not be identifiable unless referenced from previous projects. The benefits should mention project attributes such as utilising the local workforce, supporting local businesses, and increasing the energy availability for domestic and industrial use. The constraints and stakeholders should be mentioned adjacently, as the major stakeholders involved (described in Appendix A4) would ultimately dictate the constraints of the project to either compromise or account for requests aside from those outlined in the scope. Other major constraints to mention would be the time and budget, which should be described in detail and acknowledging sufficient float time and contingent funds.



Schedule for Tasks and Milestones:

The schedule which MEPAU/AWE should implement must successfully section the profile of the project into manageable tasks. This would mean identifying the major milestones of the project such as issuing formal drawings, the completion and implementation of safety studies (like HAZOP and LOPA), the procurement of important items as mentioned previously, the construction of flowlines, well pads, the completion of the XPF upgrade, and the transition from dry to wet commissioning for instance.



Track Progress:

MEPAU/AWE should aim to implement both tools during the project. In terms of utilising the Gantt chart, it would be useful in identifying the critical path items and developing a foundation for the schedule they would be working off. This would then translate into the WBS where smaller items may be tasked and managed accordingly. For instance, this may look something like identifying the procurement of the compressors as a critical path item. Some smaller tasked items which may derive from this activity would include the design (if the



catalogue of compressors available does not fit the design requirements), fabrication/manufacturing, and transportation.

Impact report:

For the impact report developed by MEPAU/AWE, it should incorporate results relating to the triple bottom line considerations. This should focus on aspects of the project such as the number of safety incidents, the number of local contractors employed, the number of local jobs supported, the total emissions throughout the life of the project, the cost of the project, and the time taken to complete the project. For instance, the report may mention the use of 'In-situ construction' which enabled work opportunities for 7-10 residents in the local town of Dongara during the construction of Stage 1A [10].

3.2 Stakeholder Management

Environmental Concerns:

Two years post the completion of WGPS1A, the Dongara local people remained concerned about water safety [22]. The influence by using existing drilling technology and traditional gas drilling might pollute the underground water [23]. In addition, air quality is also a major concern [22], with local communities concerned about pollution from gas flaring, including odours and emissions of harmful gases such as methane.

Communication Breakdown:

From 2018 AWE was taken over by MEPAU. At the same time, their website (www.awexplore.com) was also terminated as a result [24]. After deregistration, not only did a series of publicly available file searches become difficult, but the former window websites with residents no longer exist.

This information might have been hidden because of the COVID-19 epidemic situation and the leading role of the project change. It gives a reminder that when a company changes its ownership, it is very important that the handover and management of important projects and documents does not result in the loss of any historical information that could undermine the public's and other stakeholders' need

for transparency and information. Otherwise, as the project develops, these issues may further affect the government's attitude and the further development of the project.

Stakeholder Differentiation:

From 2016 AWE Sustainability Report, AWE does not effectively differentiate stakeholders [18]. For example, for upstream construction companies and contractors, they are referred to as shareholders, but for residents, there is no specific distinction between residents in residential areas, small business owners, and farmers. Further segmentation of stakeholders may better balance the interests of all parties and identify hidden contradictions. This is more important in seemingly simple interest relationships.

Meanwhile, AWE, in its AWE Limited Sustainability Report 2015, emphasized engagement with local communities and demonstrated commitment to the public's right to know and sustainability, with insufficient reference to third-party contractor's stakeholder management strategies [17]. This lack of strategy may be partly due to the commercial sensitivities involved, where companies may be concerned that over-disclosing details of their co-operation may affect competitiveness or expose trade secrets. However, this does not mean that transparency and accountability cannot be improved. Companies should find the right balance to ensure that even commercially sensitive partnerships maintain a certain level of transparency while respecting confidentiality.

3.2.1 Recommendation

Ongoing Stakeholder Management - Utilizing RACI matrix combined with a Power and Interest Matrix:

The RACI matrix developed by Edmond F. Sheehan in the early 1950s is a responsibility assignment chart that maps out every task by setting project planning, environmental management, community engagement and compliance reporting as standards.

A "power and interest matrix" is recommended because the company needs to effectively manage the fundamentally complex relationships and varied interests that can affect the success of the project [15]. This approach allows for the identification and categorization of stakeholders based on their level of power and concern and interest in project outcomes.

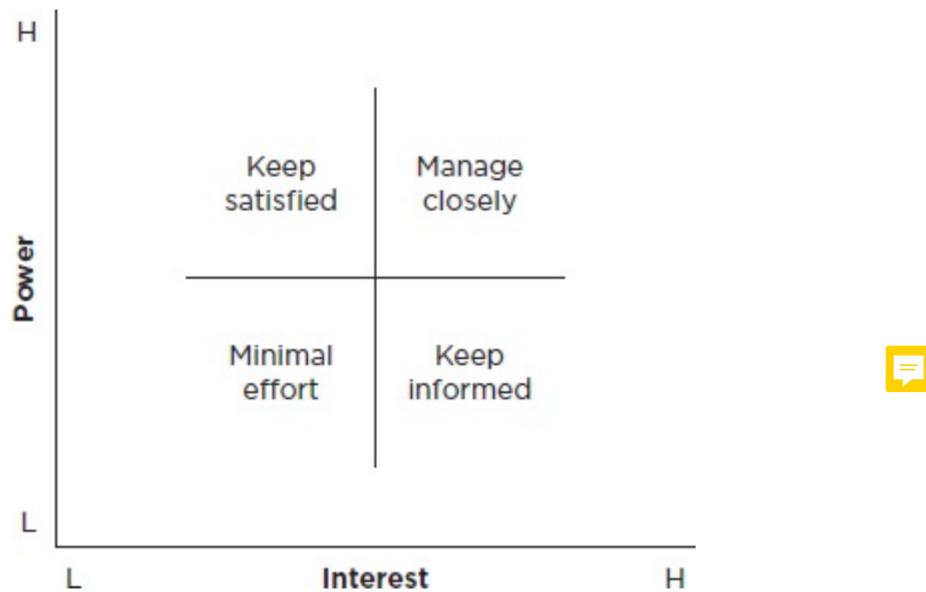


Figure 3 Power and Interest Matrix from Table 3.2 in the Stakeholder Management – Chapter 3 of PMBOK [7].

Combining these approaches provides a comprehensive framework for the project, ensuring that the roles and level of involvement of all stakeholders are clear. The Power-Interest Matrix helps to understand who should be closely managed and catered for, while the RACI Matrix ensures that there are clear responsibilities and communication channels for each task. This combined approach not only enhances the allocation of resources and risk mitigation, but also improves the clarity and effectiveness of targeted communication strategies, strengthens the ability to build trust, identify and mitigate risks.

Differentiated Mechanisms and Communication Strategies for Targeted Stakeholder Management:

We recommend that the needs and characteristics of project stakeholders are clarified in detail. A competent matrix for managing stakeholders should

ideally contain: the name of the individual or group, the group they represent, the role they play in the project, and their needs. Different stakeholders have different levels of influence and interest in the success of the project, so it is important that the communication strategy with them reflects this variability and ensures that their needs feel valued and heard.

By ensuring timely and effective communication with all stakeholders, project transparency can be enhanced, and stakeholder satisfaction increased. An effective communication strategy is more than just one-sided messaging; it is the key to exchanging information to better enable project implementation, build trust, and identify and mitigate risks.

Stakeholder Responsibilities Information			Format required	Frequency	Who
Sponsor	Determine the overall business objective	<ul style="list-style-type: none"> ■ Schedule delivery ■ Budget ■ Expenditure ■ Priority status 	Meeting	Monthly	Project manager
Project manager	Manage project performance	<ul style="list-style-type: none"> ■ Cost overruns ■ Delays ■ Team issues 	Meeting	Weekly	Team SME
SMEs	Design and installation	<ul style="list-style-type: none"> ■ Technical performance issues 	Walkthroughs	Daily	Project manager
Contracts manager	Contract administration	<ul style="list-style-type: none"> ■ Performance breach ■ Variations 	Meeting	Monthly	Project manager
Quality manager	Quality assurance	<ul style="list-style-type: none"> ■ Inspection data ■ Defect lists ■ Replacement details 	Inspection test results and reports	Weekly	Project manager Auditor

Figure 4 Abstract from Table 3.10 in the Stakeholder Management – Chapter 3 of PMBOK [7].

3.2.2 Implementation

Map RACI & Power and Interest Matrix:

According to the stakeholder's analysis of Waitsia Gas Project 1A, we can develop RACI and Power-Interest matrices.

Stakeholder	Project Planning	Environmental Management	Community Engagement	Compliance Reporting
AWE Limited	A	A	C	A
Upstream Production Solutions Pty	R	R	R	R
Enscope EPCM	R	C	-	C
Local Community and Landowners	-	C	R	I
Environmental Groups & Non-Government Organisations	-	C	C	I
Regulatory Bodies (DMIRS, EPA, DWER)	-	C	C	R

Table 2 RACI Matrix based on the stakeholder analysis. A, C, R, I short letters to clarify roles and responsibilities. They respectively represent: Accountable for holding the final decision-making power and ownership for task completion; Responsible for doing the work to complete the task; Consulted for offering input from expertise in a two-way communication; and informed for needing to be kept in the loop in one-way communication. “-” indicates no necessity for involvement.



Score	Descriptor	Stakeholder
5	Extreme degree of interest	AWE Limited;
4	High degree of interest	Local Community and Landowners; Environmental Groups & NGOs; Upstream Production Solutions Pty Ltd; Enscope EPCM; Subcontractors
3	Moderate degree of interest	Regulatory Bodies (DMIRS, EPA, DWER)
2	Slight degree of interest	N/A
1	No measured interest	N/A

Table 3 Mapping stakeholders based on their interest for the project.

Score	Descriptor	Stakeholder
5	Extreme degree of power	AWE Limited; Regulatory Bodies (DMIRS, EPA, DWER)
4	High degree of power	
3	Moderate degree of power	Upstream Production Solutions Pty Ltd; Enscope EPCM ; Subcontractors
2	Slight degree of power	Local Community and Landowners; Environmental Groups & NGOs
1	No measured power	N/A

Table 4 Mapping stakeholders based on their influence over the project.



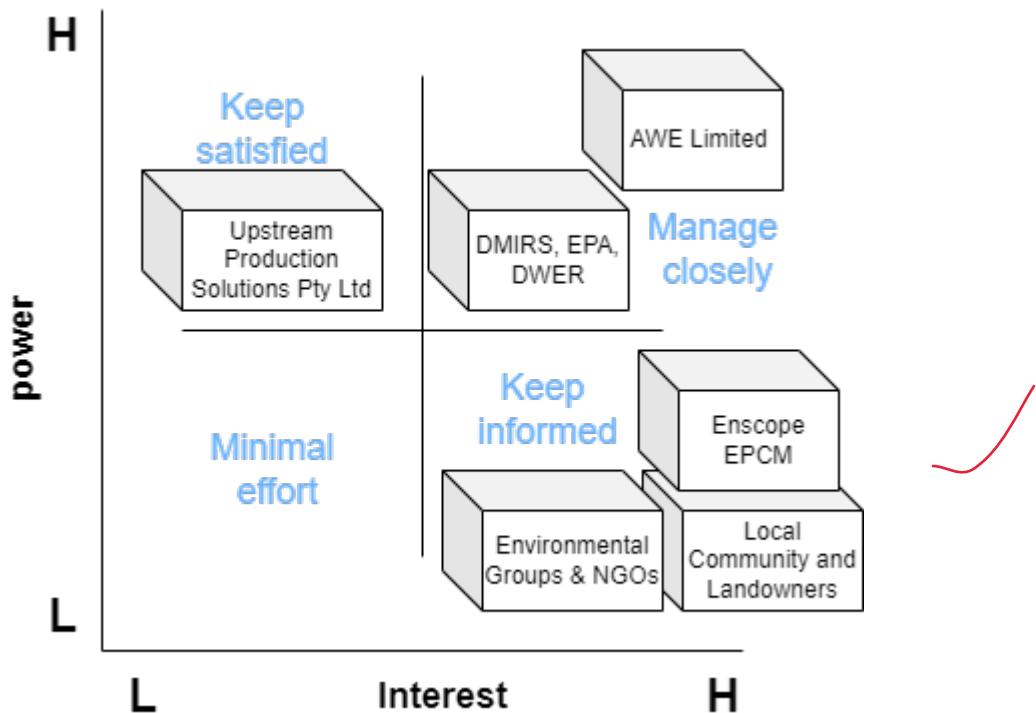


Figure 5 An adapted power-interest matrix to include WGPSI Stakeholders.

Once the matrix has been created (post-scoring the power-interest matrices), it is important to revise it at least quarterly or at important project milestones, in response to dynamic changes in stakeholders to adjust the stakeholder management approach in a timely manner.

Manage Communication:

Firstly, as can be seen from WGPSI at least, MEPAU should re-establish their online communication channels, or restore relevant content from the previous AWE website, to ensure that information about AWE's pre-2018 projects can remain open and transparent to ensure ongoing dialogue with stakeholders.

The platform should restore trust and transparency by providing regular updates and receiving feedback.

Develop a communication strategy sheet with other stakeholders. Local communities may need more in-person engagement, while regulators may need a more formal approach to communication. Examples include establishing a local office where residents can access information, ask questions, and communicate with project representatives; convening regular

meetings of resident representatives to discuss project progress and other community concerns, and using feedback from these meetings to tailor project operations to the community's expectations and improve environmental management practices. All communication processes with stakeholders should be well documented, and important outcomes need to be made available to the public in a timely manner to ensure accountability.

Most Importantly, communication strategies need to be adjusted over time and as the project progresses, and their effectiveness needs to be regularly evaluated.



(See the next page)

4.0 Conclusion

The WGPS1 characterises significant development in the energy sector of Western Australia. With the intent of expending the Waitsia gas fields, the project has made significant contributions to the local economy, energy production, and employment. The project was subjected to strict regulatory supervision and worked in-line with regional development interests. Influence from and enforcement by DMIRS, EPA, and DWER ensured that the project complied with environmental and safety standards.

Overseeing the Engineering, Procurement and Construction Management of such a large-scale project is challenging, yet AWE and MEPAU have set a great precedence with this project. Not only were they on-time in their delivery of project outputs, but were also in budget. Several project management factors play into their success, and were analysed with respect to the Conceptualisation, Planning, Execution and Finalisation project life cycle stages. Through clear scope and risk identification AWE and MEPAU were mostly able to avoid major project issues. Relatedly, schedule and budget development in concert with scope refinement helped prevent any ambiguities from persisting through the rest of the WGPS1. By ensuring third-party audits are conducted on the organisation and their projects during execution stages, the quality of project deliverables can be maintained. Furthermore, assuring the safety of project workers and their employment environments is not only vital for the sustainability of the project but also for the organisations involved. Reporting the satisfaction of requirements is a key part of closing a project, as covering cost and integration are particularly important to stakeholders.

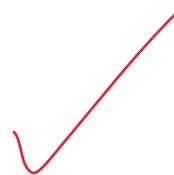
Despite the uncontested success of the WGPS1, some recommendations with respect to schedule and stakeholder management were identified to further improve the project and address minor issues relating to accountability and communication.

Conclusively, Stage 1 of the Waitsia Gas Project was successful in a number of different project management areas and yielded a valuable energy resource for the State. In consideration of the TBL of sustainability, this project falls within reasonable limits of what is required to sustain the current population without adversely affecting future generations.

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6.0 Appendices

Appendix A – WGPS1E Plan Summary Documents

Relevant abstracts from the *WAITSIA STAGE 1 EXPANSION PROJECT: FACILITIES CONSTRUCTION ENVIRONMENT PLAN SUMMARY* and *WAITSIA STAGE 1 EXPANSION PROJECT: WAITSIA GAS EXPORT PIPELINE CONSTRUCTION ENVIRONMENT PLAN SUMMARY* documents.

A1. Organisation and Project Background Information

[Waitsia Stage 1 Expansion Project: Waitsia Gas Export Pipeline Construction Environment Plan Summary](#)

1.0 INTRODUCTION

1.1 Background

AWE Perth Pty Ltd (AWE) is the project proponent for the Waitsia Stage 1 Expansion (WS1E) Project. AWE and Mitsui E&P Australia Pty Ltd are wholly owned subsidiaries of Mitsui & Co. Ltd., and combined they form the unified brand Mitsui E&P Australia (MEPAU).

MEPAU is the Operator of the Waitsia gas field within the onshore North Perth Basin located within the Shire of Irwin, approximately 20 km southeast of Dongara and approximately 350 km north of Perth. The Waitsia gas field occurs within the Geraldton Sandplains bioregion of Western Australia (WA) in predominantly cleared agricultural land.

The Waitsia gas field is the largest conventional onshore Australian gas discovery in over 40 years. The Waitsia Gas Project Stage 1 (Waitsia Stage 1) was commissioned in 2016 and has achieved an output of approximately 10 TJ/day. Waitsia Stage 1 comprised gas flows from the Waitsia-01 and Senecio-03 wells to the Xyris Production Facility (XPF), delivering gas to consumers through the Parmelia Gas Pipeline (PGP).

The Waitsia Stage 1 Expansion (WS1E) Project will increase the capacity of the XPF to deliver up to 30 TJ/day and re-direct export gas from the Parmelia Gas Pipeline (PGP) to the Dampier to Bunbury Natural Gas Pipeline (DBNGP), enabling MEPAU (as the Operator) to continue producing from two existing wellheads, Senecio-03 and Waitsia-01, as well as allow other Waitsia wells (i.e. Waitsia-02) to be tied-in to the XPF.

The WS1E Project comprises upgrades to existing equipment and installation of new infrastructure including:

- Upgrade and install new infrastructure within the XPF to increase production capacity to 30 TJ/day,
- Connecting a previously drilled well (the Waitsia-02 appraisal well) to the XPF to commence extended production testing,
- Evaporation pond construction, and
- Construction of the Waitsia Gas Export Pipeline (WGEP) and compound to connect the XPF to the DBNGP.

These activities are located entirely within Pipeline Licence PL 124 and Petroleum Title – Production Licence L1 (Figure 1-1). The scope of this Environment Plan (EP) covers the construction of the WGEP (and associated activities), located within Pipeline Licence PL 124, with a separate EP covering the remaining WS1E Project activities scope.

Waitsia Stage 1 Expansion Project: Waitsia Gas Export Pipeline Construction Environment Plan Summary

1.2 Purpose

The EP and this EP Summary have been prepared to meet the requirements of the:

- *Petroleum Pipelines (Environment) Regulations 2012.*

Guidance on the EP development was provided by the Department of Mines, Industry Regulation and Safety (DMIRS) 'Guideline for the Development of Petroleum and Geothermal Environment Plans in Western Australia' and the 'Guidance Note – Environmental Performance Objectives, Environmental Performance Standards and Measurement Criteria for Petroleum Environment Plans'.

1.3 Nominated Contact Details

In accordance with the PP(E)R, contact details for notification of MEPAU as the Operator are included in Table 1-1.

Table 1-1: Nominated Contact Details

Contact Details	
Name	Steve McCracken – AWE Perth Pty Ltd
Address	Level 11 Exchange Tower, 2 The Esplanade, Perth WA 6000
Telephone number	08 6364 4777
Email address	enquiry@mepau.com.au

A2. Environmental Survey and, Risk Assessment and Management Consideration

Waitsia Stage 1 Expansion Project: Waitsia Gas Export Pipeline Construction Environment Plan Summary

3.0 DESCRIPTION OF THE ENVIRONMENT

A summary of the environment within proximity of the proposed activities is included in Table 3-1, with sensitivities shown in Figure 3-1 and Figure 3-2.

Table 3-1: Summary of the Existing Environment within the Operational Area

Feature	Summary
Climate	Windy region with hot dry summers and mild wet winters.
Soil	Geotechnical and soil assessment conducted within proximity of the Operational Area verified that the soils area comprised almost entirely of quartz sand.
Surface Water	Surface waters adjacent to the activities includes Ejarno Spring.
Groundwater	Depth to groundwater is in the order of 8.4 m. Ejarno Spring is a surface expression of groundwater.
Acid Sulphate Soils	Located within an area where acid sulphate soils are not known to occur.
Conservation Areas	None within the Operational Area (Figure 3-1).
Environmentally Sensitive Areas (ESAs)	None within the Operational Area (Figure 3-1).
Groundwater Dependent Ecosystems	None within the Operational Area. Ejarno Spring (adjacent to the Operational Area) is a GDE (Figure 3-1).
Vegetation Communities and Flora	Vegetation communities are well represented; two priority listed flora species present.
Weeds	Surveys recorded the presence of 21 species of introduced flora within the vicinity of the Operational Area.
Dieback	Not known to occur and unlikely to occur due to calcareous soils.
Fauna	Naturebase records indicate 73 vertebrate fauna species potentially occur in proximity of the Operational Area, however, none of these were considered as conservation significant.
Aboriginal Heritage	No registered heritage sites and no new sites expected based upon recent site assessment surveys.
European Heritage	None within the Operational Area.
Socio-economic Environment	Socio-economic environment predominantly consists of agriculture and the petroleum industry (Figure 3-2).

Waitsia Stage 1 Expansion Project: Waitsia Gas Export Pipeline Construction Environment Plan Summary

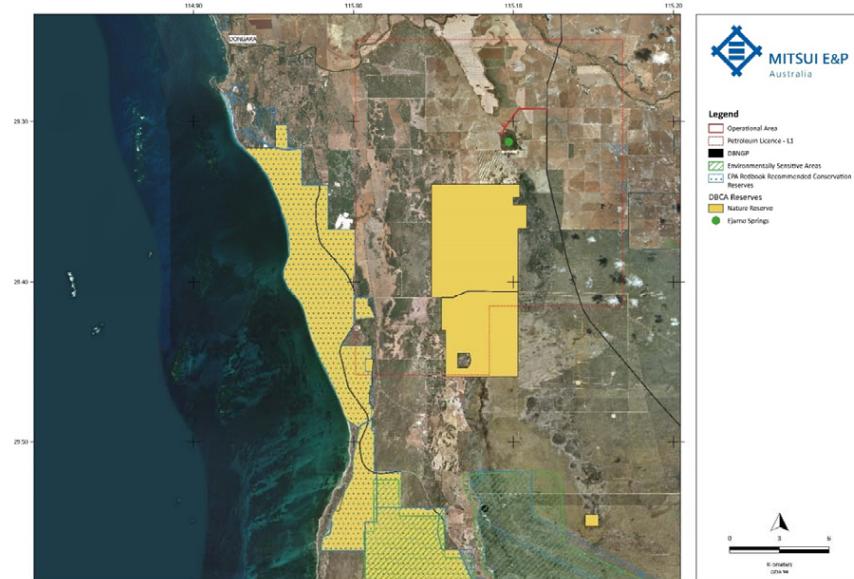


Figure 3-1: Conservation Significant Areas

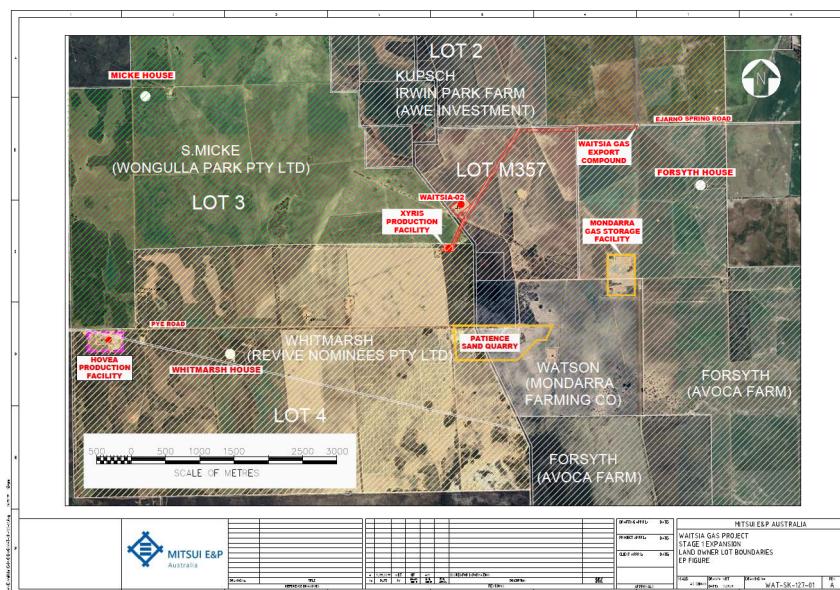


Figure 3-2: Land-use adjacent to the Operational Area

Waitsia Stage 1 Expansion Project: Waitsia Gas Export Pipeline Construction Environment Plan Summary

4.0 ENVIRONMENTAL RISK ASSESSMENT AND MANAGEMENT

Risk assessments have been undertaken for the WS1E Project and included Project Management, Engineering and HSE Representatives. Aspects and their associated hazards and management and mitigation measures are summarised in Table 4-1.

Table 4-1: Risk Assessment Outcome Summary

Aspect	Hazard	Management and Mitigation Measures
Ground and Vegetation Disturbance	<ul style="list-style-type: none"> • Spread of non-indigenous species (weeds, pathogens etc.) • Introduction of new weed of national significance or dieback • Dust generation causing impacts to local landowners • Damage to heritage sites / artefacts • Unplanned disturbance to vegetation and fauna habitat • Damage to soil profile (including compaction from stockpiling equipment and use of heavy machinery) • Erosion of stockpiled soil (surface water run-off and wind) - Loss of topsoil 	<ul style="list-style-type: none"> • Equipment Acceptance Inspection • Weed Hygiene Inspection • Restricted site access • Reduced speed limits • Native Vegetation Clearing Plan • Area Work Clearance Forms • Excavation Authorisation Certificate • Permit to Work • Soil Management requirements • Photographic monitoring conducted pre and post-construction • Construction fill verified as having low weed / dieback risk • Complaints management system • Heritage artefact identification requirements
Fire	<ul style="list-style-type: none"> • Habitat and vegetation loss, fauna injury/fatality, or contamination (e.g. in the event petroleum facilities are damaged) 	<ul style="list-style-type: none"> • Area Work Clearance Forms • Permit to Work • Hot-works guards • Additional fire-fighting equipment • Electrical equipment testing and tagging • Department of Fire and Emergency Services exemptions • MEPAU's Perth Basin Operations Emergency Response Plan • Subscription to local fire notification service
Air Emissions	<ul style="list-style-type: none"> • Disturbance to sensitive fauna or impacts to local landowners 	<ul style="list-style-type: none"> • Emissions are monitored and reported

Waitsia Stage 1 Expansion Project: Waitsia Gas Export Pipeline Construction Environment Plan Summary

Aspect	Hazard	Management and Mitigation Measures
		<ul style="list-style-type: none"> • National Pollutant Inventory reporting • National Greenhouse and Energy Reporting • Complaints Management System
Noise and Vibration Emissions	<ul style="list-style-type: none"> • Disturbance to sensitive fauna or impacts to local landowners 	<ul style="list-style-type: none"> • Complaints Management System • Restricted operational hours
Physical Interaction with Fauna	<ul style="list-style-type: none"> • Death or injury to fauna (from entrapment) • Death or injury to fauna (from vehicle strike) 	<ul style="list-style-type: none"> • Area Work Clearance Forms • Excavation Authorisation Certificate • Fauna Management requirements • Pipes to be capped • Reduced speed limits
Physical Presence – Community Disruption	<ul style="list-style-type: none"> • Community disruption due to increased traffic / disruption 	<ul style="list-style-type: none"> • Shire approvals • Ongoing consultation • Complaints Management System
Planned Discharge – Hydrotest Fluid	<ul style="list-style-type: none"> • Erosion from surface run-off causing adverse effects on native vegetation 	<ul style="list-style-type: none"> • Hydrostatic Test Procedure • Swabbing of the pipeline prior to hydrotesting • Planned discharges are monitored and reported
Accidental Release – General Waste	<ul style="list-style-type: none"> • Environmental pollution and fauna injury or death (from ingestion) 	<ul style="list-style-type: none"> • Waste Management Plan • Environmental Protection (Abrasive Blasting) Regulations 1998
Accidental Release – Hydrocarbon/Chemical Handling, Storage and Use	<ul style="list-style-type: none"> • Contamination of soil / groundwater (from a large spill event) • Contamination of soil / groundwater (from a small spill event) 	<ul style="list-style-type: none"> • Travel Management Plan • Daily equipment inspection • On-site vehicle / equipment refuelling requirements • Secondary containment requirements for storing hydrocarbons, chemical and hazardous liquid materials • No bulk storage of hydrocarbons or hazardous materials within the ROW • Perth Basin Surveillance Sampling Program

Waitsia Stage 1 Expansion Project: Waitsia Gas Export Pipeline Construction Environment Plan Summary

Aspect	Hazard	Management and Mitigation Measures
		<ul style="list-style-type: none">• WS1E Project WGEP Construction Oil Spill Contingency Plan• MEPAU's Perth Basin Operations Emergency Response Plan

A3. Organisation's Management System Overview

Waitsia Stage 1 Expansion Project: Facilities Construction Environment Plan Summary

5.0 IMPLEMENTATION STRATEGY

To meet the requirements of Regulation 15(1) of the PGER(E)R, the EP describes the systems, practices, and procedures used to ensure that the environmental impacts and risks of the activities are continuously reduced to ALARP, and the environmental performance objectives and standards detailed in the EP are achieved.

5.1 Management System Overview

5.1.1 Documentation Hierarchy

MEPAU's Health, Safety and Environment Management System (HSEMS) is hierarchical in nature, with the key levels of documentation shown below in Figure 5-1.



Figure 5-1: HSEMS Documentation Hierarchy

The HSEMS establishes clear guidelines for personnel involved in this activity to achieve and maintain the standards set out in the EP.

5.1.2 Corporate HSE Elements

The 15 HSE Elements are listed in Table 5-1, and those that are relevant to the manner in which the EP is implemented are identified.

Waitsia Stage 1 Expansion Project: Facilities Construction Environment Plan Summary

Table 5-1: HSE Elements

HSE Element Number	Element Name	Relevant to support environmental management of this Activity
1	Leadership and Responsibility	<input checked="" type="checkbox"/>
2	Hazard Identification and Risk Management	<input checked="" type="checkbox"/>
3	Compliance	<input checked="" type="checkbox"/>
4	Workforce Training and Competency	<input checked="" type="checkbox"/>
5	Workforce Involvement and Stakeholder Engagement	<input checked="" type="checkbox"/>
6	Design, Construction, Commissioning and Decommissioning	<input type="checkbox"/>
7	Operations Management	<input type="checkbox"/>
8	Asset Integrity Management	<input type="checkbox"/>
9	Management of Contractors and Materials	<input checked="" type="checkbox"/>
10	Occupational Health and Wellbeing	<input type="checkbox"/>
11	Management of Change	<input checked="" type="checkbox"/>
12	Incident Reporting and Investigation	<input checked="" type="checkbox"/>
13	Emergency Preparedness and Response	<input checked="" type="checkbox"/>
14	Information Management and Document Control	<input checked="" type="checkbox"/>
15	Audit, Assessment and Review	<input checked="" type="checkbox"/>

5.2 Environment Plan Review

Regulation 18 of the PGER(E)R requires that MEPAU submit a proposed revision of the accepted EP:

- Before the commencement of a new activity, or any significant modification, change of a new stage of an existing activity,
- Before, or as soon as practicable after, the occurrence of any significant new environmental impact or risk, or significant increase in an existing environmental impact or risk which occurred or is to occur.

Additionally, Regulation 20 of PGER(E)R requires that MEPAU submit a proposed revision of the EP five years from the date when the EP is accepted by the Minister. However noting the scope of the EP, it is expected to be closed prior to requiring a 5-year review.

A4. Stakeholder Consultation

Waitsia Stage 1 Expansion Project: Facilities Construction Environment Plan Summary

6.0 CONSULTATION

MEPAU are committed to stakeholder engagement and their commitment is documented in their Stakeholder Engagement Plan [CP-PM-039] which includes:

- Identification and analysis of stakeholder groups,
- Adopted method of communication with each stakeholder group,
- Determination of the type of information that is required to be communicated and when,
- Confirmation of the MEPAU resource that is responsible for implementing the commitments outlined in the EP,
- Reporting responsibilities and relationships during communication and consultation processes,
- A list of contacts and the contact details for all key stakeholders,
- A calendar of activities (including how, when, to and by whom communications and consultations will occur), and
- A point of reference for the specific obligations, commitments and requirements relating to those stakeholders, including those defined within resource consents and third-party agreements.

MEPAU completed a scoping exercise to determine which authorities, persons and organisations were relevant for the activities covered under the EP. As the assets are in regional areas and distant from any town sites, the following stakeholders were identified and include:

- Landowners of the properties where the assets are located, and adjacent to them,
- Local government (Shire of Irwin), and
- Southern Yamatji people (Traditional Landowners).

Table 6-1 provides a summary of the most recent consultation undertaken specific to activities covered under the EP. No objections or claims have been raised relevant to the activities covered in the EP.

Table 6-1: Stakeholder Consultation Undertaken

Stakeholder	Date	Summary of Consultation	Objections / claims raised	MEPAU response	Close out of Issues (if any)
DFES	07 October 10 October	Discussion with DFES regarding hot works exemptions	No objections to the project have been raised on the assertion that exemptions are in place and conditions followed	Requirement to have an exemption in place is included in Section 5.2. The exemption was received on the 10 th October.	N/A
DMIRS	Engagements with various branch's.	Discussion of approval requirements (Pipeline licence, EP and SMS)	No objections to the project have been raised	None required	N/A
DWER - Industry Regulation Branch	Various engagements from July 2019	Scoping meeting to present the WS1E Project, and discuss the Part V	No objections or concerns have been raised	None required	N/A

Waitsia Stage 1 Expansion Project: Facilities Construction Environment Plan Summary

Stakeholder	Date	Summary of Consultation	Objections / claims raised	MEPAU response	Close out of Issues (if any)
		submission process and information requirements, assessment of Works Approval application			
Shire of Irwin	Various engagements from August 2019	Notified regarding the Pipeline Licence Application and advice sought regarding the pipeline road crossings. No Development Applications required.	No objections or concerns were raised	None required	N/A
Traditional Owners – Southern Yamatji through the Yamatji Marlpa Aboriginal Corporation (YMAC)	Various engagements over August - October 2019	Heritage survey liaison	No objections or concerns were raised	None required	N/A
Southern Yamatji Working Group and MEPAU	Meeting (informal) 7 February 2019 - Senior representatives	Activities update including Waitsia Gas Project. Key area of interest was potential training and employment opportunities arising from future projects.	No objections or concerns were raised	None required	N/A
A. Whitmarsh (Revive Nominees Pty Ltd)	Various engagements throughout 2019	Meetings to discuss Project activities and timing. Access area for pipeline construction is already fenced off, and will not affect farming activities. Also notified regarding the Pipeline Licence application.	No objections raised.	No specific response required, will continue consulting during facility installation activities.	N/A

Waitsia Stage 1 Expansion Project: Facilities Construction Environment Plan Summary

Stakeholder	Date	Summary of Consultation	Objections / claims raised	MEPAU response	Close out of Issues (if any)
S. Micke (Wongulla Park Pty Ltd)	Various engagements throughout 2019	Meetings to discuss Project activities and timing. Access area for pipeline construction is already fenced off, and will not affect farming activities. Also notified regarding the Pipeline Licence application.	No objections raised.	No specific response required, will continue consulting during facility installation activities.	N/A
Irwin Park Farm lessee (AWE), P. Kupsch (Tara Farming)	Various engagements throughout 2019	Discussed the depth of the pipeline required to allow for deep-ripping farming activities, fencing of cattle options during pipeline construction period. Also notified regarding the Pipeline Licence application and heritage site survey.	No issues raised. Was the same landowner of the PL 111 pipeline installation and is aware of pipeline construction activities.	No specific response required, will continue consulting during facility installation activities.	N/A

6.1 Ongoing Consultation

In accordance with Regulation 15(11) the implementation strategy must provide for appropriate consultation with relevant authorities and other relevant interested persons or organisations. During the consultation undertaken for this project, no requests for additional engagement or project updates were received.

MEPAU will continue to consult with relevant stakeholders throughout the course of this EP and until completion of construction activities. MEPAU will specifically engage and consult with relevant stakeholders on a frequency at their request.

However based upon the nature and scale of the project, and as no specific triggers or frequency for updates have been requested to date, MEPAU plan to keep stakeholders informed of this projects progress through the wider MEPAU engagement process, and ongoing consultation with landowners where required as part of Land Access Agreements.

Appendix B – Waitsia Gas Project Stage 2 Management Plan

B1. Waitsia Gas Project Stage 2 – Greenhouse Gas Management Plan Report

Waitsia Gas Project Stage 2 - Greenhouse Gas Management Plan			
Table 3-1 Greenhouse Gas emission management provisions (Management-based)			
EPA Objective: To maintain air quality and minimise emissions so that environmental values are protected (EPA, 2016) GHGMP Objective: To mitigate GHG emissions having regard to the as low as reasonably practicable principle and to contribute to Western Australian GHG policy targets. Key impacts and risks: Contribution to the State GHG emissions and contribution to climate change			
Management action or Environmental criteria	Management target / Response Action	Monitoring (method, location and timing)	Reporting
MA1 Application of the mitigation hierarchy and review and adoption of reasonable and practicable measures to mitigate Proposal scope 1 GHG emissions	Review of GHG emissions abatement opportunities (see Section 4.1, Table 4-1) with consideration to outcomes to support MA8.	Annually	Annual internal reporting
MA2 Establish Proposal baseline emissions and maintain emissions within the baseline, to comply with the Commonwealth Safeguard Mechanism	Establish a baseline for the Proposal and submit this to the Commonwealth Clean Energy Regulator Maintain emissions below the established baseline and report as required	12 Months Annually	Compliance with established baseline included in Annual Environmental Reporting and published as part of annual Safeguard Mechanism data tables by the Clean Energy Regulator. Annual reporting in accordance with the <i>NGER Act 2007</i> . Annual internal reporting
MA3 Implement GHG monitoring and reporting in accordance with the Commonwealth <i>National Greenhouse and Energy Reporting Act 2007</i>	Monitor and report on all Scope 1 GHG emissions	Annually	Annual reporting in accordance with the <i>NGER Act 2007</i> Annual internal reporting
MA4 Establish and achieve Interim Emissions Targets	Implement initiatives to achieve the Interim Target to reduce baseline CO ₂ emissions from the maximum production baseline, reduced to the average production levels for the period of production, by either avoiding, reducing or offsetting CO ₂ emissions by: 1. 10% by 2025, and 2. 26% by 2030.	12 Months 5 yearly	Annual Compliance Assessment Report to the EPA detailing efforts made to achieve the Interim Target. Publicly reporting against Interim Targets (GoWA, 2019 and EPA, 2020)
MA5 Establish Aspirational Long-term Targets	MEPAU will implement a program of rolling five-year review of national and international developments (Long-term Target Review tied to the Target reporting periods) to define informed aspirational targets approximately ten years in advance that align with the State's goal of zero net emissions by 2050. Accordingly, set Aspirational Long-term targets for 2035 in 2025.	5 yearly	Publicly report defining Aspirational Long-term Targets, in line with public report against Interim Targets.
MA6 Preventative maintenance to minimise fugitive emissions of natural gas	Establish a leak detection and repair (LDAR) programme that will identify issues Establish a maintenance program to minimise emissions from pressure relief valves Establish a target for number of pressure relief instances and quantity of leaked emissions	12 Months 12 Months 12 Months	Annual Compliance Assessment Report to the EPA detailing pressure relief instances and quantity emitted.

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Waitsia Gas Project Stage 2 - Greenhouse Gas Management Plan			
EPA Objective: To maintain air quality and minimise emissions so that environmental values are protected (EPA, 2016) GHGMP Objective: To mitigate GHG emissions having regard to the as low as reasonably practicable principle and to contribute to Western Australian GHG policy targets. Key impacts and risks: Contribution to the State GHG emissions and contribution to climate change			
Management action or Environmental criteria	Management target / Response Action	Monitoring (method, location and timing)	Reporting
	Monitoring and reporting of fugitive emissions data	Annually	
MA7 Preventative maintenance to ensure that emissions remain within the agreed baseline for the Proposal	Establish a comprehensive monitoring program to facilitate assessment of plant efficiency and operating conditions Develop procedures to address plant non-conformances	12 Months 12 Months	Preparation of a quarterly plant performance report, presented internally.
MA8 Adaptive management through three yearly review of reasonable and practicable measures to mitigate GHG emissions in response to developments in Commonwealth and State policies, markets, technology and regional infrastructure	Triennial reviews undertaken. GHGMP updated with triennial review findings.	Triennial review and assessment of practicable emission reduction opportunities	Preparation of an abatement opportunities assessment report presented internally. New abatement opportunities will be adopted where practicable and documented in this management plan.

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B2. Waitsia Gas Project Stage 2 – Environmental Management Plan Report

Waitsia Gas Project Stage 2 - Environmental Management Plan						
EPA Objective		<i>To protect flora and vegetation so that biological diversity and ecological integrity are maintained.</i>				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
Direct loss of vegetation and flora	Prevent impacts to conservation significant flora	Construction	MEPAU will undertake targeted flora surveys in General Vegetation areas to ensure no significant flora species will be impacted by construction	Compliance with outcomes of the EPA referral which states no significant impacts to flora and vegetation are expected.	None identified	None identified
• Direct loss of vegetation and flora • Accidental clearing of areas outside of the Proposal Development Envelope.	Prevent clearing of vegetation and flora outside of required clearing areas	Construction	MEPAU will: <ul style="list-style-type: none">• Gain approval from DWER to clear vegetation under Part V of the EP Act• Prepare a clearing protocol prior to commencement of construction• Delineate the approved clearing area prior to commencement of clearing activities• Make all construction personnel aware of the clearing area boundaries through the induction/training process	Compliance with pre-defined clearing limits and boundaries described within the Referral Document.	<ul style="list-style-type: none">• Verification prior to clearing activities that clearing limits are clearly defined• Verification following clearing activities that no clearing outside of this area has occurred	<ul style="list-style-type: none">• Any clearing undertaken outside of the clearing area will be reported as required by the EP Act Part V and PGER(E) R requirements in accordance with MEPAU's incident management procedure.• Part V clearing permit annual compliance report

Waitsia Gas Project Stage 2 - Environmental Management Plan						
EPA Objective		<i>To protect flora and vegetation so that biological diversity and ecological integrity are maintained.</i>				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
Introduction or spread of non-indigenous species (weed / pathogens)	Prevent introduction of new and/or spread of weeds into adjacent areas of previously uncleared or unimpacted native vegetation during	Construction and Operations	MEPAU will: <ul style="list-style-type: none">• Develop a weed management protocol prior to commencement of construction• Make all personnel aware of weed management practices through the induction/training process• Implement the weed management protocol• Native seeds will be used in revegetation activities	<ul style="list-style-type: none">• No new declared weeds introduced into or adjacent to the Proposal area attributable to the Proposal• No new dieback infestations introduced into or adjacent to the Proposal area attributable to the Proposal	<ul style="list-style-type: none">• Verification that construction fill bought to site has low risk of containing weeds or pathogens• Verifications that construction vehicles comply with weed management protocol	PGER(E) R Annual Environmental Performance Report

Waitsia Gas Project Stage 2 - Environmental Management Plan						
Table 3-2: Environmental management approach for Terrestrial Environmental Quality						
EPA Objective		To maintain the quality of land and soils so that environmental values are protected.				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
<ul style="list-style-type: none"> Erosion or scouring from reduction in soil stability during civil works Impairment of soil drainage due to construction of engineered hardstands 	Minimise impacts to terrestrial environmental quality arising from construction or operation activities.	Construction	<p>MEPAU will:</p> <ul style="list-style-type: none"> Monitor the Proposal area during construction and where erosion or scouring is evident that is attributable to the Proposal – stabilisation techniques will be applied Design surface drainage to avoid water ponding associated with impairment of soil drainage 	Erosion and drainage consistent with surrounding environment within two years post construction	Regular inspection of construction sites to identify areas of erosion, scouring or drainage impairment	PGER(E) R Annual Environmental Performance Report
Contamination of soils due to spill events	Prevent contamination to the surrounding environment from the release of hazardous materials / waste	Construction and Operations	<p>MEPAU will:</p> <ul style="list-style-type: none"> Develop an Environment Plan for acceptance by DMIRS (under the PGER(E)R) prior to construction activities commencing that describe spill prevention. Develop an oil spill contingency plan for acceptance by DMIRS 	<ul style="list-style-type: none"> No significant spill events attributable to the Proposal Hydrocarbons and chemicals are stored and handled in accordance with the Australian standards and other legislative requirements. 	<ul style="list-style-type: none"> Regular site inspections verify hydrocarbons and chemicals are stored and handled in accordance with the Australian standards and other legislative requirements Regular site inspections verify 	<ul style="list-style-type: none"> PGER(E) R Annual Environmental Performance Report PGER(E)R Monthly recordable report PGER(E)R Reportable incident reports

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Waitsia Gas Project Stage 2 - Environmental Management Plan						
EPA Objective		To maintain the quality of land and soils so that environmental values are protected.				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
			<p>(under the PGER(E)R) prior to construction activities commencing that describes the process for managing spill events.</p> <ul style="list-style-type: none"> Hydrocarbons, chemicals and other hazardous substances will be stored in accordance with relevant Australian Standards and a DMIRS accepted Environment Plan Controlled wastes will be stored and transported off-site by licenced controlled waste contractors Record all spill events 		no unrecorded spill events have occurred	

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Waitsia Gas Project Stage 2 - Environmental Management Plan						
Table 3-3: Environmental management approach for Terrestrial Fauna						
EPA Objective		To protect terrestrial fauna so that biological diversity and ecological integrity are maintained				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
Death or displacement of native fauna species	Minimise impacts to terrestrial fauna arising from construction or operation activities.	Construction (General and Clearing)	<p>MEPAU will:</p> <ul style="list-style-type: none"> • Use authorised personnel to remove and relocate conservation significant fauna present in the clearing area prior to clearing • Where possible, schedule staged clearing outside of the breeding period for Carnaby's Cockatoo • Not unnecessarily remove dead standing or fallen timber, and logs and other debris (except for weeds) resulting from land clearing will be placed in nearby vegetated areas to enhance the surrounding fauna habitat • Make all personnel aware of potential impacts to native fauna and advise that works are to stop immediately 	No incidents of terrestrial fauna injury or death within the Site during construction or operations	Inspection of vegetation prior to clearing to identify presence of conservation significant fauna prior to clearing.	<ul style="list-style-type: none"> • PGER(E) R Annual Environmental Performance Report • PGER(E)R Monthly recordable report

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Waitsia Gas Project Stage 2 - Environmental Management Plan						
EPA Objective		To protect terrestrial fauna so that biological diversity and ecological integrity are maintained				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
			within the vicinity of any injured or shocked native fauna that are encountered			
			<ul style="list-style-type: none"> • Speed limits to be adhered to at all times (60km/h on designated access tracks, 30 km/h on construction tracks) 			
		Construction (flowline / pipeline trenching)	<p>MEPAU will:</p> <ul style="list-style-type: none"> • Make all personnel aware of potential impacts to native fauna and advise that works are to stop immediately within the vicinity of any injured or shocked native fauna that are encountered • Inspect open trenches for the presence of trapped fauna and remove / relocate trapped fauna by appropriately trained personnel. • Construct open excavations / trenches with a permanent means 		Regular inspection of open trenches in accordance with the PGER(E)R DMIRS accepted EP	

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Waitsia Gas Project Stage 2 - Environmental Management Plan						
EPA Objective		<i>To protect terrestrial fauna so that biological diversity and ecological integrity are maintained</i>				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
			of fauna egress (e.g. ramps) and refuges (shelter) at regular intervals commensurate to the level of risk			
Habitat Fragmentation	Minimise impacts to terrestrial fauna arising from construction or operation activities	Construction and Operations	<p>MEPAU will:</p> <ul style="list-style-type: none"> • Bury flowline/ pipelines to ensure they do not form a barrier to fauna movements • Commence rehabilitation following trenching topsoil replacement to minimise habitat fragmentation to as low as reasonably practicable. 		<ul style="list-style-type: none"> • Annual rehabilitation vegetation inspections 	<ul style="list-style-type: none"> • PGER(E) R Annual Environmental Performance Report • PGER(E)R Monthly recordable report • PGER(E)R Reportable incident reports • Part V Annual Vegetation Inspection and Rehabilitation Report

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Waitsia Gas Project Stage 2 - Environmental Management Plan						
Table 3-4: Environmental management approach for Inland Waters						
EPA Objective		<i>To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected</i>				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
Contamination of groundwater	Prevent contamination of groundwater	Construction (Drilling)	<p>MEPAU will:</p> <ul style="list-style-type: none"> • Develop an Environment Plan for acceptance by DMIRS (under the PGER(E)R prior to well construction that describe drilling fluid management and management strategies for preventing groundwater contamination. • Hydrocarbons, chemicals and other hazardous substances will be stored in accordance with relevant Australian Standards and a DMIRS accepted Environment Plan • Develop a water quality monitoring program in consultation with DWER to manage potential impacts to groundwater well construction. 	<p>Groundwater quality is maintained to existing conditions</p> <p>No significant spill events attributable to the Proposal</p> <p>Hydrocarbons and chemicals are stored and handled in accordance with the Australian standards and other legislative requirements.</p>	<p>Water quality monitoring will be undertaken in accordance with a DMIRS accepted EP. Specifically, the monitoring will require baseline information to be provided prior to the activity and sampling post activity.</p> <p>Water quality monitoring will be undertaken in accordance with the ANZECC guidelines and the relevant Australian Standards</p>	<ul style="list-style-type: none"> • PGER(E) R Annual Environmental Performance Report • PGER(E)R Monthly recordable report • PGER(E)R Reportable incident reports

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Waitsia Gas Project Stage 2 - Environmental Management Plan

EPA Objective		<i>To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected</i>				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
Contamination of groundwater	Prevent contamination of groundwater	Operations	<p>MEPAU will:</p> <ul style="list-style-type: none"> • Record all spill events • Develop an Environment Plan for acceptance by DMIRS (under the PGER(E)R) prior to operations that describe storage and management of PFW to prevent groundwater contamination. • Hydrocarbons, chemicals and other hazardous substances will be stored in accordance with relevant Australian Standards and a DMIRS accepted Environment Plan • Licence the WGP as a prescribed premise (under Part V of the EP Act) that details water quality monitoring requirements • Develop a water quality monitoring program in 	<p>Groundwater quality is maintained to existing conditions</p> <p>No significant spill events attributable to the Proposal</p> <p>Hydrocarbons and chemicals are stored and handled in accordance with the Australian standards and other legislative requirements.</p>	<p>Water quality monitoring will be undertaken in accordance with a DMIRS accepted EP and DWER Part V Licence.</p>	<ul style="list-style-type: none"> • PGER(E) R Annual Environmental Performance Report • PGER(E)R Monthly recordable report • PGER(E)R Reportable incident reports • Part V Annual Audit Compliance Report

Waitsia Gas Project Stage 2 - Environmental Management Plan

EPA Objective		<i>To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected</i>				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
			<p>consultation with DWER to manage potential impacts to groundwater well construction.</p> <ul style="list-style-type: none"> • Record all spill events 			

Waitsia Gas Project Stage 2 - Environmental Management Plan						
Table 3-5: Environmental management approach for Air Quality						
EPA Objective		To maintain air quality and minimise emissions so that environmental values are protected				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
Reduction in air quality	Minimise impacts arising from generation of fugitive dust emissions during construction activities	Construction	<p>MEPAU will:</p> <ul style="list-style-type: none"> • Utilise dust suppression methods such as water misting where dust generation is observed to be excessive or have the potential to result in impacts to sensitive receptors • Disturbed areas will be stabilised and vegetated as soon as practicable following clearing activities. • Maintain a complaints management system / procedure 	No complaints received from stakeholders regarding dust generation attributable to the construction phase	N/a	<ul style="list-style-type: none"> • PGER(E) R Annual Environmental Performance Report • Part V Annual Audit Compliance Report
	Ensure impacts to air quality are reduced to as low as reasonably practical	Operations	<p>MEPAU will:</p> <ul style="list-style-type: none"> • Install standard leak detectors for hazardous area installation at the WGP 	<p>Atmospheric emissions comply with regulatory limits</p> <p>Stack emissions monitoring in accordance</p>	<p>Baseline monitoring of PM2.5, PM10, NOx, NO2 and Ozone emissions to determine background air quality levels</p> <p>Stack emissions monitoring in accordance</p>	<ul style="list-style-type: none"> • Part V Annual Audit Compliance Report

Waitsia Gas Project Stage 2 - Environmental Management Plan						
EPA Objective		To maintain air quality and minimise emissions so that environmental values are protected				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
Generation of greenhouse gases (GHG)	Minimise greenhouse gas emissions	Operations	<ul style="list-style-type: none"> • Repair detected leaks as a high priority • Use an incinerator to remove acid gases from the condensate. A flare system with an elevated high-pressure flare will be installed for the safe disposal of large relief gases and plant blowdown • Record volumes of greenhouse gas emissions generated 	<p>with EP Act Part V Licence</p> <p>Stack emissions monitoring in accordance with EP Act Part V Licence</p> <p>GHG Monitoring as per the requirements of NGER Act.</p>		National Greenhouse and Energy Register Report

Waitsia Gas Project Stage 2 - Environmental Management Plan

Table 3-6: Environmental management approach for Social Surroundings

EPA Objective		To protect social surroundings from significant harm.				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
Reduction in visual amenity	Minimise visual impacts to the local community	Construction and Operations	MEPAU will: <ul style="list-style-type: none"> Design lighting for the Plant to be unobtrusive to the sensitive receptors nearby (i.e. downward facing) Treat exposed surfaces to minimise reflective materials 	No complaints received from stakeholders regarding reduction in visual amenity	N/a	PGER(E) R Annual Environmental Performance Report
Increased noise emissions	Ensure noise emissions comply with the <i>Environmental Protection (Noise) Regulations 1997</i>	Construction and Operations	MEPAU will: <ul style="list-style-type: none"> A community complaints procedure will be implemented for the life of the Proposal and the community will be notified of how to make a complaint 	No complaints received from stakeholders regarding noise emissions generated from the Proposal Noise emissions comply with regulatory limits	Noise monitoring may be undertaken if complaints are received to verify noise emissions associated with.	PGER(E) R Annual Environmental Performance Report
Impacts to heritage artefacts and sites	Ensure activities comply with the requirements of the <i>Aboriginal Heritage Act 1972</i>	Construction	MEPAU will: <ul style="list-style-type: none"> Develop and implement a ground disturbance / unexpected finds heritage protocol to direction actions in the unlikely event a heritage artefact 	No disturbance to heritage artefacts or culturally significant sites	Aboriginal representatives will monitor ground disturbance activities within bush land areas and within 200m of major water sources	PGER(E) R Annual Environmental Performance Report

Waitsia Gas Project Stage 2 - Environmental Management Plan

EPA Objective		To protect social surroundings from significant harm.				
Impact	Proposal Objective	Proposal Stage	Management Action	Management Targets	Monitoring	Reporting
			is uncovered during construction <ul style="list-style-type: none"> Ensure Aboriginal monitors are onsite during vegetation clearing activities 			
Increased traffic	Minimise impacts to the local community from increased traffic movements during construction	Construction	MEPAU will: <ul style="list-style-type: none"> Develop and implement a traffic management plan during the construction phase of the Proposal 	No complaints received from stakeholders regarding increased traffic congestions attributable to the Proposal	None identified	PGER(E) R Annual Environmental Performance Report

Appendix C - Company ASX Announcements and Reports

Relevant Abstracts from involved Companies' ASX Announcements and Reports.

C1. Waitsia-1 Gas Flow Update

ASX Announcement
7 October 2015



Waitsia-1 flows gas at 24.7 mmscf/d from first zone

- Flow testing the first of two zones in the onshore Waitsia-1 well has commenced
- High Cliff Sandstone achieves a flow rate of 24.7 mmscf/d, constrained by tubing size

AWE Limited (ASX: AWE), Operator of the L1/L2 joint venture, today announced it had commenced the flow testing program for the Waitsia-1 well to further appraise the conventional Waitsia gas discovery in the onshore Perth Basin, Western Australia.

The testing program is designed to determine well deliverability from two conventional reservoir zones and to collect gas samples for compositional analysis. The first zone being flow tested is the deeper High Cliff Sandstone, where a 23.5 metre interval (3,382 – 3,405.5 metres) has been perforated.

Well clean-up operations commenced at approximately 15:00 hours AWST (Australian Western Standard Time) on Monday 5th October. On Tuesday 6th October, at the end of a 7 hour clean up period, the well flowed gas at an average rate of 24.7 mmscf/d, constrained by tubing size, on a 60/64 inch choke at ~1330 psig flowing well head pressure over a 1 hour period.

AWE's Managing Director, Bruce Clement, said:

"This is an excellent result and confirms the production potential of the conventional High Cliff Sandstone in the field. We now have two successful well tests at Senecio-3 and Waitsia-1, and we are moving forward confidently with our plans for the first stage of development".

The Waitsia-1 well will now be shut in for a brief pressure build-up survey prior to a series of flow tests at various choke settings, rates and well head pressures.

Following completion of testing on the High Cliff Sandstone, it is planned to set a plug to isolate the lower interval prior to commencing testing of the Kingia Sandstone. A similar well test program will be conducted on a 15 metre interval (3,333 – 3,348 metres) in the Kingia Formation.

The testing program is expected to be completed by the end of November. The Waitsia-1 appraisal well is located on agricultural land approximately 3 km east of the Senecio-3 well and 17 km east of Dongara, Western Australia.

The Joint Venture partners in L1/L2 are:

AWE Limited (via subsidiaries) (Operator)	50.0%
Origin Energy Resources Limited	50.0%

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C2. AWE upgrades Waitsia 2P Reserves

ASX Announcement

3 June 2016



AWE upgrades Waitsia 2P Reserves by 93%

- Waitsia gross 2P Reserves increased by 93% to 344 Bcf of gas (AWE share 172 Bcf of gas or 30.4 mmboe)
- Waitsia gross 2P Reserves plus 2C Contingent Resources increased by 30% to 630 Bcf of gas (AWE share 315 Bcf of gas or 55.7 mmboe)
- Total gross 2P Reserves plus 2C Contingent Resources for Waitsia, Senecio, Irwin and Synaphea increased by 20% to 867 Bcf of gas (AWE share 432 Bcf of gas or 79.5 mmboe)
- Significant reserves and resources upside potential to be addressed with further appraisal wells planned for 2017

AWE Limited (ASX: AWE), the Operator of onshore Permits L1/L2 in the northern Perth Basin, Western Australia, today announced a major upgrade of 2P Reserves and updated 2C Contingent Resource estimates for the Waitsia gas field.

The upgrade follows the extensive evaluation of new core data acquired in 2015 from the Waitsia-1 and Waitsia-2 wells and further analysis of well test data from the Senecio-3 and Waitsia-1 wells. The new data confirms an increase in Gas In Place (GIP) and recoverable volume estimates leading to an upgrade in 2P Reserves and conversion of 2C Contingent Resources to 2P Reserves.

Summary of changes to 2P Reserves and 2C Contingent Resources for the Waitsia field

Waitsia Field (L1/L2)	Current volumes as at 3 June 2016 (Bcf of gas)		Previous volumes as at 21 August 2015 (Bcf of gas)		Change
	Gross	Net	Gross	Net	
2P Reserves	344	172	178	89	93
2C Contingent Resources	286	143	306	153	(6.5)
2P plus 2C	630	315	484	242	30

Note: Previous 2P and 2C volumes released to the ASX on 21 August 2015

AWE's 2C Contingent Resources for the Senecio, Irwin and Synaphea tight gas fields remain unchanged at gross 237 Bcf of gas (net 117 Bcf to AWE). Together with the Waitsia field, 2P Reserves and 2C Contingent Resources now total gross 867 Bcf of gas (net 432 Bcf to AWE).

Managing Director, David Biggs, said that analysis and evaluation of the full well dataset, including the excellent flow test results from Waitsia-1, allowed AWE to significantly increase the company's previous estimate of gross recoverable gas and increase the 2P Reserves.

"This significant reserves upgrade is another very successful step in the ongoing appraisal of the Waitsia gas field and underlines the strategic importance of this exciting onshore gas project.

"Using the data gathered from the three appraisal wells drilled to date, we have made substantial progress on field modelling and we are currently finalising concept selection options for the full field development of Waitsia and surrounding fields," Biggs said.

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"Modelling indicates that in a full field development an initial plateau rate of approximately 100 TJ/day can potentially be achieved from six wells, including the three wells already drilled. Excellent well productivity and easy access to infrastructure will see AWE positioned as a low cost gas producer in Western Australia," Biggs said.

"Construction and technical work for Stage 1A of the Waitsia gas project is proceeding on time and budget and we anticipate delivering contracted initial volumes of 10 TJ/day (gross) of gas into the Western Australia domestic market from the third quarter of this calendar year.

"Looking ahead, AWE is planning to drill another two appraisal wells on the Waitsia field in 2017 and these have the potential to unlock further reserves and resources in the south-eastern extent of the field. If successful, these will be completed as future production wells," Biggs said.

Analysis of core data acquired at Waitsia-1 and Waitsia-2 has shown significantly better reservoir quality than initially predicted from wireline logs, leading to a reclassification of previously reported Kingia 2C Contingent Resources to 2P Reserves. This data has been integrated with dynamic reservoir model forecasting to provide updated reserves and contingent resources estimates for the Kingia/High Cliff Sandstone reservoirs over the entire Waitsia field.

The resulting technical work has shown that gas present in sandstones with a 5-11% porosity range can be produced when in connection with high quality reservoir with porosity greater than 11%. Contingent resource estimates have been made for sandstones with porosity greater than 5% but potentially lower connectivity, and further appraisal drilling is required to determine reservoir deliverability and to convert these to reserves.

Development planning and economic modelling indicate that the development of these reserves and contingent resources is economic under current and projected gas prices. The preliminary full-field development plan involves the drilling and completion of approximately 6 production wells, including the 3 wells drilled to date, to achieve the initial plateau rate of 100 TJ/day and a total of 15 to 20 wells over the expected 20-plus year life of the field. The wells would be connected to a centralised gas processing facility with export to domestic markets utilising existing nearby gas pipelines. The composition of the gas (c.93% methane) indicates that only minimal processing will be required.

The Joint Venture partners in L1/L2 are:

AWE Limited (via subsidiaries) (Operator)	50.0%
Origin Energy Resources Limited	50.0%

The Joint Venture partners in EP320 are:

AWE Limited (via subsidiaries)	33.0%
Origin Energy Resources Limited (Operator)	67.0%

For information please see our website www.awexplore.com or contact:

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MORE TO COME

TECHNICAL APPENDIX

Explanations as to the basis and reasons for the reported revisions to 2P Reserves and 2C Contingent Resources

1. The assessment and categorisation of Reserves and Contingent Resources is in accordance with SPE-PRMS (2011) methodology and associated guidelines.
2. AWE applied a probabilistic method for reserves and contingent resource estimation.
3. The reported figures have been aggregated from estimates on an arithmetic basis in each Reserve and Contingent Resource category.
4. Economic assumptions incorporate WA contracted and uncontracted gas price forecasts that are based on a combination of gas prices prevailing at 3 June 2016 and longer term observable price forecasts. Longer term gas price forecasts from FY 2019 are based on an independent gas price forecast provided to AWE by an industry consultant engaged by the Company.
5. All reserves are undeveloped and recoverable as wet gas net of 4% fuel and economic cut-off.
6. The Evaluation Date for the current assessment is 3 June 2016.

Table 1. Revised gross 2P Reserves for the Waitsia field (at 3 June 2016)

Gross 2P Reserves for the Waitsia field have been revised upwards to 344 Bcf of gas (net 172 Bcf or 30.4 mmboe to AWE) from the Kingia and High Cliff Sandstones, an increase of 93% over the previously announced gross 2P Reserves of 178 Bcf of gas. Gross 2P Reserves are based on those areas of the Waitsia field intersected by the three wells drilled to date.

Field (Permits L1/L2)	Reservoir Interval	Original Gas in Place (Bcf of gas)			Gross Reserves (Bcf of gas)		
		P90	P50	P10	1P	2P	3P
Waitsia gas field	Kingia/High Cliff Sandstone (>5% porosity)	286	502	780	186	344	600

Table 2. Revised gross 2C Contingent Resources for the Waitsia field (at 3 June 2016)

Gross 2C Contingent Resources for the Waitsia field have been revised from 306 Bcf to 286 Bcf of gas (net 143 Bcf or 25.3 mmboe to AWE) from the Kingia and High Cliff Sandstones, a decrease of 6.5%, as a consequence of 2C Contingent Resources conversion to 2P Reserves. Planning has commenced for two new appraisal wells on the south-eastern extent of the Waitsia field. If successful, a further portion of 2C Contingent Resources may be converted to 2P Reserves.

Field (Permits L1/L2)	Reservoir Interval	Original Gas in Place (Bcf of gas)			Gross Contingent Resources (Bcf of gas)		
		P90	P50	P10	1C	2C	3C
Waitsia gas field	Kingia Sandstone (>5% porosity)	144	274	550	97	180	406
Waitsia gas field	High Cliff Sandstone (>5% porosity)	94	189	431	37	106	246

Combined gross 2P Reserves plus 2C Contingent Resources for the Waitsia field have been revised upwards to 630 Bcf of gas (net 315 Bcf or 55.7 mmboe to AWE), an increase of 30% over the previously announced gross 2P plus 2C estimate of 484 Bcf of gas.

**Table 3. AWE net 2P Reserves and 2C Contingent Resources for the onshore Perth Basin
(at 3 June 2016)**

Combined net 2P Reserves plus 2C Contingent Resources for the Waitsia field have been revised upwards to 432 Bcf of gas (79.5 mmboe net to AWE), an increase of 20% over the previously announced net 2P plus 2C estimate of 359 Bcf of gas.

Field and Permit	Reservoir Interval	AWE Share of Reserves (Bcf of gas)			AWE Share of Contingent Resources (Bcf of gas)		
		1P	2P	3P	1C	2C	3C
Waitsia (L1/L2)	Kingia/High Cliff Sandstone	93	172	300	67	143	326
Senecio (L1/L2)	Dongara/Wagina	-	-	-	25	41	73
Synaphea (L1/L2; EP320)	Dongara/Wagina	-	-	-	53	69	92
Irwin (L1/L2; EP320)	Dongara/Wagina	-	-	-	4	7	11
TOTAL			172			260	

Reserves and Resources

The reserves and resources in this announcement are based on and fairly represent information and supporting documentation prepared by and under the supervision of qualified petroleum reserves and resource evaluators: Dr. Suzanne Hunt, AWE Manager for Engineering and Development, and Mr. Andrew Furniss, AWE General Manager for Exploration and Geoscience. Dr. Hunt, a Petroleum Engineer with a Ph.D. in Geomechanics, is a member of the Society of Petroleum Engineer Engineers and has over 19 years' experience in the petroleum sector in geoscience, field development planning, reserves estimation, production and facilities engineering. Mr. Furniss, a member of the Society of Petroleum Engineers and the American Association of Petroleum Geologists, holds an MSc in Exploration Geophysics and a BSc (Hons) in Geological Sciences and has over 25 years' of industry experience in strategic planning, portfolio management, prospect evaluation, technical due diligence and peer review, reserves and resource assessment, the application of advanced geophysical technology and business development. Both have consented in writing to the inclusion of this information in the format and context in which it appears.

About AWE Limited

AWE Limited is an independent, Australian energy company focused on upstream oil and gas opportunities. Established in 1997 and listed on the Australian Securities Exchange (ASX: AWE), the company is based in Sydney with project offices in Perth and New Zealand. AWE has a substantial portfolio of production, development and exploration assets in Australia, New Zealand, and Indonesia.

Summary of Abbreviations

2C	Contingent Resources
2P	Proved and Probable Reserves
Bcf	Billion Cubic Feet
BOE	Barrels of Oil Equivalent
mmboe	millions of barrels of oil equivalent
mmscf/d	millions of standard cubic feet of gas per day
TJ	Terajoules

Except where otherwise noted, all references to "\$" are to Australian dollars

C3. Waitsia Project First Gas Sales Announcement

ASX Announcement
29 August 2016



AWE achieves first gas sales from Waitsia project – on time and within budget

AWE Limited (ASX: AWE) today announced that commercial gas sales from Stage 1A of the Waitsia gas project have commenced and that the development was delivered on time and within the approved budget of \$18 million (\$9 million net to AWE).

The Waitsia gas project (AWE 50% interest) is Operated by AWE and located in production licence L1/L2 in the onshore Perth Basin, Western Australia, approximately 367km north of Perth and 16.5km east-southeast of Dongara. Stage 1A comprised the installation of new infrastructure to connect the Waitsia-1 and Senecio-3 gas wells to the upgraded Xyris Production Facility (XPF).

The XPF has been successfully commissioned and production capacity of 10 TJ/d has been achieved. Gas is being delivered to the Parmelia pipeline with Alinta Energy taking up to a Maximum Daily Quantity of 9.6 TJ/day under a 2.5 year Take or Pay gas sales agreement.

AWE is now focused on moving towards Stage 2, a full field development phase that would increase production capacity up to 100 TJ/d. The development concept selection process for Waitsia Stage 2 has begun and two new appraisal/production wells are planned to be drilled in calendar year 2017.

AWE's Managing Director and CEO, David Biggs, said, "The first gas sale from the Waitsia gas project represents a major milestone for AWE."

"The Waitsia gas field was discovered less than two years ago and we moved quickly to appraise the asset ahead of a Final Investment Decision (FID) for Stage 1A in January 2016. Engineering and construction work was completed on schedule, and first gas achieved less than nine months after FID on time and within budget.

"This is the first step towards full field development of the Waitsia gas project, which will deliver significant revenue growth for AWE from 2020, and highlights the strength of our technical and operating capabilities.

The Joint Venture partners in L1/L2 are:

AWE Limited (via subsidiaries) (Operator)	50.0%
Origin Energy Resources Limited	50.0%

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C4. Waitsia 1A Well Performance Update

ASX Announcement
22 December 2016



Waitsia Stage 1A well performance exceeds expectations

- Preliminary results from Waitsia Stage 1A wells have exceeded pre-production expectations over the first three months of operation
- Confirms high quality conventional reservoir system with excellent connectivity

AWE Limited (ASX: AWE), Operator of the Waitsia gas project in Western Australia production licence L1/L2, reports that well performance from Stage 1A of the Waitsia gas project has exceeded pre-production expectations over the first three months of operations (see Table 1).

Stage 1A of the Waitsia gas project commenced production in August 2016 from the Senecio-3 discovery well and the Waitsia-1 appraisal well, connected to the Xyris Production Facility (XPF) and then into the Parmelia Pipeline.

The Senecio-3 well, currently producing from the Kingia Formation, is performing better than pre-production expectations, which were based on well test results recorded in March 2015. AWE has observed an improvement in well productivity that suggests the well has cleaned up and is connected to a significant gas volume in high quality reservoir. The estimated connected volume has increased substantially towards the higher end of pre-production estimates.

The Waitsia-1 well is currently flowing from the High Cliff Sandstone (HCSS) and has exceeded the upper end of pre-production estimates. Waitsia-1 HCSS demonstrates excellent productivity and is connected to a significant gas volume in high quality reservoir.

An independent review of Stage 1A well performance by RISC Advisory Pty Ltd has determined that preliminary results from the two zones under test at Senecio-3 (Kingia Formation) and Waitsia-1 (HCSS) indicate an accessed gas in place volume of approximately 100 Bcf or greater. The Waitsia-1 Kingia Formation, which has not yet been tested, is planned to be connected and flowed in calendar year 2017.

The preliminary results also suggest the 2P connected volumes from Senecio-3 (Kingia) and Waitsia-1 (HCSS) are consistent on a per well basis with RISC's overall assessment of Waitsia gross 2P Reserves of 460 Bcf of gas (announced 20 September 2016), which is 34% higher than AWE's current gross 2P Reserves estimate for Waitsia of 344 Bcf of gas*.

David Biggs, CEO and Managing Director of AWE Limited, commented:

"The performance of the Stage 1A wells has exceeded the pre-production expectations and further demonstrates the high quality of the Waitsia gas field's conventional reservoir system."

"We are excited about the production potential of the Waitsia-1 Kingia Formation, which we plan to flow in 2017, and we are also considering flow testing the Waitsia-2 appraisal well which was drilled in 2015 and subsequently suspended," Biggs said.

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The Stage 1A development has well capacity in excess of the 9.6 TJ/day required under the initial 2.5 year contract which underpins the Waitsia Extended Production Test (EPT). Production from Stage 1A is likely to continue beyond the term of the current sales contract.

The Waitsia gas project is operated by AWE and located in production licence L1/L2 in the onshore Perth Basin, Western Australia, approximately 367 km north of Perth and 16.5 km east-southeast of Dongara.

Table 1. Well Test results v Extended Production Test preliminary results[^]

	Senecio-3 (Kingia)	Waitsia-1 (HCSS)	Waitsia-1 (Kingia)
Estimated connected OGIP from well test	18-65 Bcf of gas	16-47 Bcf of gas	49-59 Bcf of gas
Preliminary connected OGIP from EPT	45-80 Bcf of gas	>50 Bcf of gas	Not yet tested

Notes

* The estimated 2P Reserves for the Waitsia Gas Field, as announced via the Australian Securities Exchange (ASX) on 20 September 2016, remain unchanged.

[^] The OGIP estimates in Table 1 are only a component of the total OGIP that supports 2P Reserves for the Waitsia Gas Field (announced 20 September 2016).

The Joint Venture partners in L1/L2 (Waitsia) are:

AWE Limited (via subsidiaries) (Operator)	50.00%
Origin Energy Developments Pty Ltd	50.00%

About AWE Limited

AWE Limited is an independent, Australian energy company focused on upstream oil and gas opportunities. Established in 1997 and listed on the Australian Securities Exchange (ASX: AWE), the company is based in Sydney with project offices in Perth and New Zealand. AWE has a substantial portfolio of production, development and exploration assets in Australia, New Zealand, and Indonesia.

For information please see our website www.awexplore.com or contact:

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ENDS

C5. Audit Declaration in the AWE's 30 June 2016 Year End Financial Report

Audit and non-audit services

Details of the amounts paid to the auditor of the Company, Ernst & Young, and its related practices for audit and non-audit services provided during the year are set out below.

	2016	2015
Ernst & Young	\$	\$
Audit services - auditor of the Company		
Audit and review of financial reports	414,899	472,348
Taxation Services		
Taxation compliance services	57,136	93,733
Other Services		
Advisory and assurance services	32,346	21,480
Total remuneration of Ernst & Young	504,381	587,561

During the year Ernst & Young, the Company's auditor, has performed certain other services in addition to their statutory duties. The Board has considered the non-audit services provided during the year by the auditor and in accordance with written advice provided by resolution of the Audit & Governance Committee, is satisfied that the provision of those non-audit services during the year by the auditor is compatible with the auditor independence requirements of the Corporations Act 2001 for the following reasons:

- All non-audit services do not impact the integrity and objectivity of the auditor; and
- The non-audit services do not undermine the general principles relating to auditor independence as set out in APES 110 Code of Ethics for Professional Accountants, as they did not involve reviewing or auditing the auditor's own work, in a management or decision making capacity for the Company, acting as an advocate for the Company or jointly sharing risks and rewards.

Auditor's independence declaration under section 307C of the Corporations Act 2001

The auditor's independence declaration is set out on page 16 and forms part of the Directors' Report for the year ended 30 June 2016.

Rounding off

The Company is of a kind referred to in Australian Securities and Investments Commission ("ASIC") Class Order 2016/191 dated 24 March 2016 and in accordance with that Class Order amounts in the financial report and the Directors' Report have been rounded off to the nearest one thousand dollars unless otherwise stated.

BRUCE PHILLIPS

Chairman

DAVID BIGGS

Chief Executive Officer and Managing Director

Dated at Sydney this 25th day of August 2016



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Sydney NSW 2000 Australia
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Auditor's Independence Declaration to the Directors of AWE Limited

As lead auditor for the audit of AWE Limited for the year ended 30 June 2016, I declare to the best of my knowledge and belief, there have been:

- a) no contraventions of the auditor independence requirements of the *Corporations Act 2001* in relation to the audit; and
- b) no contraventions of any applicable code of professional conduct in relation to the audit.

This declaration is in respect of AWE Limited and the entities it controlled during the financial period.

A handwritten signature of 'Ernst & Young' in cursive script.

Ernst & Young

A handwritten signature of 'Scott Jarrett' in cursive script.

Scott Jarrett
Partner
25 August 2016

A member firm of Ernst & Young Global Limited
Liability limited by a scheme approved under Professional Standards Legislation

C6. Waitsia Gas Project Stage 1A Major Updates - 30 June 2016 Financial Report

2.2 Western Australia

Waitsia Gas Project (L1/L2, onshore Perth Basin, AWE 50%, Operator)

The AWE operated joint venture made significant progress on the Waitsia gas project during the period. Construction of Stage 1A was completed and gas production commenced subsequent to the end of the period. Stage 1A involves production from the Waitsia-1 and Senecio-3 wells being produced through the upgraded Xyris Production Facility.

During the period, the Company recognised a significant increase in 2P Reserves and 2C Contingent Resources, comprising a 93% increase in 2P Reserves to 344Bcf of gas (AWE share 172 Bcf of gas or 30.4 mmboe) and a 30% increase in 2C Contingent Resources to 630 Bcf (AWE share 315 Bcf or 55.7 mmboe).

The Company achieved excellent flow test results at Waitsia-1 where independent flow tests from the Kingia and High Cliff Sandstone reservoirs delivered a total combined flow rate in excess of 50 mmscf/d, constrained by production tubing diameter.

At the end of the period, the Company was evaluating development options for the Stage 2 development, with production of up to 100 TJ/day and gas marketing was underway. The Company is targeting final investment decision (FID) for Stage 2 in calendar year 2017.

Onshore Perth Basin (AWE 33.0% to 100%)

The Onshore Perth Basin operations contributed 0.36 mmboe to AWE's gas and oil production for the year, with AWE's share totalling 2.1 PJ of natural gas, with approximately 2,000 barrels of condensate. The majority of production was delivered from the Beharra Springs gas project.

Work continued in relation to decommissioning of legacy infrastructure in the Perth Basin.

Cliff Head Oil Project (offshore Perth Basin, AWE 57.5%)

The Cliff Head oil project contributed gross production of 0.48 million barrels of oil. AWE's net share of production was approximately 0.28 million barrels for the year, a reduction of 23% due to natural field decline.

The Company recognised an impairment of \$14.6 million after tax at 31 December 2015 due to lower long term oil price forecasts.

In June 2016, AWE sold its 57.5% interest in the Cliff Head oil project to Triangle Energy (Global) Limited for consideration of \$3.2 million which resulted in a net gain of \$16.4 million (post tax \$6.7 million) following write back of net liabilities.

2.3 New Zealand

Tui Oil Project (offshore Taranaki Basin, AWE 57.5%)

The Tui oil project recorded gross oil production of 1.37 million barrels (AWE share 0.79 million barrels), down 6% on the previous year.

Inventory at the end of the period was 345,000 barrels (AWE share 198,400 barrels).

The Company recognised an impairment of \$53.6 million after tax in the carrying value of the Tui oil project at 31 December 2015 due to lower long term oil price forecasts.

The contract for the "Umuroa" FPSO was renegotiated and extended by one year to 31 December 2017.

2.4 United States of America

Sugarloaf AMI (onshore Texas, AWE share 10%, net ~7.5% after landowner royalties)

During the period, the Company's interest in the Sugarloaf AMI contributed approximately 629,000 barrels of condensate, 2.2 PJ of gas and 25,700 tonnes of LPG, net of landowner royalties.

In March 2016, the Company sold its interest in the Sugarloaf AMI to Carrier Energy Partners II for USD190 million, before purchase price adjustments. This asset has been included as a discontinued operation in the financial statements.

C7. Waitsia Project Stage 1A Production Information in the 31 March 2017 Quarterly Report

"The remainder of CY 2017 will be very important to AWE with a number of major catalysts and milestones ahead. We will commence marketing uncontracted gas from Casino in June, and we will continue to focus on our major development projects and maximize the return from our production assets as we look to deliver growth for our shareholders," Biggs concluded.

PRODUCTION & RESERVES

PRODUCTION

Production for the March quarter was 0.7 mmboe, 3% lower than the December quarter primarily due to the sale of the Tui oil project which was completed at the end of February. The loss of one month's production from Tui was largely offset by improved production from BassGas, up 26%, and Waitsia Stage 1A, up 8%. Production for the first nine months of FY17 was 2.2 mmboe and remains in line with guidance. The ratio of gas to liquids production was 73:27 for the March quarter, compared with 70:30 in the previous quarter.

Production by Product	3 months to Mar 2017	3 months to Dec 2016	Qtr on Qtr Change	9 months to Mar 2017	9 months to Mar 2016 ¹	YTD Change
Oil ('000 Bbls) ²	89	146	-39%	386	619	-38%
Condensate ('000 Bbls) ²	45	36	23%	134	165	-19%
LPG (Tonnes)	4,017	2,634	53%	11,403	14,194	-20%
Gas (TJ)	2,987	2,917	2%	9,277	10,196	-9%
Total ('000 BOE)	678	698	-3%	2,198	2,648	-17%

Production by Project ('000 BOE)	3 months to Mar 2017	3 months to Dec 2016	Qtr on Qtr Change	9 months to Mar 2017	9 months to Mar 2016 ¹	YTD Change
BassGas	313	248	26%	928	1,119	-38%
Casino/Henry	149	164	-9%	520	617	-17%
Onshore Perth Basin	58	77	-25%	205	292	-16%
Waitsia Stage 1A	69	64	8%	159	n/a ³	n/a
Tui	89	146	-39%	386	619	-30%
TOTAL ('000 BOE)	678	698	-3%	2,198	2,648	-17%

Notes: 1. Production data for prior periods has been adjusted to exclude operations discontinued or divested in FY16, specifically Sugarloaf and Cliff Head. For reported historic data, please refer to AWE's FY16 Annual Report, Quarterly and Financial Reports. 2. Oil and condensate production rounded to the nearest 1,000 barrels. 3. Waitsia Stage 1A commenced production in August 2016. Numbers may not add due to rounding.



Above: Onboard the FPSO "Umuroa" at the Tui Oil Project, New Zealand (divested February 2017)

Exploration

In permit VIC/P44 (AWE 25%), the Joint Venture is reviewing options for a possible future exploration program that in a success case could tie into existing infrastructure at the Casino Field. Applications have been submitted to renew retention leases over VIC/RL11 (Martha) and VIC/RL12 (Blackwatch) for a further five year period.

WESTERN AUSTRALIA

Onshore Perth Basin –

Waitsia Gas Project (50%, Operator)

Gross production for the December quarter increased by 8% over the previous quarter, in line with budgeted targets, and comprised 832 TJ of gas and 263 barrels of condensate. AWE's share was 416 TJ of gas and 131 barrels of condensate. The average daily rate for the quarter was 9.2 TJ/d.

AWE continues to observe excellent performance from the Senecio-3 and Waitsia-1 wells as it tests multiple zones in each well.

Planning for the final Stage 2 appraisal wells, Waitsia-3 and Waitsia-4, is nearing completion with the first well to be spudded in mid-May 2017. It is anticipated that both wells will be completed as future production wells. Results from these wells may lead to conversion of significant 2C Contingent Resources to 2P Reserves.

Work on pre-Front End Engineering Design (FEED) made good progress. Following analysis and evaluation, it is anticipated that the joint venture will be in a position to commence FEED from June 2017.

Marketing of Stage 2 gas is also proceeding well. The first gas sales term sheet, agreed with AGL for 15 TJ/day (5.5 PJ/year), was announced in February. Negotiations for additional gas sales are progressing well with a selected shortlist of buyers. AWE is aiming to contract substantial gas volumes in CY 2017 ahead of FID.

Waitsia Stage 2 is expected to supply approximately 100 TJ/d of gas for 10 years. Feedback from potential customers indicates that the Waitsia gas is a welcome addition to the Western Australia domestic gas market as it increases competition among producers, provides diversity of supply, and improves security of supply by offering a lower risk onshore supply chain.

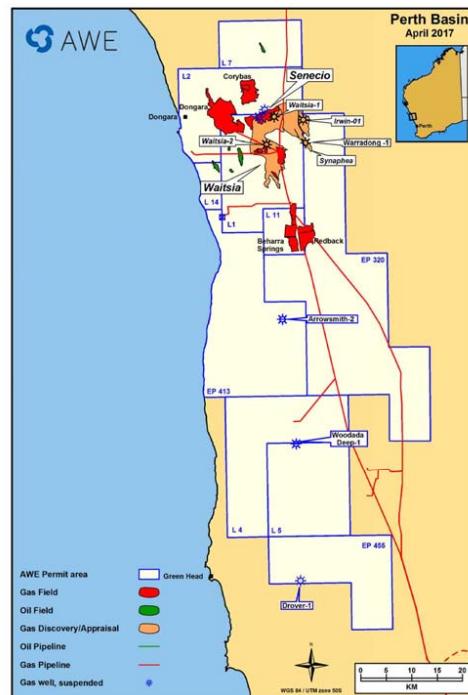
Dongara, Corybas, Beharra Springs (33–100%, some Operated)

AWE's share of production from the Dongara, Corybas and Beharra Springs assets was down 25% with 346 TJ of gas and 300 barrels of condensate. The drop in production was due to the completion of minor gas sales contracts associated with Dongara and Corybas. AWE's program to decommission non-producing wells and rehabilitate well sites is continuing as planned and will continue over a number of years.

Exploration

In EP320 (AWE 33%), the Joint Venture is planning a 3D seismic programme to fulfil Permit Year 2 work commitments. The 3D survey will mature significant Waitsia-style prospects in the Kingia and High Cliff sandstones in the east of the permit.

In production license L11 (AWE 33%), the Joint Venture is considering an exploration well to test the Beharra Deep prospect in the Kingia and High Cliff Sandstones directly beneath Beharra Springs Gas Field and close to existing processing facilities.



C8. Waitsia Project Stage 1A Highlights in the 30 June 2016 Quarterly Report

Issued by AWE Limited on 29 July 2016

Quarterly Report

For the 3 months to 30 June 2016



HIGHLIGHTS

PRODUCTION AND DEVELOPMENT

- Full year production for FY 2015-16 of 5.0 mmboe was within guidance range
- Following the sale of Sugarloaf in March 2016, June quarter production of 0.9 mmboe was down 33% on the previous quarter as expected
- Waitsia Stage 1A construction nearing completion and on target for first gas in August 2016
- AAL FID now expected in second half of calendar year 2017

EXPLORATION AND APPRAISAL

- Good flow test results from the AAL appraisal well, which successfully drilled and intersected the primary G Sand and secondary K Sand targets and was completed within the Operator's budget

RESERVES AND RESOURCES

- Waitsia gross 2P Reserves increased by 93% to 344 Bcf of gas (AWE share 172 Bcf), and Waitsia gross 2P plus 2C up 30% to 630 Bcf of gas (AWE share 315 Bcf)

FINANCIAL AND CORPORATE

- Net cash at 30 June 2016 was \$18 million, comprising cash of \$33 million and drawn debt of \$15 million
- The average realised oil and condensate price, inclusive of hedging, for the June quarter was A\$58.99 per barrel
- Sales revenue, including hedging, for the June quarter was \$39 million, down 4% over the March quarter
- Sales revenue, including hedging, for the 2015-16 financial year was \$202 million, down 29% over the previous financial year
- Sale of Cliff Head completed and sale of Lengo announced
- No Lost Time Injuries (LTIs) or reportable environmental incidents during the quarter
- New CEO and MD, David Biggs, and new CFO, Ian Bucknell, commenced

	QUARTERLY PRODUCTION BY PRODUCT '000 BOE	QUARTERLY SALES REVENUE BY PRODUCT \$'000
GAS	523	15,246
OIL	232	16,715
CONDENSATE	53	4,759
LPG	57	2,680
TOTAL	865	39,400

Note: Numbers may not add due to rounding. Sales Revenue includes effective hedging where applicable.

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MANAGING DIRECTOR'S COMMENTS

Over the past 12 months, AWE has reshaped itself to operate sustainably in a low oil price environment. The key elements of this strategy were cost control, optimisation of operating structures, reduction and reprioritisation of investment spend, and capital recycling through active portfolio management - which included the sale of Sugarloaf, Cliff Head (both complete) and Lengo (pending).

The benefits to AWE have been significant:

- Strengthened the balance sheet by repaying debt with sale proceeds
- Removed significant recurring capex commitments
- Removed near term sensitivity to oil price, while retaining exposure to longer term improvement
- Focused the company on developing Waitsia - a newly discovered, low cost, major domestic onshore gas field in WA.

AWE is now in a substantially different position to where it was 12 months ago. We have reprioritised our production and development portfolio to be firmly weighted towards stable gas revenues in the near to medium term, and future spending commitments have been eliminated or significantly reduced. In addition, the company has repaid over \$200 million of debt and was in a net cash position at 30 June.

Although current market conditions are challenging, we remain focused on growing the company. We will continue to foster our traditional technical strengths, particularly in exploration and appraisal, and we have a strong portfolio of quality 2P Reserves and 2C Contingent Resources that provides us with a pipeline of development projects and growth options.

Against this background, AWE achieved a number of milestones in the June quarter with further asset sales, reserves growth and substantial progress on key development projects. Full year production was within guidance, development and exploration spending was disciplined and came in below guidance, and sales revenue was only 4% below guidance, largely due to the timing of liftings undertaken at Tui.

In Western Australia, our operating team made excellent progress on the construction of Stage 1A of the Waitsia gas project and work is rapidly nearing completion. The project is on time and within budget and first gas is planned for August 2016, as scheduled. The concept select process for the next development stage of the Waitsia gas field has commenced.

During the quarter, Waitsia gross 2P Reserves were increased by a substantial 93% to 344 Bcf of gas (net 172 Bcf to AWE) following the evaluation of core data from the Waitsia 1 and Waitsia 2 wells. Total gross 2P plus 2C for Waitsia, Senecio, Irwin and Synaphea now stands at gross 867 Bcf (net 432 Bcf to AWE).

In Indonesia, the AAL appraisal well was spudded in May and two Drill Stem Tests (DST's) delivered positive results, which could lead to an increase in gross recoverable oil for the AAL project and enhanced project economics. Preliminary laboratory testing of the recovered oil samples from both the K Sand and G Sand reservoirs indicated lower levels of impurities than expected, which should have a positive impact on future marketing of the crude. FID has been extended to the second half of calendar year 2017 to allow contractors more time to submit revised bids that conform to recent regulatory changes.

Portfolio management and capital recycling continued with the sale of our interest in the Cliff Head oil project completed in June. The divestment of Cliff Head, a mature production asset, will also reduce AWE's exposure to future field decommissioning costs. The sale of Lengo, a pre-development gas project in Indonesia, was announced in May and is awaiting regulatory approval.

The year ahead will see us further consolidate our position in a very challenging market. With fewer production assets, both production and revenue will naturally be lower over the near term, but our pipeline of quality projects – particularly Waitsia and AAL - makes me enthusiastic about the growth potential of AWE in the medium term and beyond.

David Biggs
Managing Director and CEO

FINANCIAL & CORPORATE

FINANCIAL

Production for the June quarter was 0.9 mmboe, 33% lower than the March quarter as expected due to no contribution from Sugarloaf (sold in March 2016). After adjusting for the divestment of Cliff Head and Sugarloaf, normalised production for the June quarter was 0.8 mmboe and in line with the March quarter.

The ratio of gas to liquids production was 60:40 for the June quarter, compared with 50:50 in the previous quarter, which underlines AWE's near-term strategy of reducing exposure to low oil prices.

For the 12 months to 30 June 2016, total production of 5.0 mmboe was similar to the previous 12 month period (5.1 mmboe) and within our guidance range of 4.9 to 5.1 mmboe. The improved full year contribution from BassGas offset lower production from Casino and Cliff Head and the impact of the Sugarloaf sale.

Sales revenue, including hedging, for the June quarter was \$39 million, down 4% from \$41 million reported in the March quarter. A single lifting was undertaken at Tui in April and oil inventory at 30 June was 198,400 barrels net to AWE. The average realised oil and condensate price was A\$58.99 per barrel for the June quarter and A\$57.30 per barrel for the full financial year. Sales revenue for the 12 months to 30 June, including hedging, was \$202 million and 4% below the lower end of the guidance range of \$210 to \$220 million due to the timing of liftings undertaken at Tui.

The mark to market value of unutilised hedging at 30 June 2016 was a liability of \$2.3 million, comprising 403,000 barrels of oil hedged for the 12 months to June 2017 at a weighted average Brent price of US\$47.82 per barrel in relation to New Zealand production assets. A payment of \$1.4 million was made in respect of hedges related to Cliff Head for FY 2016-17 that were closed out early following its divestment.

Development expenditure for the June quarter was \$30 million, an increase of 52% compared to the previous quarter. The increase was due primarily to the drilling of the AAL appraisal well and development expenditure in respect of the Waitsia Stage 1A gas project. Exploration expenditure was further reduced to \$0.3 million for the quarter. For FY 2015-16, development expenditure of \$120 million was below the guidance range of \$125 to \$135 million, and exploration expenditure of \$19 million was below the \$25 million forecast.

Field Opex for the June quarter was \$26 million and Field EBITDAX for the period was \$14 million. For the full financial year, Field Opex was \$111 million, down 22% from the previous financial year, and Field EBITDAX was \$91 million, down 36%.

At the end of June 2016, AWE was in a net cash position of \$18 million, with cash of \$33 million, drawn debt of \$15 million, and undrawn facilities of \$385 million. Subsequent to the end of the period, the company reduced its debt facility by \$100 million to \$300 million, which reflects AWE's significantly lower capex commitments post the sale of Sugarloaf.

DEVELOPMENT EXPENDITURE	3 months to June 2016	3 months to March 2016	12 months to June 2016
	\$'000	\$'000	\$'000
South East Australia	4,457	6,136	45,218
Western Australia	6,769	2,622	17,694
New Zealand*	(46)	2	(2,493)
USA	-	7,997	26,241
Indonesia	19,213	3,184	33,629
Total	30,394	19,942	120,290

Note: Financial highlights are preliminary and unaudited. Numbers may not add due to rounding. Sales Revenue includes effective hedging where applicable. * Credits reflect over-accrued expenditure from prior periods.

EXPLORATION EXPENDITURE	3 months to June 2016	3 months to March 2016	12 months to June 2016
	\$'000	\$'000	\$'000
South East Australia	182	260	878
Western Australia	665	615	5,895
New Zealand*	74	71	(201)
Indonesia	183	266	1,774
China*	(844)	87	9,855
Other	69	130	554
Total	329	1,428	18,755

Note: Financial highlights are preliminary and unaudited. Numbers may not add due to rounding. Sales Revenue includes effective hedging where applicable. * Credits reflect over-accrued expenditure from prior periods.

EBITDAX	3 months to June 2016	3 months to March 2016	12 months to June 2016
	\$ million	\$ million	\$ million
Sales Revenue	39	41	202
Field Opex	26	21	111
Field EBITDAX	14	20	91

CORPORATE

As previously announced, AWE's new Managing Director and CEO, Mr David Biggs, commenced in May.

Subsequent to the end of the period, Mr Ian Bucknell joined AWE in July as Chief Financial Officer. Ian is an experienced CFO with over 18 years international upstream oil and gas financial experience including senior executive roles at Drillsearch Energy, Great Artesian Oil and Gas, and Oil Search.

In May, AWE received an unsolicited indicative, conditional and non-binding proposal from Lone Star Japan Acquisitions Ltd on behalf of a Lone Star Fund to acquire all of the shares in AWE for a cash consideration of A\$0.80 per share. The AWE Board decided to reject the proposal, concluding that it was opportunistic and did not reflect the fair underlying asset value of the company.

In May, AWE announced it had entered into an agreement to sell its 42.5% interest in the Bulu PSC, including the undeveloped Lengo gas project, to a subsidiary of HyOil Pte Ltd for up to A\$27.5 million cash. The effective date is 1 April 2016 and the transaction is subject to the approval of the Indonesian government.

AWE completed the sale of its 57.5% interest in the Cliff Head oil project to Triangle Energy in June for total consideration of A\$3.2 million with an additional royalty of US\$5/bbl receivable by AWE for oil sales in excess of US\$70/bbl. The effective date of the transaction was 1 January 2016 and net cash paid to AWE, after final purchase price adjustments, was A\$2.3 million.

RESERVES AND RESOURCES

In June, AWE upgraded its assessment of Reserves and Resources for the Waitsia gas project in Western Australia's onshore North Perth Basin. Waitsia gross 2P Reserves increased by 93% to 344 Bcf of gas (AWE share 172 Bcf of gas or 30.4 mmboe) and Waitsia gross 2P Reserves plus 2P Contingent Resources increased by 30% to 630 Bcf of gas (AWE share 315 Bcf of gas or 55.7 mmboe). AWE's 2C Contingent Resources for the Senecio, Irwin and Synaphea tight gas fields remained unchanged at gross 237 Bcf of gas (net 117 Bcf to AWE). AWE was awarded Best Peer Reviewed Paper at the 2016 APPEA Conference, for the second consecutive year, for its paper on the Waitsia field.

PRODUCTION & DEVELOPMENT

SOUTH EAST AUSTRALIA

BassGas Project (35%), Bass Basin

Gross production for the June quarter was up 3% over the previous quarter and comprised 4.6 PJ of gas, 151,000 barrels of condensate and 14,000 tonnes of LPG. AWE's share was approximately 1.6 PJ of gas, 53,000 barrels of condensate and 5,000 tonnes of LPG. Production during the quarter was affected by well head maintenance activity. The average gross daily rate for the quarter was 51 TJ/day.

Hook-up and commissioning work for the compression and condensate pumping modules on the Yolla Platform continued to make good progress, with start up targeting the first half of calendar year 2017.

Casino Gas Project (25%), Otway Basin

Gross quarterly production for the Casino Gas Project increased by 1% compared to the previous quarter, with 4.5 PJ of sales gas and 1,800 barrels of condensate. AWE's share of production was 1.1 PJ of sales gas and 450 barrels of condensate. The average gross daily rate for the quarter was 49 TJ/day.

WESTERN AUSTRALIA

Cliff Head Oil Field (57.5%), Offshore Perth Basin

Gross quarterly production for Cliff Head was down 13%, quarter on quarter, with approximately 107,000 barrels produced at an average rate of 1,174 bopd. AWE's share was 61,000 barrels. AWE completed the sale of its 57.5% interest in the Cliff Head oil project to Triangle Energy in June 2016.

Onshore Perth Basin (33–100%, some Operated)

Gross production for the March quarter was down 18% from the previous quarter. AWE's share of production from the various onshore Perth Basin assets was 400 TJ of gas and 400 barrels of oil/condensate.

Waitsia Gas Project (50%, Operator), Onshore Perth Basin

Work on Stage 1A of the Waitsia Gas Project progressed well, remaining on time and within budget. Engineering, execution and management costs for Stage 1A are estimated at \$18 million (\$9 million net to AWE) and initial production capacity will be approximately 10 TJ per day. First gas is scheduled for August 2016, with Alinta Energy taking up to a Maximum Daily Quantity of 9.6 TJ/day under a 2.5 year Take or Pay gas sales agreement.

NEW ZEALAND

Tui Area Oil Fields (57.5%, Operator), Taranaki Basin

Gross production from the Tui Oil Fields was down 1% from the previous quarter with 296,000 barrels (net of fuel oil consumed) produced at an average daily rate of 3,250 bopd (gross net of fuel). AWE's share of production was 170,000 barrels. One crude oil sale lifting of 379,000 barrels was achieved during the quarter. Inventory at the end of the June quarter was 345,000 barrels, net 198,400 barrels to AWE.

Work on reducing operating expenditure, including FPSO costs, is continuing. A production optimisation project is also ongoing. Planning for project decommissioning, anticipated in 2019 subject to oil prices, has commenced and discussions with the regulator are ongoing.

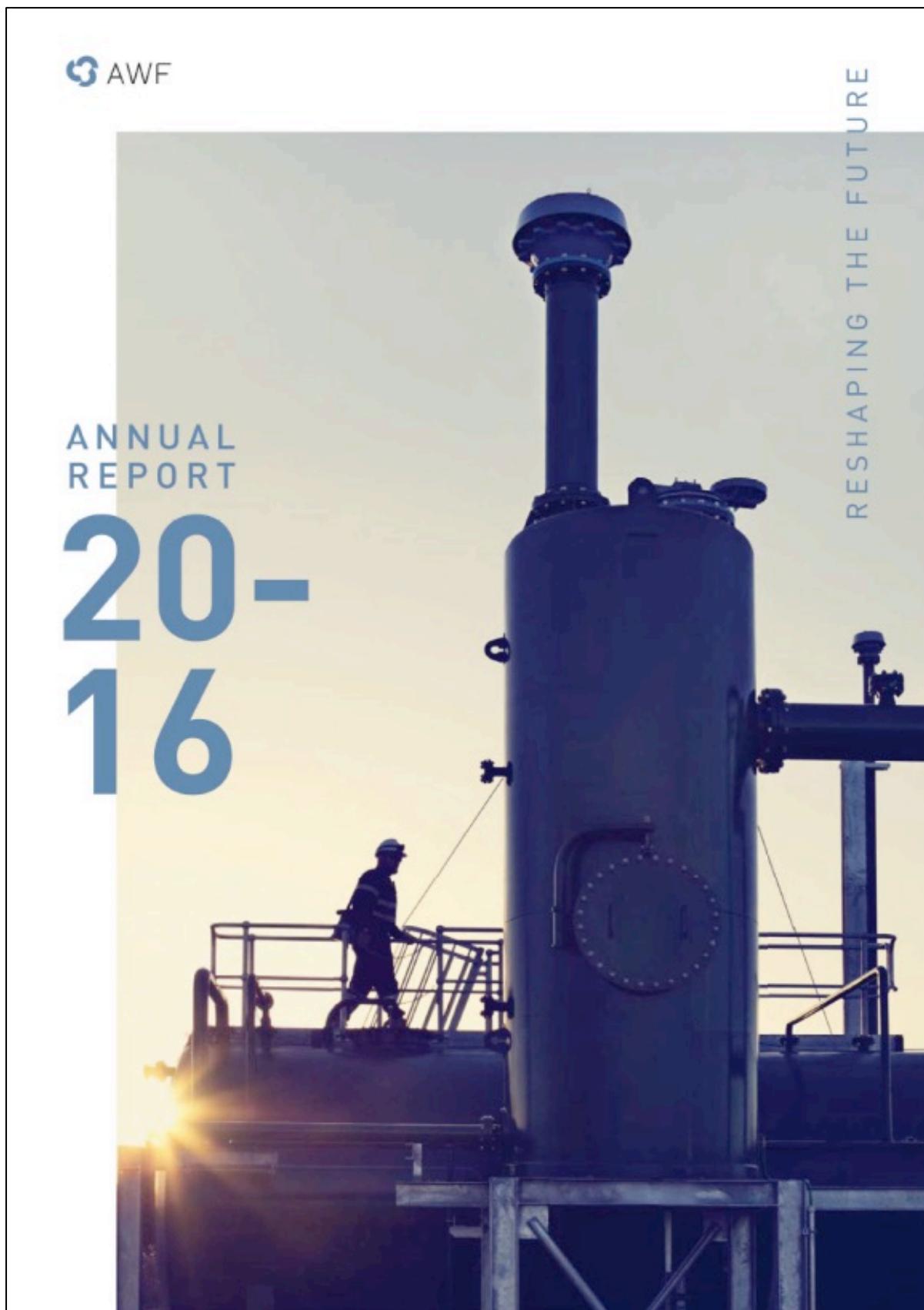
INDONESIA

Ande Ande Lumut Oil Project (50%), Northwest Natuna Sea

The AAL-4XST1 appraisal well was spudded in May and operations were completed in early July. The primary target was the G Sand reservoir, estimated to contain 289 mmbbl gross oil in place with 36 mmbbls gross recoverable oil (net 8.4 mmbbls 2C Contingent Resources to AWE), which is located below the K sand reservoir (101 million barrels gross recoverable oil, net 24.3 million barrels of 2P Reserves and 1.7 million barrels 2C Contingent Resources).

The well successfully drilled and intersected the primary G Sand and secondary K Sand targets. Both reservoirs are of excellent quality and were fully cored for further analysis. Drill Stem Tests (DSTs) were performed on both reservoirs and oil flowed successfully to surface, assisted by Electrical Submersible Pumps

C9. AWE Annual Report 2016



FROM THE CHAIRMAN



FROM THE CHAIRMAN

Fellow AWE shareholders

It's now more than two years since the price of Brent oil began its plunge from US\$115 per barrel in mid-June 2014, bottoming at US\$29 per barrel in January 2016 before rallying back towards US\$50 per barrel by mid-2016. In that relatively short space of time, the structure of oil and gas markets has changed significantly with a number of companies, industries and governments coming under sustained economic pressure.

Although low oil prices adversely impacted AWE's share price, particularly since August 2015, our financial and operational performance in the 2016 financial year [FY16] was in line with guidance. This achievement reflects the underlying value in the skills of AWE's people, and the diversity and quality of the company's projects, reserves and resources.

Resetting the Bar

We achieved the FY16 performance by reshaping AWE to operate in a "lower for longer" oil price environment. With a clear focus on capital discipline, cost reduction and asset consolidation, AWE managed ongoing market volatility and delivered a number of significant project milestones. We made a number of tough decisions designed to strengthen our overall financial position so that the company can continue to operate sustainably in a sub-US\$50 per barrel market. AWE successfully:

- + reduced corporate overheads by 41%;
- + reduced total investment expenditure by 55%;
- + reduced our geographic footprint by exiting USA and China and downscaling operations in Indonesia;
- + reduced recurring capex through the sale of Sugarloaf; and
- + repaid debt with the proceeds of asset sales.

We also undertook to deliver revenue and cash flow certainty by hedging oil production from Sugarloaf, Tui and Cliff Head from October 2015 through to June 2016.

These measures made it possible for AWE to continue to deploy capital on two high quality, long life growth opportunities: the AWE-operated Waitsia gas project in Western Australia's Perth Basin and the Ande Ande Lumut (AAL) oil project in Indonesia.

MANAGING DIRECTOR'S REVIEW



Reserves and Resources

One of AWE's key strengths is the depth and diversity of our reserves base. We actively manage our portfolio of 2P Reserves and 2C Contingent Resources to ensure it continues to provide us with a healthy pipeline of development projects and growth options.

Reserves reduced overall during the year, largely due to the sale of Sugarloaf which removed 46.5 mmboe from 2P Reserves and 17.1 mmboe from 2C Contingent Resources. The other significant factor was a 4.5 mmboe reduction, after production, in BassGas 2P Reserves based on the Operator's assessment of lower observed reservoir performance from the Yolla-5 and Yolla-6 wells.

Conversely, in June 2016 AWE announced a significant reserves upgrade for the Waitsia gas project and AWE's share of Waitsia 2P Reserves increased by 93% to 30.4 mmboe.

At 30 June 2016, AWE held 2P Reserves of 71 mmboe and 2C Contingent Resources of 102.5 mmboe. Monetising these reserves and converting our contingent resources into reserves remains a high priority for AWE over the next few years as we seek to further strengthen the company's long-term production base.

Gas Marketing

Given the volatility in global oil prices, our near-term strategy is focused on extracting maximum value from domestic gas assets, where we have exposure to anticipated price increases in both the east and west coast markets over the next two to three years.

We have put together a gas marketing team, based in Perth, to look specifically at marketing large gas volumes from Waitsia as well as recontracting production from BassGas and Casino.

In the west, the temporary oversupply in the spot market is expected to be absorbed and long term domestic demand remains resilient. Customers are looking for diversity of gas producers and our Waitsia operation has the advantage of being relatively close to Perth and existing pipeline infrastructure. The optimal customer recontracting window is over the next three to five years and AWE anticipates a return to strong historic pricing for term supply contracts.

On the east coast, existing gas supply contracts are nearing completion and we will put in place new gas contracts for the Casino and BassGas projects for delivery from 2018 and 2019 respectively. East coast domestic gas prices have strengthened considerably over the last few years, and we anticipate significant price improvement over the historic \$3.50 to \$4.50 per GJ contract prices currently in place.

MANAGING DIRECTOR'S REVIEW

**Key Projects**

AWE reshaped its business considerably over FY16, selling Sugarloaf, Cliff Head and Lengo, and entered FY17 with four production assets in BassGas, Casino, Tui and the onshore Perth Basin operations. While these assets are in various stages of decline, BassGas and Casino have many years ahead of them subject to further development.

However, AWE is unique among our peers in having two major, long-life development assets in Waitsia and AAL. **We made rapid progress in a number of areas on Waitsia and reached significant milestones on AAL, with both projects moving closer to FID in 2017.**

Waitsia gas project (50%, Operator), onshore Perth Basin, Western Australia

FY16 was an exceptional year for everyone involved in the Waitsia project. Discovered in September 2014, Waitsia is regarded as the largest onshore conventional gas discovery in Australia for the last 30 years and will revitalise the onshore Perth Basin, a major gas producing region for more than 50 years.

AWE flow tested the Waitsia-1 well and in October 2015 we achieved a combined flow rate from the Kingia and High Cliff Sandstones in excess of 50 mmscf/d, an exceptional result and one of the best onshore flow tests observed in Australia over the past 20 to 30 years.

The company's long history in the Perth Basin provided us with the ability to move quickly to a FID for the first phase of development, the Waitsia Stage 1A project, in January of 2016. Stage 1A involved the construction of new flowlines and infrastructure to connect the Senecio-3 and Waitsia-1 wells to the refurbished Xyris Production Facility with the capacity to produce up to 10 TJ/d.

Stage 1A was completed on time and under budget and first gas was achieved on schedule in August 2016. Gas from Waitsia Stage 1A is transported south via the Parmelia pipeline where Alinta Energy takes up to a Maximum Daily Quantity of 9.6 TJ/d under a 2.5 year take or pay agreement.

Waitsia's 2P Reserves were upgraded by 93% in June 2016 to 30.4 mmboe net to AWE. Subsequent to year end, in September 2016, AWE received independent certification that its 2P Reserves could provide at least 100 TJ/d for up to 10 years. The report also estimated that Waitsia's 2P Reserves were 34% higher than AWE's June estimate. Although pleased with this result, AWE decided to hold its 2P Reserves pending completion of seismic studies, further appraisal drilling, flow testing and analysis.

WAITSIA GAS FIELD

FROM DISCOVERY TO PRODUCTION IN LESS THAN TWO YEARS

2014

SEP

Significant new gas discovery at Senecio-3 well announced
AWE confirms significant gas discovery for Waitsia field

2015

MAR

Senecio-3 flow test confirms Waitsia field's commercial potential

MAY

AWE starts drilling Waitsia-1 appraisal well

JUN

Waitsia-1 results confirm further upside potential of Waitsia field
AWE commences drilling Waitsia-2 appraisal well

AUG

AWE upsizes onshore Perth Basin gross recoverable gas

OCT

Waitsia-1 flows 24.7 mmscf/d from High Cliff Sandstone
Waitsia-1 flows 25.7 mmscf/d from Kingia Formation

2016

JAN

FID achieved for Waitsia Stage 1A development

JUN

AWE upgrades Waitsia gross 2P Reserves by 93%

AUG

AWE achieves first gas sales from Waitsia field

C10. AWE Annual General Meeting Presentation 2015

ASX Announcement
20 November 2015



AWE Limited Annual General Meeting – Presentation

Please find attached AWE's 2015 AGM Presentation which will be presented at the Annual General Meeting of AWE Limited which commences at 10.30am on 20 November 2015, in compliance with listing rule 3.13.3.

Regards

Neville Kelly
Company Secretary

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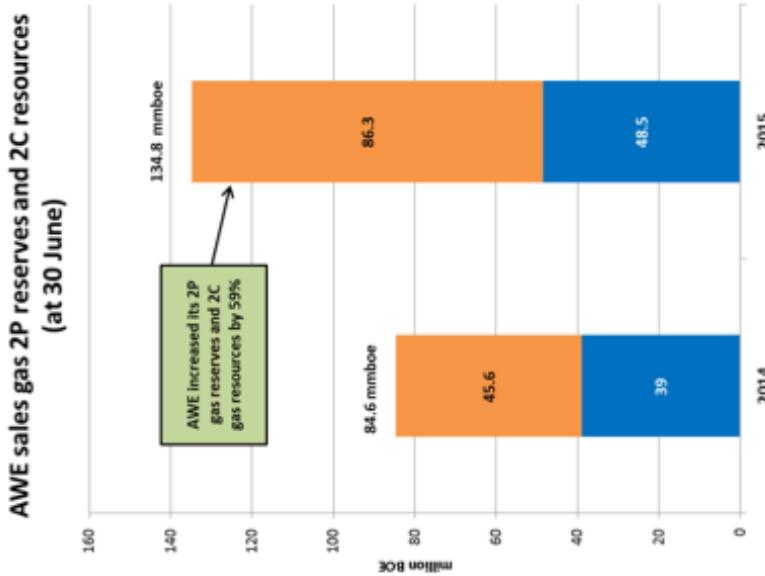


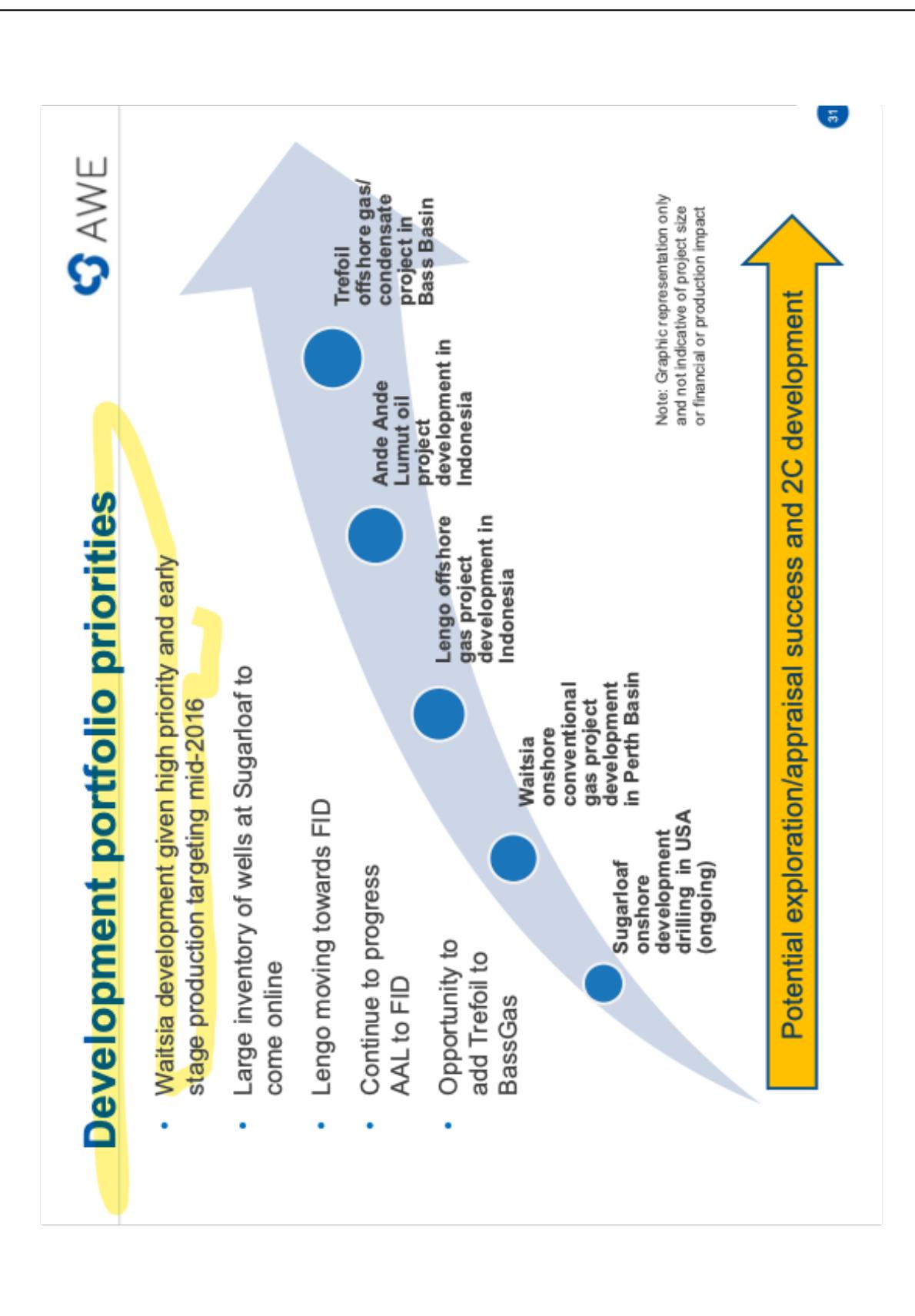


Focus on near-term gas projects

AWE has rapidly increased its project-ready gas Reserves and Resources to take advantage of improving, high-value gas markets

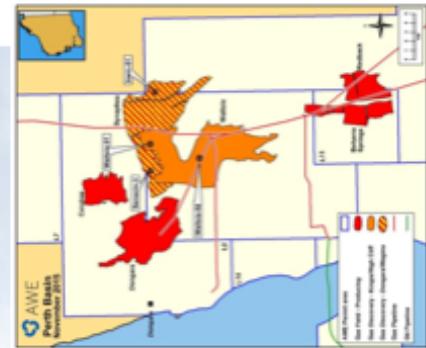
- The majority of AWE's Australian 2P gas reserves and 100% of AWE's Australian 2C gas resources exposed to higher gas prices in east and west coast markets
- Both Otway and Bass basin gas sales to be recontracted within the next 18 months
- Finalising negotiations for early production gas from Waitsia, WA, in mid-2016
- Marketing of larger volumes under way
 - Able to ramp up Waitsia production to capture market opportunities and match customer needs
- Lengo gas negotiations under way in Indonesia, where East Java gas market remains strong







Waitsia moves into development phase



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Targeting early production from initial development by mid-2016 subject to approvals

C11. AWE approves first stage Waitsia gas field development

ASX Announcement

5 January 2016



AWE approves first stage Waitsia gas field development

- **AWE and Origin Energy have achieved FID for Stage 1A of the Waitsia gas field project in the onshore Perth Basin, Western Australia**
- **Stage 1A will see the Waitsia-1 and Senecio-3 gas wells connected to the refurbished Xyris Production Facility**
- **Take or pay gas sales agreement with Alinta Energy for 10 TJ/day of gas over 2.5 years**
- **First gas scheduled for August 2016 and gross development capex estimated at \$17.5M**
- **AWE well positioned to become low cost gas producer in WA**

AWE Limited (ASX: AWE) today announced that the AWE-Operated L1/L2 joint venture has made the Final Investment Decision (FID) for Stage 1A of the Waitsia gas field development project, located in the onshore Perth Basin, Western Australia.

Stage 1A comprises the installation of new infrastructure and upgrades to existing assets that will connect the recently flow tested Waitsia-1 and Senecio-3 gas wells to the Xyris Production Facility (XPF). Treated gas from XPF will be delivered to the Parmelia pipeline for domestic consumption.

Engineering, execution and management costs for Stage 1A of the Waitsia gas project are estimated at gross \$17.5 million (\$9 million net to AWE). Construction work will include two four-inch flowlines from the well heads to a northern gathering manifold and a six-inch pipeline to transport the gas to XPF. FEED studies have been completed, and an EPCM contractor has been selected. In addition, the pipeline licence and the environment plan for the in-field gas pipeline have been approved.

The initial capacity of XPF will be approximately 10 TJ per day, with further expansion possible, and first gas is scheduled for August 2016. A take or pay gas sales agreement, based on 90% of annual gas quantity, has been negotiated with Alinta Energy for 10 TJ/day over a 2.5 year period. Pricing remains confidential for commercial reasons.

Mr Bruce Clement, AWE's Managing Director and CEO, said that FID of the first stage of the Waitsia gas project was a landmark for AWE and would reinvigorate the potential for onshore gas production in Western Australia.

"The 484 Bcf gross Waitsia gas project, with its excellent conventional reservoir quality and proximity to existing infrastructure, is incredibly exciting for AWE and represents another significant step-up in the company's growth potential.

"First stage production from Waitsia will provide early cash flow from mid-2016 as well as valuable data that will help us optimise our plans for full field development," he said.

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C12. AWE Quarterly Report end December 2015

Issued by AWE Limited on 29 January 2016

Quarterly Report

For the 3 months to 31 December 2015



HIGHLIGHTS

PRODUCTION AND DEVELOPMENT

- Total production of 1.5 mmboe for the December quarter, up 7% over the previous quarter, with Sugarloaf up 30% and BassGas up 27%.
- YTD production of 2.9 mmboe, up 12% over the previous corresponding six months, with BassGas up 22%, Sugarloaf up 44% and Tui up 33%.
- FID for Waitsia Stage 1A achieved in early January 2016 following a gas sales agreement with Alinta for 10 TJ/day over a 2.5 year period.

EXPLORATION AND APPRAISAL

- Excellent flow test results from Waitsia-1 achieved in October 2015 with a combined rate in excess of 50 mmscf/d from the conventional Kingia and High Cliff Sandstone formations.
- Offshore Indonesia, the Operator of the AAL oil project is planning to drill an appraisal well on the underlying G-Sand, targeting an additional 36 mmbbl gross 2C Resource to the established 101 mmbbl gross 2P Reserves.

FINANCIAL AND CORPORATE

- AWE to sell its 10% interest in the Sugarloaf AMI for US\$190 million (A\$271 million). At anticipated completion in March 2016, AWE estimates a net cash position of approximately A\$60 million.
- Revenue of \$63 million for the December quarter, up 7% over the previous quarter. Total revenue for the six months to 31 December 2015 was \$122 million, down 24% over the previous corresponding six months and Field EBITDAX was \$53 million.
- The average realised oil and condensate price for the December quarter, inclusive of hedging, was A\$67.66 per barrel.
- At 31 December 2015, prior to the Sugarloaf sale, AWE had net debt of \$197 million and undrawn facilities of \$173 million.
- No Lost Time Injuries (LTIs) or reportable environmental incidents during the quarter.

	QUARTERLY PRODUCTION BY PRODUCT '000 BOE	QUARTERLY REVENUE BY PRODUCT '\$'000
OIL	275	17,624
CONDENSATE	303	19,331
LPG	175	6,536
GAS	728	19,100
TOTAL	1,481	62,591

Note: Numbers may not add due to rounding. Revenue includes effective hedging where applicable.

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MANAGING DIRECTOR'S COMMENTS

AWE performed well in the second quarter of the 2015-16 financial year, improving production and revenue and significantly reducing expenditure. Production and revenue increased by 7% over the previous quarter, to 1.5 mmboe and \$63 million respectively, while combined development and exploration expenditure was down by a substantial 56%.

Strategically, we have worked hard to reshape the company and adapt to the low oil price environment, with a number of key initiatives delivering positive results:

- The recently announced divestment of Sugarloaf for US\$190 million (A\$271 million) is an excellent outcome that will allow us to strengthen the balance sheet by repaying all debt drawn under the Company's debt facility and recycle capital.
- The Waitsia gas project achieved FID for Stage 1A and first gas is scheduled for August 2016.
- Hedged oil revenues in Australia, New Zealand and the USA are well in the money at current oil prices and will underpin certainty of cash flow for the remainder of the financial year.
- Cost reduction activities are gaining traction, including closure of our Indonesian project office, reduced staff numbers, deferral of exploration commitments, and reduced development expenditure and operating costs.

The sale of Sugarloaf is significant on a number of levels. Apart from ensuring AWE maintains a robust balance sheet through a low oil price environment, we will have removed substantial recurring development expenditure and refocused the Company in the near term on high value gas assets, particularly in Australia where we have exposure to anticipated price increases for AWE's gas production in the east coast and west coast markets over the next two to three years.

Development approval for the first stage of the Waitsia gas project was particularly pleasing. Waitsia is an AWE discovery and the company has added significant value through the appraisal process with the potential for further upside in Reserves and Resources. Being a conventional onshore development with proximity to established infrastructure, we also have the ability to position AWE as the low cost producer in the west coast gas market.

On the east coast, the BassGas and Casino gas projects will be negotiating new gas contracts in the near term for delivery from 2018. Domestic gas prices have strengthened considerably over the last few years, and we anticipate significant price improvement over the \$4-5 per GJ contract prices currently in place.

In recent years, around 25% of AWE's cash flows have been derived from domestic CPI-linked sales from gas-producing assets. With the divestment of Sugarloaf and FID for Waitsia Stage 1A, this core cash flow base will increase over coming years and continue to provide substantial protection against oil price volatility.

AWE's balanced portfolio of assets provides substantial reserves growth potential and exposure to increases in both domestic gas and international oil markets. In Australia, the full field Waitsia gas project represents a significant opportunity for increasing gas production in an historically strong gas market, while the Ande Ande Lumut ("AAL") oil project in Indonesia provides exposure to upside in oil prices. AWE holds a 50% interest in the AAL project, potentially a 101 million barrel (gross 2P Reserves) oil field offshore Indonesia, where the Operator is planning to drill an appraisal well targeting an additional 36 million barrels (gross 2C Resources) volume in the deeper G-sand reservoir.

Looking ahead, AWE is tracking well against guidance which will be restated at our half year result in February to accommodate the divestment of Sugarloaf. Exploration and development costs are planned to reduce further during the remainder of 2015-16 and we will continue to manage our asset portfolio and costs to ensure a strong and robust balance sheet so that we can pursue significant value-adding projects.

Bruce Clement
Managing Director and CEO

Casino Gas Project (25%)

Gross quarterly production for the Casino Gas Project reduced by 21% compared to the previous quarter, with approximately 4.5 PJ of sales gas and 2,600 barrels of condensate. The reduction was primarily due to a 14 day shut down in October for annual maintenance at the Iona gas plant, as well as a 4 day shut in in early November in preparation for the onshore and offshore pipeline inspection program to be undertaken in early 2016. The average gross daily rate for the quarter was approximately 50 TJ/day. AWE's share of production was approximately 1.1 PJ of sales gas and 650 barrels of condensate.

WESTERN AUSTRALIA**Waitsia Gas Project (50%, Operator)**

AWE has made considerable progress on the early stage development of the Waitsia gas field following the excellent flow test results achieved at Waitsia-1 in October 2015, where two independent flow tests from the conventional Kingia and High Cliff Sandstone reservoirs delivered a total combined flow rate in excess of 50 mmscf/d, constrained by production tubing diameter.

The AWE-Operated L1/L2 joint venture achieved FID for Stage 1A of the Waitsia gas project in early January 2016. Stage 1A comprises the installation of new infrastructure and upgrades to existing assets that will connect the recently flow tested Waitsia-1 and Senecio-3 gas wells to the Xyris Production Facility (XPF). Treated gas from XPF will be delivered to the Parmelia pipeline for domestic consumption.

Engineering, execution and management costs for Stage 1A of the Waitsia gas project are estimated at gross \$18 million (\$9 million net to AWE). Construction work will include two four-inch flowlines from the well heads to a northern gathering manifold, a six-inch pipeline to transport the gas to XPF, and minor upgrades to the XPF. FEED studies have been completed, and an EPCM contract has been awarded. In addition, the pipeline licence and the construction environment plan for the in-field gas pipeline have been approved.

The initial capacity of XPF will be approximately 10 TJ per day, with further expansion possible, and first gas is scheduled for August 2016. A take or pay gas sales agreement, based on 90% of annual gas quantity, has been executed with Alinta Energy for 10 TJ/day over a 2.5 year period. Pricing remains confidential for commercial reasons.

Cliff Head Oil Field (57.5%)

Gross quarterly production for Cliff Head was down 19%, quarter on quarter, with approximately 114,100 barrels produced at an average rate of 1,241 bopd. AWE's share was 65,600 barrels. Apart from natural decline, the major factor contributing to reduced production was an 8 day facility shut down in late October for a Critical Function Test. The Operator is also undertaking a cost reduction program for the facility.

Onshore Perth Basin (33–100%, some Operated)

Gross production for the September quarter decreased 9% from the previous quarter. AWE's share of production from the various onshore Perth Basin assets was 600 TJ of gas and 500 barrels of oil/condensate.

NEW ZEALAND**Tui Area Oil Fields (57.5%, Operator)**

Gross production from the Tui Oil Fields was down 12% from the previous quarter with 362,572 barrels (net of fuel oil consumed) produced at an average daily rate of 3,941 bopd. AWE's share of production was 208,479 barrels.

One crude oil sale lifting was achieved during the quarter. Tui oil sales totalled 398,744 barrels, of which 229,278 barrels was AWE's share. Inventory at the end of the September quarter was 127,452 barrels, net 73,285 barrels to AWE.

INDONESIA**Ande Ande Lumut Oil Project (50%)**

Tendering for the WHP and FPSO vessel is planned to continue over the first half of 2016. The Operator is planning to drill an appraisal well on the underlying G-Sand reservoir, estimated to contain an additional 36 mmbbl of oil (gross 2C Resources).

C13. Beach Energy First Quarter Report FY2021

Beach Energy Limited (ABN 20 007 617 969) | Level 8, 80 Flinders Street Adelaide, South Australia 5000
GPO Box 175, Adelaide, South Australia 5001 | beachenergy.com.au



ASX Announcement

FY21 First Quarter Activities Report

Reference #036/20

Date 23 October 2020

Quarterly production broadly steady at 6.8 MMboe as revenues increase by 13%

- Q1 FY21 production of 6.8 MMboe was 1% below the prior quarter, with higher output from Victorian Otway Basin and Cooper Basin JV offset by lower Western Flank and BassGas volumes.
- Q1 sales revenue of \$361 million was 13% up on the prior quarter as realised oil price increased by 38%.
- Beach ended the first quarter with \$9 million net cash and access to \$459 million in liquidity.

Key drilling activity in December 2020 quarter with Enterprise and Ironbark exploration wells

- The Enterprise 1 exploration well spudded on 1 October and is expected to complete drilling in the December 2020 quarter.
- The Ironbark 1 exploration well is expected to spud late October, with drilling results expected in the March 2021 quarter.
- An agreement was executed with Diamond Offshore for the use of the Ocean Onyx rig for the Victorian Otway offshore drilling program.

Waitsia stage 1 expansion complete, continued progress towards Waitsia stage 2 FID in Q2 FY21

- Non-binding gas processing term sheet signed with the North West Shelf joint venture for the processing of Waitsia gas and production of ~1.5 million tonnes per annum of LNG from late calendar 2023.
- FID of Waitsia stage 2 expansion remains on track for the December 2020 quarter.
- Expansion of the Xyris Facility was completed in September, with the facility now capable of producing at 20TJ/d.

Snapshot

	September Q1 FY20	June Q4 FY20	September Q1 FY21	Qtr on Qtr Change
Production (MMboe)	6.55	6.84	6.77	(1%)
Sales Volumes (MMboe)	6.76	7.13	6.98	(2%)
Sales Revenue (\$ million)	438	320	361	13%
Realised Oil Price (\$/bbl)	103.2	46.9	64.6	38%
Realised Sales Gas/Ethane Price (\$/GJ)	7.1	7.5	7.1	(5%)

For further information contact the following on +61 8 8338 2833

Investor relations

Nik Burns, Investor Relations Manager

Media

Rob Malinauskas, Head of Corporate Affairs and Community Relations

C14. Beach Energy Fourth Quarter Report 2019

Beach Energy Limited (ABN 20 007 617 969) | Level 8, 80 Flinders Street Adelaide, South Australia 5000
GPO Box 175, Adelaide, South Australia 5001 | beachenergy.com.au



ASX Announcement

FY19 Fourth Quarter Activities Report

Reference #020/19

Date 24 July 2019

Western Flank and expanded asset portfolio deliver record full year production of 29.4 MMboe

- Q4 FY19 production of 7.0 MMboe was highlighted by a further 5% increase in Western Flank oil output.
- Western Flank gas production was up 32% on the quarter after commissioning of the Middleton liquids handling expansion.

FY19 sales revenue of \$1.9 billion, Otway sale proceeds sees Beach debt free at 30 June 2019

- Q4 FY19 sales revenue of \$501 million was up 7% on the prior quarter and brings FY19 sales revenue to \$1.9 billion on full year sales volumes of 31.2 MMboe.
- Q4 FY19 free cash flow of \$130 million combined with \$262 million Otway Sale proceeds brings Beach to a net cash position of \$172 million at 30 June 2019 - two years earlier than initially expected.

Another successful year with the drill bit; Haselgrove-4 to be production tested

- Beach participated in 134 wells in FY19, a 40% increase over FY18. Overall success rate was 84%.
- Longest lateral segment drilled to date by Beach at Kalladeina-4 (1,438 metres with 84% net reservoir).
- Subsequent to quarter end, appraisal well Haselgrove-4 in the Otway Basin is being completed for production testing in Q1 FY20.

Perth Basin commercial agreements executed

- Subsequent to quarter end, Mitsui E&P Australia (MEPAU) agreed to purchase 17% of Beharra Springs and associated infrastructure. Beach and MEPAU now at 50:50 across all shared Perth Basin assets.
- FID reached on Waitsia Gas Project Stage 1 expansion to 20 TJ/day including connection to Dampier Bunbury Natural Gas Pipeline with capacity sufficient for Waitsia Gas Project Stage 2 potential volumes.

Snapshot

	June Q4 FY18	March Q3 FY19	June Q4 FY19	Qtr on Qtr Change	FY19
Production (MMboe)	7.23	7.23	6.97	(4%)	29.39
Sales Volumes (MMboe)	7.60	7.52	7.69	2%	31.18
Sales Revenue (\$ million)	471	470	501	7%	1,925
Realised Oil Price (\$/bbl)	103.2	104.2	102.0	(2%)	101.8
Realised Sales Gas/Ethane Price (\$/GJ)	6.6	7.0	7.0	(1%)	6.8

In FY19 Beach accounted for its Victorian Otway interests at 100% until 31 May 2019 and 60% thereafter. FY18 results consolidate Lattice, Benaris and Toyota Tsusho assets from 1 January 2018, although the full six months' contribution from the Toyota Tsusho assets was recorded in the June Q4 FY18 period.

For further information contact the following on +61 8 8338 2833

Investor relations	Nik Burns, Investor Relations Manager
Media	Rob Malinauskas, Head of Corporate Affairs and Community Relations

Beach Energy Limited | Quarterly report for the period ended 30 June 2019

Corporate and Commercial

Otway Sale completion

Beach completed the 40% sell-down of its Victorian Otway Assets to O.G. Energy on 31 May 2019. A completion payment of \$262 million¹ was received comprising the purchase price of \$344 million less adjustments of \$82 million¹. These adjustments reflect O.G. Energy's share of net cash flow from these assets between the effective date of the transaction (1 July 2018) and the completion date. Beach reports FY19 production from the Victorian Otway assets at 100% for the 11 months to 31 May 2019 and 60% for June 2019.

Gas Sales Agreement with Alinta Energy

Beach together with MEPAU signed a gas sales agreement with Alinta Energy for the supply of up to 20 TJ/day of gas from the Waitsia Field in the Perth Basin. The contract will commence 1 July 2020 with a duration of 4.5 years.

The Waitsia joint venture (Beach 50% and MEPAU 50%) has approved the expansion of the Xyris gas processing facility from the existing 10 TJ/day capacity (defined as Waitsia Gas Project Stage 1) to 20 TJ/day output (defined as Waitsia Gas Project Stage 1 expansion).

Stage 1 expansion activities will incorporate a large diameter pipeline connecting the Xyris facility to the Dampier to Bunbury Natural Gas Pipeline (DBNGP) with capacity for Waitsia Gas Project Stage 2 production volumes. Waitsia Gas Project Stage 2 development options include the construction of a new 100 to 250 TJ/day gas processing facility. FEED for Waitsia Gas Project Stage 2 is complete and EPC tenders are in progress.

Addition of BPT to S&P/ASX 100 Index

Effective at the open of trading on 24 June 2019, S&P Dow Jones Indices added Beach Energy to the S&P/ASX100 Index.

¹ Completion payment and adjustments were calculated utilising forecast May 2019 cash flows. Adjustments for actual May 2019 cash flows were made in June 2019.

C15. AWE Annual Report 2015



"BY FAR THE BIGGEST HIGHLIGHT OF THE YEAR WAS THE EXPLORATION AND APPRAISAL SUCCESS IN THE PERTH BASIN."

Our production base generates good revenue and cash flow, even at today's reduced crude oil prices, and we have an excellent portfolio of high quality, project-ready assets such as AAL and Lengo in Indonesia and Waitsia in Western Australia.

But we won't over-commit the company's balance sheet.

In August 2015 we announced a number of initiatives, including:

- + divesting non-core assets
- + prioritising new projects and exercising discretion on development costs where required
- + reducing exploration and development spend by between 37% and 47%
- + reducing other discretionary expenditure, overheads and operating costs by more than 20%
- + ensuring an efficient, lean and focused operating structure
- + hedging production where appropriate.

By the end of September 2015 we had made good progress on many of these initiatives. We commenced sale processes for a number of non-core assets and we are also pursuing farm outs for exploration and development assets with high equity interests.

We have reprioritised our development portfolio to fast-track the Waitsia gas project in the Perth Basin. With easy access to existing pipeline infrastructure and proximity to markets, Waitsia will be the low cost producer in the west coast gas market.

One of the benefits of current market conditions is the ability to negotiate reduced construction and drilling contract rates across our portfolio. All production and development projects, whether operated or non-operated, are being reviewed with the aim of reducing costs.

Our total development and exploration spend is forecast to reduce by between 37% and 47% in 2015-16 with exploration capped at \$25 million. Looking further ahead to 2016-17, our development commitments will be reduced further and our exploration commitments are minimal.

Consistent with this approach, we are focused on further reducing operating costs and overheads and ensuring our structure remains aligned with the reprioritised project pipeline.

This year we will close our Indonesian office, reduce staffing levels across our Sydney and New Plymouth offices by approximately 30%, and focus the business on our higher value core assets such as the Waitsia project.

We will also consider hedging production to underpin certainty of cash flow.

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C16. AWE Quarterly Report end September 2015

Issued by AWE Limited on 29 October 2015

Quarterly Report

For the 3 months to 30 September 2015



HIGHLIGHTS

PRODUCTION AND DEVELOPMENT

- Total quarterly production of 1.38 mmboe, down 3% on the previous quarter
- BassGas production up 23% over previous quarter, after Yolla-5 and Yolla-6 development wells brought onto production
- Sugarloaf 2P Reserves upgraded to 47.8 mmboe at 30 June 2015 following independent review and further drilling of the Austin Chalk (Sugarloaf 2P plus 2C now 65 mmboe net to AWE)
- Net 2P Reserves of 114.4 mmboe, more than 22 years of production at current rates, and 2C Resources of 121.9 mmboe, with the ability to convert the majority of these assets to 2P within the short to medium term

EXPLORATION AND APPRAISAL

- Combined gross 2P Reserves and 2C Resources for Waitsia, Senecio, Synaphea and Irwin increased to 721 Bcf of gas (67 mmboe net to AWE)
- Excellent conventional flow test results from Waitsia-1 recorded in October 2015 with a combined flow rate exceeding 50 mmscf/d, comprising 24.7 mmscf/d from the High Cliff Sandstone formation and 25.7 mmscf/d from the Kingia formation

FINANCIAL AND CORPORATE

- Sales revenue of \$59.4 million, down 27% on the previous quarter
- Average realised oil and condensate price for the quarter was A\$60.13/bbl
- Oil price hedging program implemented to underpin cash flow in FY16
- Net debt of \$156 million, comprising cash of \$54 million and drawn debt of \$210 million, at 30 September 2015 with \$190 million of corporate debt facility undrawn
- No Lost Time Injuries or reportable environmental incidents during the quarter
- Agreement to sell 57.5% working interest in the Cliff Head oil field announced in October 2015
- MD and CEO, Bruce Clement, to step down in CY 2016 in line with succession planning strategy

	QUARTERLY PRODUCTION BY PRODUCT '000 BOE	QUARTERLY SALES REVENUE BY PRODUCT '\$'000
OIL	320	18,647
CONDENSATE	234	17,349
LPG	133	3,479
GAS	698	19,959
TOTAL	1,384	59,434

Numbers may not add due to rounding

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900 barrels of condensate. An annual two week shut-down for plant maintenance is underway and scheduled for completion at the end of October 2015.

WESTERN AUSTRALIA

Waitsia Gas Project (50%, Operator)

Following the drilling of the Waitsia-2 well, AWE increased the gross 2P Reserves plus 2C Contingent Resources for the Waitsia gas field by 67%, from 290 Bcf to 484 Bcf of gas, from the conventional Kingia and High Cliff Sandstone formations.

Estimates for the Irwin, Synaphea and Senecio fields, predominantly tight gas plays in the Dongara and Wagina sandstone formations, were also revised. AWE increased gross 2C Resources for these fields to 237 Bcf of gas, bringing the total combined gross 2P Reserves and 2C Resources for Waitsia, Senecio, Synaphea and Irwin to 721 Bcf.

In early October, AWE commenced the flow testing program for the Waitsia-1 well to further appraise the Waitsia gas field discovery. The High Cliff Sandstone was the first of two planned zones to be flow tested. A 23.5 metre interval (3,382 – 3,405.5 metres) was perforated and the well flowed gas at an average rate of 24.7 mmscf/d, constrained by tubing size, on a 60/64 inch choke at approximately 1,330 psig flowing well head pressure over a 1 hour period.

In late October, the second zone in the Waitsia-1 well, the shallower Kingia Formation, was flow tested. A 15 metre interval (3,333 – 3,348 metres) was perforated and an average gas flow rate of 25.7 mmscf/d was achieved, constrained by tubing size, on a 56/64 inch choke at approximately 1,530 psig flowing well head pressure over a period of approximately one hour.

The total combined flow rate of more than 50 mmscf/d achieved at Waitsia-1 will enable AWE to reduce the number of wells, and development costs, needed to achieve the targeted production rate of 100 mmscf/d for the full field development, with the potential to increase the field production rate.

Engineering and planning work for the first stage of development is well advanced, with early stage production of approximately 10 mmscf/d planned for mid-2016, subject to receiving regulatory approvals.

Cliff Head Oil Field (57.5%)

Gross quarterly production for Cliff Head decreased 10%, quarter on quarter with approximately 141,000 barrels at an average rate of 1,530 bopd. AWE's share was 81,000 barrels.

Onshore Perth Basin (33–100%, some Operated)

Gross production for the September quarter increased 53% from the previous quarter. AWE's share of production from the various onshore Perth Basin assets was 653 TJ of gas and 700 barrels of oil/condensate.

NEW ZEALAND

Tui Area Oil Fields (57.5%, Operator)

Gross production from the Tui Oil Fields decreased 40% from the previous quarter with approximately 414,000 barrels (net of fuel oil consumed) produced at an average daily rate of 4,500 bopd.

AWE's share of production was 238,000 barrels. Lower production was consistent with the expected decline in production from the Pateke-4H well as the well came off initial flush production during the previous quarter.

Tui oil sales during the quarter totalled 377,053 barrels, of which 216,805 was AWE's share. Inventory at the end of the September quarter was 163,624 barrels, net 94,038 barrels to AWE.

INDONESIA

Ande Ande Lumut Oil Project (50%)

FEED work for this 101 mmbbl oil project has been completed and tendering for the WHP and FPSO vessel is planned to continue over the remainder of calendar year 2015 and into the first half of 2016. As previously reported, FID for the project is scheduled for the second half of the 2016 calendar year. The joint venture is

C17. Beach Energy Annual Report 2019



BEACH ENERGY LIMITED	OPERATING REVIEW
<p>PERTH BASIN</p> <p>FY19 PRODUCTION</p> <p>0.7 MMboe (2% of Beach's total production)</p> <p>2P RESERVES¹</p> <p>73 MMboe</p> <p>FY19 Highlights</p> <p>GSA executed with Alinta Energy for delivery of 20 TJ/d from July 2020.</p> <p>FID reached on Waitsia Stage 1 expansion to 20 TJ/day.</p> <p>Beach and MEPAU agreed to align interests 50:50 across the Perth Basin.</p> <p>Easternwell 106 rig contracted to drill Beharra Spring Deep-1 exploration well in FY20.</p> <p>FEED completed and EPC tenders in progress on Waitsia Gas Project Stage 2.</p>	<p>Operations</p> <p>Perth Basin operations accounted for 2% of Beach's FY19 production. Perth Basin production of 0.7 MMboe was 59% higher than the prior year due to the Perth Basin assets being consolidated for the entire FY19 reporting period.</p> <p>Development</p> <p>The Waitsia joint venture continued to progress commercialisation plans for Waitsia Gas.</p> <p>Beach and MEPAU signed a GSA with Alinta Energy for the supply of up to 20 TJ/day of gas from the Waitsia Field, commencing 1 July 2020 with a duration of 4.5 years. Detailed engineering has commenced on the Stage 1 expansion of the Xyris gas processing facility from 10 to 20 TJ/day output. Stage 1 expansion incorporates a large diameter pipeline (with capacity for future Stage 2 production volumes) connecting the Xyris facility to the DBNRP.</p> <p>Waitsia Gas Project Stage 2 development progressed with the completion of FEED and issue of EPC tenders for the construction of a 100 - 250 TJ/day facility. FID is currently anticipated in FY20.</p> <p>Exploration and Appraisal</p> <p>The Easternwell 106 rig has been contracted to drill the Beharra Springs Deep-1 gas exploration well, currently expected in H1 FY20.</p> <p>Commercial</p> <p>Subsequent to year end, Beach and MEPAU entered into an agreement that will result in the two entities moving to a 50% interest in production licences L11 and L22, exploration permit EP 320 and pipeline licence PL18.</p> <p>These tenements contain the Beharra Springs and Redback gas fields and associated gas processing facilities, the Beharra Springs Deep exploration prospect and the underexplored EP320 where Beach will undertake the Trieste 3D seismic survey to mature several prospects already identified on lower quality 2D seismic.</p> <p>Beach will remain operator of these tenements.</p> <p>Description</p> <p>Producing licence areas are Waitsia (Beach 50%, MEPAU 50% and operator) in licence L1/L2 and Beharra Springs (Beach 67% and operator, MEPAU 33%) (pending completion of a 17% sell down described under "Commercial"), in licences L11 and L22.</p> <p>In FY19 gas from the Waitsia gas field was processed at the Xyris gas processing facility. Gas from Beharra Springs was processed at the Beharra Springs gas processing facility.</p>
<p>FY20 Focus</p> <p>Drill Beharra Springs Deep-1 exploration well</p> <p>Commence construction of Waitsia Stage 1 expansion</p> <p>FID on Waitsia Gas Project Stage 2.</p> <p>Trieste 3D seismic survey</p> <p>Maintain high facility reliability</p>	<p>1. Refer to Reserves Statement for the year ended 30 June 2019 on pages 30 - 35 of this report for additional disclosures.</p>

C18. Beach Energy Second Quarter Report FY2020

Beach Energy Limited (ABN 20 007 617 969) | Level 8, 80 Flinders Street Adelaide, South Australia 5000
GPO Box 175, Adelaide, South Australia 5001 | beachenergy.com.au



ASX Announcement

FY20 Second Quarter Activities Report

Reference #002/20

Date 29 January 2020

Western Flank oil production growth continues, operated oil production reaches 22,700 bopd

- Western Flank oil production increased by 13% to 1.8 MMbbl. Operated Western Flank oil production reached 22,700 bopd (gross) by the end of December.
- Q2 FY20 production of 6.4 MMboe is 2% below prior quarter, with higher oil output partly offsetting the impact of the Kupe statutory shutdown and lower customer nominations due to seasonal gas demand.
- Kupe full plant statutory shutdown was completed on time and on budget in November 2019. Over 80,000 hours of work was executed with no recordable health, safety or environmental incidents.
- Operated facility reliability remained strong, averaging > 98% in H1 FY20 across our operated assets.

Drilling success rate remains at 83%, Beach commits to additional SA Otway, Perth Basin drilling

- Overall drilling success remained at 83% of the 53 wells completed in Q2 FY20.
- Rig option exercised on the Easternwell 106 rig to drill additional SA Otway and Perth Basin wells following gas discoveries at Dombey-1 (SA Otway) and Beharra Springs Deep-1 (Perth Basin).

Victorian Otway and New Zealand drilling campaigns underway

- Subsequent to quarter end, Black Watch-1 development well and Tawhaki-1 exploration well spudded.
- Ocean Onyx rig scheduled to arrive in March 2020 to commence offshore Victorian drilling program.

Production momentum building in key assets

- Second half drivers: 1) higher sustained operated Western Flank oil output; 2) increased BassGas, Kupe deliverability; 3) Otway Gas Plant shutdown shortened to 4 days; 4) higher contracted output at BassGas; 5) first gas at Katnook gas plant expected in Q3 FY20, and; 6) expected Black Watch start-up in Q4 FY20.

Snapshot

	December Q2 FY19	September Q1 FY20	December Q2 FY20	Qtr on Qtr Change	YTD
Production (MMboe) ¹	7.42	6.55	6.41	(2%)	12.96
Pro forma production (MMboe) ¹	6.53	6.55	6.41	(2%)	12.96
Sales Volumes (MMboe)	7.70	6.76	6.65	(2%)	13.41
Sales Revenue (\$ million)	441	438	462	6%	900
Realised Oil Price (\$/bbl)	91.2	103.2	105.9	3%	104.6
Realised Sales Gas/Ethane Price (\$/GJ)	6.6	7.1	7.0	(0%)	7.0

1 In FY19 Beach accounted for its Victorian Otway interests at 100% interest until 31 May 2019 and 60% thereafter. For comparison purposes with prior periods, pro forma production shows production based on 60% ownership of Victorian Otway for the entire comparison period.

For further information contact the following on +61 8 8338 2833

Investor relations

Nik Burns, Investor Relations Manager

Media

Rob Malinauskas, Head of Corporate Affairs and Community Relations

Beach Energy Limited | Quarterly report for the period ended 31 December 2019

Group production

Q2 FY20 production of 6.4 MMboe was down 2% compared to the prior quarter. Production growth in the Western Flank (+12%) and Cooper Basin JV (+4%) was offset by lower output at Kupe (-40%, statutory shutdown in November) and Victorian Otway Basin (-17%, lower customer nominations due to seasonal gas demand and natural field decline).

SAWA

Cooper Basin

- Western Flank production was 2.4 MMboe, 12% higher than the prior quarter and sixth consecutive increase, driven by strong production performance across all products.
- Gross average daily oil production from the Western Flank (operated and non-operated) was 22 kbbl, up from 19.6 kbbl in the prior quarter.
 - Beach-operated oil production increased 14% to 1,694 kboe, with Ex-PEL 91 reporting production of 1,556 kboe up from 1,337 kboe in Q1 and Ex-PEL 92 reporting 139 kboe down from 146 kboe in Q1.
 - A total of 17 new oil wells were brought online – eight horizontal producers and nine vertical producers
 - With several key artificial lift conversions completed over the quarter as well as new wells brought online and other field activities, Beach ended the quarter with gross oil production of 22.7 kbopd achieved in the final week of December from its operated oil assets.
 - At the end of the second quarter two key oil wells are awaiting connection.
 - Senex-operated oil production was up 3% to 113 kbbl in Ex PEL 104/111.
- Beach's Western Flank gas and gas liquids production was 545 kboe, 6% higher than the prior quarter as two high-liquids content Lowry wells were connected and facility reliability was maintained at greater than 99%. Field work continues in Western Flank gas to support higher liquids production rates from Beach's portfolio of high-liquids content wells.
 - At the end of the second quarter three Western Flank gas wells are awaiting connection.
- Cooper Basin JV production was up 4% on the prior quarter with strong gas and gas liquids production offsetting a decline in oil production. A total of 31 new wells were brought online during the quarter.

Perth Basin

- Perth Basin production was approximately 87% from Beharra Springs and 13% from Waitsia.
- Total production was 109 kboe, 22% lower than the prior quarter as a planned ten-day facility shutdown was successfully completed at Beharra Springs and the 17% farm out to MEPAU completed on 29 November 2019, after which Beach reports production from Beharra Springs at a 50% interest.
- Production was also impacted by lower customer demand late in the quarter.
- The Xyris gas facility was shut in on 1 January to facilitate the Waitsia Stage 1 expansion activities (refer ASX release #018/19) and is expected remain offline for the remainder of FY20.

C19. Enscope Waitsia Gas Project Overview



The image shows a complex industrial facility, likely a gas processing plant. It features a network of thick green pipes, various valves, and mechanical components. A prominent orange motor or pump unit is visible on the right side. The facility is situated outdoors on a concrete pad, with other pipes and structures in the background under a clear sky.

WAITSIA GAS PROJECT

PROJECT OVERVIEW

The project connected two new gas wells to the existing Xyris production facility via two new flowlines and a new trunkline.

The Xyris low temperature separation processing facility (previously in care and maintenance) was modified and upgraded with a new gas to gas heat exchanger, new power generation plant and control systems and all remaining equipment was brought back up to operational status. This enabled on-spec gas to be exported to the Parmelia Gas Pipeline.

The Project was completed safely, under the client's budget and against extremely tight schedule demands. Net sales gas capacity - 10Tj/d.

PROJECT FACTS

SCOPE

- » 2 x Well pads
- » 2 x Flowlines (AS 2885 pipelines)
- » 6.5km DN150 Trunkline (AS 2885 pipeline)
- » Pipeline facilities
- » LTS gas processing facilities

CLIENT

AWE Limited

LOCATION

14.5 kilometres east of Dongara and 367km north of Perth, Western Australia

DATES

May 2015 to Aug 2016

ROLES & SERVICES

- » **Concept and FEED:** Engaged by AWE to develop the concept engineering package and complete the front-end engineering and design. Subsequently engaged to deliver project execution planning, contract and procurement packages, cost estimate and schedule sufficient to support project FID
- » **EPCM:** Engaged by AWE as the EPCM contractor for delivery of the project
- » **Commissioning:** Engaged by AWE to perform commissioning and assist with handover to operations

KEY CHALLENGES

Reinstatement and commissioning of mothballed plant and equipment

MAJOR ACHIEVEMENTS

Completion of the project achieving AWE's "5 Green Lights" for safety, environmental compliance, budget, schedule and performance



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C20. AWE Quarterly Report For the 3 months to 31 March 2016

Issued by AWE Limited on 29 April 2016

Quarterly Report

For the 3 months to 31 March 2016



HIGHLIGHTS

PRODUCTION AND DEVELOPMENT

- YTD production of 4.2 mmboe, up 13% over the previous corresponding nine months, with Tui up 40%, BassGas up 36%, and Sugarloaf up 33%.
- Total production of 1.3 mmboe for the March quarter, down 13% over the previous quarter, due to planned maintenance at Casino, BassGas and Tui and the sale of Sugarloaf.
- Construction of Stage 1A of the Waitsia Gas Project has commenced following the award of construction contracts in March.

EXPLORATION AND APPRAISAL

- The Operator of the AAL oil project is preparing to drill an appraisal well on the deeper G Sands (289 mmbbl gross oil in place, 36 mmbbl gross recoverable oil) in the June quarter to better assess this resource.
- The G Sands could potentially be developed in conjunction with the K Sands (101 mmbbl gross recoverable oil) which would significantly increase the value of the AAL oil project.

FINANCIAL AND CORPORATE

- At 31 March 2016 AWE had net cash of \$52 million, no debt, and undrawn facilities of \$400 million.
- The sale of Sugarloaf for US\$206 million, including adjustments, was completed in March.
- Revenue for the March quarter was \$41 million, down 35% over the previous quarter due to lower production and no oil sales lifting occurring at Tui. Oil inventory at Tui increased to 246,000 bbls net to AWE.
- Operating and administration costs have been reduced by approximately 20% year to date. Field Opex was \$21 million and Field EBITDAX was \$20 million for the quarter.
- The average realised oil and condensate price for the March quarter, inclusive of hedging, was A\$54.27 per barrel.
- No Lost Time Injuries (LTIs) or reportable environmental incidents during the quarter.
- AWE's new CEO and Managing Director, Mr David Biggs, will commence in early May 2016.

	QUARTERLY PRODUCTION BY PRODUCT '000 BOE	QUARTERLY REVENUE BY PRODUCT '\$'000
OIL	243	6,337
CONDENSATE	252	15,598
LPG	150	3,831
GAS	646	15,099
TOTAL	1,291	40,865

Note: Numbers may not add due to rounding. Revenue includes effective hedging where applicable.

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MANAGING DIRECTOR'S COMMENTS

AWE delivered a good third quarter operating performance and continued to implement its strategy to strengthen the company's financial position and focus on delivering the Waitsia gas project in the Perth Basin.

Our production assets generally performed well, although planned maintenance at Tui, BassGas and Casino affected production volumes. We are achieving excellent outcomes from our divestment program, and we have realised substantial cost savings across our business.

Revenue was down during the period due to lower production and no oil sales lifting occurring at Tui. However at the end of the quarter, Tui oil inventory was high at 428,000 barrels (246,000 barrels net to AWE) and a lifting commenced in late April. AWE's oil revenues from Australia and New Zealand are hedged until the end of the financial year.

The sale of our 10% interest in the Sugarloaf AMI, Texas USA, for total consideration of US\$206 million including adjustments was an outstanding result that exceeded market expectations. Proceeds from the sale were used to repay debt, resulting in a net cash position of \$52 million at the end of March. It also reduced the company's future capex commitments significantly.

Construction contracts for Stage 1A of the Waitsia project were awarded in March and work commenced in April. Stage 1A will produce 10 TJ/day from the Senecio-3 and Waitsia-1 wells, via the existing Xyris Production Facility, and first gas is scheduled for August 2016. AWE is currently evaluating plans for future development options targeting production of up to 100 TJ/day and gas marketing is well under way.

On the east coast, the third and final phase of the BassGas Mid Life Enhancement (MLE) made good progress. This phase involves the hook-up and commissioning of the compression and condensate pumping modules with start-up targeted for the first half of the 2017 calendar year. This should bring production back up to system capacity in the mid 60 TJ/day range.

We anticipate recontracting gas production from Casino and BassGas over the next 12 to 24 months at prices significantly higher than the current contracts.

In Indonesia, the Operator is preparing to drill an appraisal well at Ande Ande Lumut (AAL) on the deeper G Sands reservoir in the June quarter, which has the potential to increase the project's total recoverable oil from 101 mmbbls to between 130 and 140 mmbbls with further potential upside. This would significantly increase the value of the AAL project.

We have also continued to reduce operating and administrative costs across the business, achieving year to date cost reductions of \$18 million or approximately 20% compared to the previous corresponding nine month period.

AWE remains on track to achieve guidance¹. We have strengthened the company's balance sheet and reduced costs and capex commitments. We will continue to pursue opportunities to divest non-core assets and recycle capital to ensure our business remains focused and efficient.

With significant reserves and resources, we are well positioned to deliver long term revenue growth from our base gas production business and we have reshaped our development portfolio to focus on the Waitsia gas project in the near term and the AAL oil project when oil prices recover.

Bruce Clement
Managing Director and CEO

Note 1. Revised guidance reflecting the sale of Sugarloaf, issued on 24 February 2016.

Waitsia Gas Project (50%, Operator), Onshore Perth Basin

During the quarter, construction contracts were awarded and work has commenced on Stage 1A of the Waitsia Gas Project. Works will include two four-inch flowlines from the Waitsia-1 and Senecio-3 well heads to a northern gathering manifold, a six-inch pipeline to transport the gas to the Xyris Production Facility (XPF), and minor upgrades to the XPF. Treated gas from XPF will be delivered to the Parmelia pipeline for domestic consumption. Engineering, execution and management costs for Stage 1A of the Waitsia gas project are estimated at \$18 million (\$9 million net to AWE).

The initial capacity of XPF will be approximately 10 TJ per day, with further expansion possible, and first gas is scheduled for August 2016. A take or pay gas sales agreement, based on 90% of annual gas quantity, has been executed with Alinta Energy for 10 TJ/day over a 2.5 year period.

NEW ZEALAND**Tui Area Oil Fields (57.5%, Operator), Taranaki Basin**

Gross production from the Tui Oil Fields was down 17% from the previous quarter with 300,346 barrels (net of fuel oil consumed) produced at an average daily rate of 3,301 bopd (gross net of fuel). AWE's share of production was 172,699 barrels. A four day planned maintenance shutdown was completed on time and on budget in mid-March, partially contributing to lower production for the quarter. No crude oil sale liftings were achieved during the quarter. Inventory at the end of the March quarter was 427,801 barrels, net 245,986 barrels to AWE.

A number of cost reduction initiatives have been successfully implemented including sharing of workboats and helicopters with other Operators and reducing FPSO costs. A production optimisation project is also under way.

INDONESIA**Ande Ande Lumut Oil Project (50%), Northwest Natuna Sea**

The Operator is planning to drill an appraisal well on the underlying G Sands reservoir, estimated to contain 289 mmbbl gross oil in place with 36 mmbbls gross recoverable oil (net 10 mmbbls 2C Resources to AWE), in the June quarter as a precursor to preparation of a Plan of Development (POD) for this reservoir. This could facilitate development of the G Sands in conjunction with the already approved K Sands development (101 mmbbl gross recoverable oil, net 24.3 mmbbl 2P Reserves to AWE).

The Operator has advised that the timing for the WHP and FPSO procurement process was likely to slip due to extensions requested by bidding contractors in order to conform with recent regulatory changes. The joint venture is currently assessing the potential impact on the project schedule, including FID.

Lengo Gas Project (42.5%), East Java Sea

The Operator, KrisEnergy, is continuing negotiations for a gas sales agreement which is required prior to the Joint Venture reaching FID for the project. The sale process for this asset is continuing.

USA**Sugarloaf AMI (~10%, net ~7.5% after royalties), Texas**

AWE's share of production from Sugarloaf declined by 16% in the March quarter following the completion of the sale of this asset on 17 March. AWE's net share after royalties comprised 199,000 barrels of oil/condensate, 8,194 tonnes of LPG and 714 TJ of gas.

EXPLORATION & APPRAISAL**AUSTRALIA****Bass Basin**

In T/RL2 (AWE 40%), development concept studies for the Trefoil Field are continuing.

Otway Basin

In permit VIC/P44 (AWE 25%), the Operator is reviewing regional exploration prospectivity and is preparing an updated prospect and lead inventory.

C21. Waitsia Project Stage 2 Environmental Referring Supporting Report

Waitsia Gas Project Stage 2 – Environmental Referral Supporting Report

MEPAU uses lessons learned from previous activities to continually improve its interaction with other land users. For example, the efforts taken to ensure that Waitsia Stage 1 did not compromise Irwin Park Farm productivity have been used for planning the Proposal.

The key uses that show this transition are shown on Figure 1-1. Specific land uses nearby are described below:

- Mondarra Gas Storage Facility – operated by APA.
- Patience Bulk Haulage Sand Quarry – local extractive industry providing construction materials to the region.
- XPF – gas production facility with current capacity of approximately 10 TJ per day, operated by MEPAU.
- HPF – presently receiving wastewater from Waitsia Stage 1, operated by MEPAU.
- DPF – an aged production facility currently in care and maintenance, operated by MEPAU.
- Asco Group Facilities – a permanent, 50-person camp and separate 6ha laydown facility.
- Jingemia Production Facility –operated by RCMA
- Various well pad sites – specifically Waitsia-02, -03 and -04, operated by MEPAU.

In addition, the WGP should ideally be sited close to the DBNGP to provide efficient conveyance of the processed gas into the supply pipeline and then on to customers. This continues the mixture of land uses coexisting in the region for nearly 50 years.

The Shire of Irwin Local Planning Strategy provides the planning framework in the Shire of Irwin and the strategic basis for the local planning scheme. The Strategy expresses the strategic vision, policies and proposals of the local government that are relevant to the implementation of its scheme. It also provides a means to interpret State and regional policies at the local level allowing the implementation of broader objectives relating to urban form and development. The preparation of the Local Planning Strategy is required by the *Planning and Development (Local Planning Schemes) Regulations 2015*.

The Shire of Irwin Local Planning Strategy recognises that petroleum industries play an important economic role in the region and it is therefore necessary to adequately plan for and protect these industries where appropriate. MEPAU recognises and welcomes the level of interest shown in the Proposal by residents and service providers. MEPAU has a project objective to make local business opportunities a priority and benefit the region.

While the advent of the Proposal will continue this transition, the change in land use is well accepted by most of the nearby landowners. Each of the immediate nearby landowners are involved in commercial arrangements with MEPAU and /or other projects in the area, are familiar with the sector and have developed constructive working relationships.

4.8.3.6 Regional Background Demographics

The Project is based in the Mid West region of Western Australia near the coastal twin towns of Dongara and Port Denison. Dongara is the seat of the Shire of Irwin.

Industries in the area historically include western rock lobster fishing, broad acre farming as well as oil and gas and mineral sands developments. Dongara-Port Denison markets itself as the 'Rock lobster capital of Australia'. Land use east of Dongara-Port Denison is mainly broad scale agriculture and cropping with at least one intensive horticultural business. Since the first onshore gas field discovery, Dongara gas field, in 1964 and the first production gas pipeline, the Parmelia Gas Pipeline, in 1971 these industries have coexisted and supported the regional economy. More recently, Dongara-Port Denison has been promoting itself as a tourism destination.

C22. AWE's Financial Year 2016 Results – Personnel Reorganisation

ASX Announcement

25 August 2016



AWE's FY16 results: solid operating performance and stronger balance sheet

SUMMARY OF RESULTS FOR THE 12 MONTHS TO 30 JUNE 2016

- Total production of 5.0 mmboe in line with previous year
- Sales revenue of \$202.4 million, including realised oil hedge gains, down 29%
- Operating costs reduced by 21% to \$110.4 million and G&A expenses reduced by 41% to \$10.0 million
- Field EBITDAX of \$92.0 million, down 36%, reflecting the sale of Sugarloaf and lower realised oil and condensate prices
- Statutory net loss after tax of \$363.0 million includes \$242.5 million of non-cash impairments (after tax), with the majority advised to the market at the half year
- Underlying net loss after tax of \$67.4 million after adjusting for non-recurring items
- Development expenditure reduced by 50% to \$120.3 million and exploration expenditure reduced by 70% to \$18.8 million
- Cash of \$32.6 million and drawn debt of \$14.8 million at 30 June
- Sale of Sugarloaf asset for US\$190 million and Cliff Head for \$3.2 million completed during the period. Sale of Lengo for up to \$27.5 million announced
- Total 2P Reserves plus 2C Contingent Resources of 173.5 mmboe at 30 June

AWE Limited (ASX: AWE) today announced its full year results for the 2016 financial year. Full year production remained steady at 5.0 mmboe and sales revenue of \$202.4 million, including realised oil hedge gains of \$11.8 million, was underpinned by long-term gas contract revenues of \$69.4 million.

The company reported a statutory net loss after tax of \$363.0 million, which included \$242.5 million of non-cash impairments (after tax), with the majority advised to the market at the half year. After adjusting for non-recurring items, AWE's underlying net loss after tax was \$67.4 million.

Managing Director and CEO, Mr David Biggs, said that although FY16 was a year of considerable change for AWE, the company achieved critical milestones, extracted significant cost savings, strengthened its balance sheet and delivered a solid operating performance in tough market conditions.

"Over the past 12 months, we have reshaped AWE to be leaner, more efficient and focused so that we can deliver the highly valuable Waitsia gas project and pursue other growth opportunities, including the AAL oil project, in this low oil price environment," he said.

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"We have refreshed and refocused AWE's management team and although overall staff numbers have decreased by around 30%, we have increased resourcing in critical areas including the Perth-based operating team responsible for the Waitsia project. This includes gas marketing and stakeholder relations programs, which remain high priorities for AWE," Biggs said.

"Our operating performance was solid with improved production from BassGas offsetting the reduced contribution from Sugarloaf following the sale of that asset in March 2016. There were no Lost Time Injuries and no reportable environmental incidents.

"A key achievement in FY16 was strengthening the company's balance sheet. A successful asset sale program allowed AWE to repay debt and significantly reduce future capex commitments and abandonment liabilities. We ended the financial year in a net cash position of \$18 million and, subsequent to year end, we reduced our corporate debt facility limit by 25% to \$300 million, reflecting our intention to utilise low debt levels going forward," he said.

"The highlight of the year was undoubtedly the multiple successes at the Waitsia project in Western Australia's onshore Perth Basin. Flow test results from Waitsia-1 were exceptional and a combined flow rate of 50 mmscf/d was recorded from two zones in October 2015. We achieved FID for Stage 1A production in January 2016, and gross 2P Reserves were increased by 93% to 344 Bcf (AWE share 172 Bcf or 30.4 mmboe) in June 2016.

"Earlier this month, we commenced commissioning of the Xyris Production Facility and successfully introduced Waitsia gas into the Parmelia pipeline on schedule. The concept select process for the next development stage of the Waitsia gas field has commenced and two new appraisal/production wells are planned for calendar year 2017.

"Work on the final phase of the MLE project at BassGas continued and the Operator is forecasting completion before the end of FY17. While this is expected to deliver enhanced production in FY18, remaining BassGas reserves were reduced by 4.5 mmboe, after production, during the year based on the Operator's assessment of lower observed reservoir performance from the Yolla-5 and Yolla-6 wells," Biggs said.

"The AAL oil project continued to make good progress, with the G-sand appraisal well being the primary focus. Both the G-Sand and K-Sand reservoirs were successfully intersected and preliminary laboratory testing of recovered oil samples indicated lower levels of impurities than expected, which should have a positive economic impact on the project including potentially lower capex and higher crude prices. FID for the project was extended into the second half of calendar year 2017 to allow contractors bidding on the FPSO and WHP to submit revised bids that conform to Indonesian regulatory changes.

"Our exploration spend was reduced by 70% during the year. With many in the industry forecasting a return to higher oil prices, AWE has commenced preparations to farm out portions of its 100%-owned offshore exploration blocks in the Carnarvon and Perth Basins.

"The sales of Sugarloaf and Cliff Head were completed during the year and the sale of Lengo has been executed, subject to Indonesian government approval. While the sale of Sugarloaf, in particular, will result in reduced production and revenue in the year ahead, the substantial reduction in capex commitments has the company well positioned in the low oil price environment to progress the Waitsia and AAL projects and pursue new growth opportunities," Biggs concluded.

For a detailed review of AWE's operating and financial performance, investors should refer to AWE's Appendix 4E, Directors Report, Full Year Consolidated Financial Report and Investor Presentation released to the Australian Securities Exchange today.

Appendix D – Email Correspondence Resulting in the Disapproval for Reaching Out to Waitsia Stakeholders

Clough Group is the managing organisation for the Waitsia Gas Project Stage 2; Albuquerque is currently associated with them, hence, the need to seek clearance on reaching out to Waitsia Stakeholders (i.e., MEPAU). The following abstracts are **confidential** to this report.

D1. Initial Inquiry

From: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Sent: Thursday, March 14, 2024 10:44 pm
To: Kata Arbuckle <Kata.Arbuckle@clough.com.au>
Subject: University Group Project + Conflict of Interest?

Hi Kata,

At uni im currently doing a project management unit and underway a group assessment about investigating the management of a project of interest. As a group we decided on Waitsia Stage 1 (as it has to be a project which has been completed). I just wanted to check in before taking any action to reach out to stakeholders and contractors for Waitsia Stage 1 regarding the management of the project to ask whether this may cause any conflict of interest considering that Stage 1 was contracted to Enscope. I was also not certain as to who would be the best person to ask, so I would like to apologise in advance in the case you were not the suitable person to ask.

Kind regards,
Ayrton

From: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Sent: Friday, March 15, 2024 5:13:29 PM
To: Robert Blaze <Rob.Blaze@cloughgroup.com>
Subject: Fwd: University Group Project + Conflict of Interest?

Hi Rob,

I sent the email below to Kata without realising she was out of office til Tuesday. I was wondering whether you may be able to help on the current dilemma as detailed in the attached email?

Kind regards,
Ayrton

D2. Responses and Replies

From: Robert Blaze <Rob.Blaze@cloughgroup.com>
Sent: Friday, March 15, 2024 3:16 PM
To: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Cc: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>; Kata Arbuckle <Kata.Arbuckle@clough.com.au>
Subject: Fwd: University Group Project + Conflict of Interest?

Hi Jillian

Would you be able to assist Ayrton with his query?

Thanks

Rob

From: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Sent: Friday, March 15, 2024 3:38:53 PM
To: Robert Blaze <Rob.Blaze@cloughgroup.com>; Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Cc: Kata Arbuckle <Kata.Arbuckle@clough.com.au>
Subject: RE: University Group Project + Conflict of Interest?

Yes, I would be happy to assist Ayrton.

Hi Ayrton, are you in the office today? It would be best to talk through what you require so I can answer your query completely. Let me know when you can talk/meet.

Regards,

Jillian

From: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Sent: Friday, March 15, 2024 4:06 PM
To: Jillian Formentin <Jillian.Formentin@cloughgroup.com>; Robert Blaze <Rob.Blaze@cloughgroup.com>
Cc: Kata Arbuckle <Kata.Arbuckle@clough.com.au>
Subject: Re: University Group Project + Conflict of Interest?

Hi Jillian,

I'm not in the office today, but I can list in short what sort of information is required:

For context, the project management stages we've been asked to assess for a particular project are Conceptualization, Planning, Execution (incl. monitoring and controlling), and Finalization/Evaluation.

The information required (with relevance to project management) is focused on:

- Problems encountered in each of the four stages of project management
- Different perspectives of the problems encountered

Kind regards,

Ayrton

From: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Sent: Friday, March 15, 2024 4:53:00 PM
To: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Subject: RE: University Group Project + Conflict of Interest?

Thanks Ayrton,

What materials would you need to do your assessment?

Regards,

Jillian

From: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Sent: Friday, March 15, 2024 5:30 PM
To: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Subject: Re: University Group Project + Conflict of Interest?

The materials which would help would include the following:

- Progress claims
- Handover related information
- Project timeline
- Stage, task and milestone detail
- Project schedule
- Performance standards
- Change of scope request

Kind regards,
Ayrton

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Ayrton Albuquerque
Engineering Intern

[D +61892819027](#)
Ayrton.Albuquerque@cloughgroup.com

From: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Sent: Tuesday, March 19, 2024 1:53:01 PM
To: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Subject: Re: University Group Project + Conflict of Interest?

Hi Jillian,

Thank you for looking into that. I was just wanting to clarify that this would more so be related to information that would be required from Enscope. I wasn't sure if Clough had this information as it relates to Waitsia Stage 1. My concern was if there would be a potential conflict of interest if I did engage in communications with Enscope over such details.

Kind regards,
Ayrton

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From: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Sent: Tuesday, March 19, 2024 11:40 am
To: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Subject: Re: University Group Project + Conflict of Interest?

Hi Ayrton,

I'm seeing what I can do to facilitate your request. I doubt that Clough will be able to release the project file or documentation. Would it work for you to interview one of the project team?

Regards,
Jillian



From: Jillian Formentin
Sent: Monday, March 25, 2024 8:54 AM
To: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Subject: Re: University Group Project + Conflict of Interest?

Hi Ayrton,
I expect an interview will be ok. I will check with our Compliance Director and let you know today.
Regards,
Jillian

On 25 Mar 2024, at 8:47 am, Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com> wrote:

Morning Jillian,

I was just hoping to follow up on this matter. Mainly as to whether it would be an issue if I were to interview a project manager from either Enscope or MEPAU with regards to Waitsia Stage 1?

Kind regards,
Ayrton

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Ayrton Albuquerque
Engineering Intern

D3. Final Decision

From: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Sent: Tuesday, March 26, 2024 1:51:50 PM
To: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Subject: Re: University Group Project + Conflict of Interest?

Hi Jillian,

No worries at all. Thank you for getting back to me. I really appreciate your help on this.

Kind regards,
Ayrton

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From: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Sent: Tuesday, March 26, 2024 1:37:20 PM
To: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Subject: Re: University Group Project + Conflict of Interest?

Hi Ayrton,

Thanks for your patience as I've explored your query. Unfortunately, given where we are on a number of fronts engaged with Enscope and MEPAU and the continuation of works on Waitsia 2, Clough can't support your request.

Regards,
Jillian

From: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Sent: Tuesday, March 26, 2024 4:15 PM
To: Charlea Washington <Charlea.Washington@cloughgroup.com>
Subject: Fwd: University Group Project + Conflict of Interest?

Hi Charlea,

I was hoping to get some guidance or if I required any permission to interview project managers from Enscope and MEPAU and if that would result in any conflict of interest? Please see below for background on why and the intention.

Background: I'm currently studying a project management unit and I am underway a group assignment. We have chosen to do a report on Waitsia Stage 1 (contracted to Enscope by MEPAU - note Clough is currently contracted to do Waitsia Stage 2). For this report, my group may require information regarding the decision making at each stage of the project and issues that were faced from a project management perspective.

Intention: The idea would be that my group would be able to interview a project manager from Enscope and/or MEPAU about the decisions made at each stage of the project and the issues faced. There are no requirements from Clough, Enscope, or MEPAU to provide documentation in this scenario.

I was concerned of a potential conflict of interest, or other issues as mentioned before, but just needed to clarify to be safe.

Kind regards,
Ayrton

From: Charlea Washington <Charlea.Washington@cloughgroup.com>
Sent: Wednesday, March 27, 2024 2:30:35 PM
To: Ayrton Albuquerque <Ayrton.Albuquerque@cloughgroup.com>
Cc: Jillian Formentin <Jillian.Formentin@cloughgroup.com>
Subject: RE: University Group Project + Conflict of Interest?

Hi Ayrton,

Unfortunately, there is a conflict of interest with your request. The conflict is that Enscope's scope of work ties into Clough's scope of work, which is still in process. Additionally, MEPAU is Clough's client.

Cheers

Charlea Washington
Compliance Director

Appendix E – Team Formulated Gantt Chart

TASK	ASSIGNED TO	START	END	Wk. 1		Wk. 2		Wk. 3		Wk. 4		Wk. 5		Study Week		Wk. 6															
				Feb 26, 2024		Mar 4, 2024		Mar 11, 2024		Mar 18, 2024		Mar 25, 2024		Apr 1, 2024		Apr 8, 2024															
				26	27	28	29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Early Project Phase																															
Team Formation/Plan	All	27/02/24	27/02/2024																												
Research into project	All	27/02/24	03/03/2024																												
Unification on Project Direction	All	5/03/24	12/03/2024																												
One Page Summary	SF, AA	2/03/24	06/03/2024																												
Executive Summary (Max. 1 page)																															
Writing Executive Summary of the report	SF, LL, NR	8/04/24	14/04/2024																												
Part A: Case Study Writing (Approx. 1500 words)																															
Writing Introduction	AA, SF	12/03/24	23/03/2024																												
Project Background	EC	12/03/24	19/03/2024																												
Project Purpose	AA	12/03/24	23/03/2024																												
Identify key stakeholders	SC, YK	12/03/24	19/03/2024																												
TBL Objectives	NR, LL	12/03/24	23/03/2024																												
Editing Part A	ALL	12/03/24	13/04/2024																												
Part B: Case Study Analysis (Approx. 2500 words)																															
Project Conceptualisation	SF, EC	26/03/24	09/04/2024																												
Overview of Project Planning	LL, AA, SC	26/03/24	09/04/2024																												
Identify a Execution Plan (Project life cycle)	LL, YK	26/03/24	09/04/2024																												
Finalisation and Evaluation of the Project	NR	26/03/24	09/04/2024																												
Editing Part B	ALL	26/03/24	13/04/2024																												
Part C: Recommendation & Implementation (Approx. 2000 words)																															
Schedule Management	SF, AA	8/04/24	14/04/2024																												
Stakeholder Management	EQ, SC	8/04/24	14/04/2024																												
Editing Part C	ALL	11/04/24	14/04/2024																												
Conclusion (Max. 1 page)																															
Writing conclusion of the report	All	12/04/24	14/04/2024																												
Other Important Components to include to the report																															
Table of Content	LL	20/03/24	14/04/2024																												
Reference	All	11/03/24	14/04/2024																												
Appendices	AA, LL, NR, SF	20/03/24	14/04/2024																												
Group Meeting (Meeting Minutes)	SF, LL, NR	27/02/24	14/04/2024																												
Reflections	LL	20/03/24	14/04/2024																												
Report Compiling	All	12/04/24	13/04/2024																												
Report Review	All	12/04/24	13/04/2024																												

Appendix F – Group 6 Meeting Agendas and Minutes

Abstracts of the team formulated Gantt chart (Appendix E) have been added to the meeting documentation relevant to the weeks they were conducted in.

F1. Meeting 1 – Agenda and Minutes

Date/Time: Tuesday 27/02/2024 at 4:00pm – 4:10pm

Location: Ezone 209 Giumelli Learning Studio 3

Chair/Project Lead: Ayrton Albuquerque

Prepared By: Shenouda Farag

Attendance:	Absent/Apologies:
Everyone in attendance; Ayrton, Shen, Li-Anne, Erqian, Nuzhat, Sally and Yuki.	N/A

Agenda:

- Team Introductions, get to know each other and our goals for the Unit.
 - Project Discussion.
 - Decide on a submission plan for the Summary Page.
-

Notes & Discussion:

- Team Introduction:
 - Welcoming all team members, discussed degrees, university schedule.
- Project Discussion:

- Discussed about researching all the potential projects and narrow to one option.
 - Submission Plan for Summary Page:
 - Discussed about a suitable deadline for everyone to have projects and discuss next meeting to have a final project to work on through the semester.
-

Action:

- All team members research the available projects.
-

Next Meeting: Tuesday 03/02/2024 online on Teams.

F2. Meeting 2 – Agenda and Minutes

Date/Time: Saturday 02/03/2024 at 5:00pm – 6:20pm

Location: Online via MS Teams

Chair/Project Lead: Li-Anne Long

Prepared By: Li-Anne Long

Attendance:	Absent/Apologies:
Everyone in attendance; Ayrton, Shen, Li-Anne, Erqian, Nuzhat, Sally and Yuki.	N/A

Agenda:

- Project Discussion.
 - Rank the projects as a group, by the ones with the most information.
 - Finalisation of the Summary Page.
 - Schedule the next meeting.
-

Notes & Discussion:

- Project Discussion:
 - Discussing the potential projects for the case study.
 - Each team member presented the project(s) that they found.
 - Shen introduced his project by BAE systems.
 - Project of interest.
 - Has a lot of relevant information.
 - Li-Anne introduced her projects; Albany Highway Upgrade and Curtin's School of Design and Built Environment.

- The Albany Highway Upgrade was well documented, however due to it being abbreviated in the previous project list, it was not initially determined to be undoable. It was ruled out later in the meeting.
- The initial proposal document for Curtin's School of Design and Built Environment is locatable on the internet, however there isn't much information regarding other criterion.
- Whyte highlighted the Perth City Link project along with hypothetical projects that we could investigate.
 - Perth city projects and UWA refurbishment projects.
 - The Perth City Link project was also later discovered to have been in the list of unusable projects for the Unit.
- Yuki presented her project regarding the Kalbarri Wind Farm.
 - Bringing attention to the main aspects where the project's information would satisfy the case study criterion set for the Unit.
- Nuzhat introduced the Agnew Renewable Energy Microgrid.
 - Goldfields is a South-African company that was well known for gold mining in Australia – collab with Arena,
 - Brought up documentation regarding the financial and stakeholder information regarding the project.
 - Again, this project was also included in the list of unusable projects for the Unit and was ruled out as a result.
- Ayrton introduced Waitsia Gas and the Parliament House.
 - Waitsia Gas Project Stage 1, Client met au, and emp Australia.
 - Has completed project life cycle according to the Unit's definition of a project.
 - Natural gas plant.
 - Parliament House: most of the information available will likely only specify contractual detail, may be well documented because it's so highly prized in Australia.
- Sally introduced her projects.
 - Hong Kong-Zhuhai-Macau Bridge longest cross sea bridge.
 - Construction very complex, underwater construction.
 - Several challenges, social, environmental, and economic impacts.

- She brought up the potential issue that most credible sources of information were likely to be in a foreign language.
 - Ranked the projects as a group, by the ones with the most information.
 - Finalisation of the Summary Page.
 - Discussed and dot-pointed the main ideas for the team's project objectives and rules section of the Summary Page.
 - Shen was assigned to summarise the points generate in the meeting into a neat paragraph for the Summary Page.
 - It was established that this should be completed by Tuesday 5/2/24.
 - Final review and submission of the Summary Page is to be completed on the same Tuesday.
 - Schedule the next meeting.
-

Action:

- Shen to complete the 'Team Project Objectives and Rules' section of the Summary Page.
 - Everyone set to review, finalise, and submit the Summary Report in the next meeting.
 - Update Gantt Chart with new schedule.
-

Next Meeting: Tuesday 05/03/2024 at the Ezone.

Project Start:	26/02/2024	Wk. 1	
Display Week:	1	Feb 26, 2024	
		26 27 28 29 1 2 3	
TASK	ASSIGNED TO	START END	M T W T F S S
Early Project Phase			
Team Formation/Plan	All	27/02/24 27/02/2024	
Research into project	All	27/02/24 03/03/2024	
Unification on Project Direction	All	5/03/24 12/03/2024	
One Page Summary	SF, AA	2/03/24 06/03/2024	

F3. Meeting 3 – Agenda and Minutes

Date/Time: Tuesday 05/03/24 at 4:00pm – 4:10pm

Location: In-person at the Ezone

Chair/Project Lead: Ayrton Albuquerque

Prepared By: Li-Anne Long

Attendance:	Absent/Apologies:
Everyone in attendance; Ayrton, Shen, Li-Anne, Erqian, Nuzhat, Sally and Yuki.	N/A

Agenda:

- Project Summary Page Discussion.
 - Schedule the next meeting.
-

Notes & Discussion:

- Project Summary Page Discussion:
 - Reviewed Shen's work on summarising the "Team Objectives and Rules" notes that were made in the previous meeting.
 - Everyone agreed it was great and no changes were suggested.
 - Ayrton took on the task of completing the description of the team's first project choice, along with the note detailing our motivation behind wanting to analyse said project.
 - Next meeting time and date was decided.
-

Action:

- Ayrton is to complete the project description and reasoning for the selection for the Project Summary page.
 - Everyone is to review the page for submission in the evening of 05/03/2024.
 - The Project Summary Page should be submitted between 05/03/24 – 06/03/24.
 - Update Gantt Chart with new schedule.
-

Next Meeting: Tuesday 12/03/2024 at 11am on Teams

		Project Start: 26/02/2024		Display Week: 2		Wk. 2						
						Mar 4, 2024						
						4	5	6	7	8	9	10
TASK	ASSIGNED TO	START	END	M	T	W	T	F	S	S	S	
Early Project Phase												
Team Formation/Plan	All	27/02/24	27/02/2024									
Research into project	All	27/02/24	03/03/2024									
Unification on Project Direction	All	5/03/24	12/03/2024									
One Page Summary	SF, AA	2/03/24	06/03/2024									

F4. Meeting 4 – Agenda and Minutes

Date/Time: Tuesday 12/03/24 at 11:00am

Location: Online on Teams

Chair/Project Lead: Ayrton Albuquerque

Prepared By: Li-Anne Long

Attendance:	Absent/Apologies:
Ayrton, Erqian, Li-Anne, Nuzhat, Sally and Yuki.	Shen

Agenda:

- Case Study discussion.
- Generate a format for the Report.
- Divide and allocate tasks.
- Schedule the next meeting.

Notes & Discussion:

- Case Study Discussion:
 - Went through common questions and confusion about the Waitsia Gas project.
 - “Which part of the Waitsia project are we going to focus on, or are they all the same part?”
 - Though Waitsia Gas project has two stages, only the first of which has been completed, there are sub-parts even within this.
 - Waitsia Gas Project Stage 1A and the Xyris Gas Plant Expansion.
 - Both of which are still a part Stage one.

- “Which is the main contracted company?”
 - There are two main proponents for the project, AWE Perth Pty Ltd (AWE) and Mitsui E&P Australia Pty Ltd, both of whom are wholly owned subsidiaries of Mitsui & Co Ltd.
 - Enscope (A Quanta Services Company) was responsible for the Xyris Gas Plant Expansion aspect of the first stage.
- Erqian brought up the background research he had conducted, which was presented as a neatly formed page of work.
- Generate a Format for the Report:
 - Upon clarifying the main points of confusion, we went into dividing the work.
 - Sally suggested two different ways for dividing up work:
 - Everybody comes up with a catalogue based on independent aspects of the project such as the finance aspect, or
 - Everyone looks at a section of the report and disperse into small pairs or teams of three to complete the sections.
 - An issue that was raised with this approach is that everyone will be working asynchronously, and advancement to the next part of the report will be dependent on individuals.
 - This means that there will be times when people aren't able to do work. Additionally, there will gaps in people's understanding/knowledge of the Waitsia Project's information.
 - We decided on a different approach; groups members will all work on a section (i.e., Section A: Case Study, etc.) of the report for a timed period (i.e., a week, three weeks, etc.). Sub-categories of these sections will be allocated to team members. From there all work will be conducted in pairs, and everyone will be on the same level of understanding on the progress made on the report.
 - Sally suggested to make an outline first.

We worked on the headers of the sections and divided up the work.

- Divide and Allocate Tasks:
 - Shen and Ayrton – Introduction
 - Erqian and Ayrton – Project Background
 - Erqian and Ayrton – Project Purpose and Benefits
 - Sally and Yuki – Stakeholder Identification

- Li-Anne and Nuzhat – Triple Bottomline Consideration
-

Action:

- Everyone is to complete their work by next Tuesday, ideally earlier (i.e. by Saturday) so that all work can be peer reviewed.
 - Update Gantt Chart with new schedule.
-

Next Meeting: Tuesday 19/03/2024 at 11am on Teams

Project Start:	26/02/2024		Wk. 3				
Display Week:	3		Mar 11, 2024				
			11	12	13	14	15
			M	T	W	T	F
			S	S	S	S	S
TASK	ASSIGNED TO	START	END				
Early Project Phase							
Team Formation/Plan	All	27/02/24	27/02/2024				
Research into project	All	27/02/24	03/03/2024				
Unification on Project Direction	All	5/03/24	12/03/2024				
Executive Summary (Max. 1 page)							
Part A: Case Study Writing (Approx. 1500 words)							
Writing Introduction	AA, SF	12/03/24	23/03/2024				
Project Background	EC	12/03/24	19/03/2024				
Project Purpose	AA	12/03/24	23/03/2024				
Identify key stakeholders	SC, YK	12/03/24	19/03/2024				
TBL Objectives	NR, LL	12/03/24	23/03/2024				
Editing Part A	ALL	12/03/24	13/04/2024				
Reference	All	11/03/2024	13/04/2024				
Appendices	AA, LL, NR, SF	20/03/2024	13/04/2024				
Group Meeting (Meeting Minutes)	SF, LL, NR	27/02/24	13/04/2024				

F5. Meeting 5 – Agenda and Minutes

Date/Time: Tuesday 19/03/24 at 11:00am – 11:20am

Location: Mixed mode – Online on teams and in-person

Chair/Project Lead: Ayrton Albuquerque

Prepared By: Li-Anne Long

Attendance:	Absent/Apologies:
Ayrton, Erqian, Li-Anne, Shen and Yuki.	Nuzhat and Sally

Agenda:

- Update regarding stakeholder contact.
 - Project report progress discussion.
 - Schedule the next meeting.
-

Notes & Discussion:

- Update regarding stakeholder contact:
 - Ayrton confirmed he was able to contact a Human Resources representative from Clough and was forwarded to an engineering manager.
 - They seemed to be willing to provide some details depending on what exactly we were requesting.
 - Ayrton requested some general project management information.
 - Ayrton mentioned that he would follow up with them again.
- Project report progress discussion:
 - Ayrton, Shen and Erqian conversed about the allocation of work between them.

- There was some confusion regarding the Introduction, as it was assigned to two people (Ayrton and Shen) to complete. The issue here is that they were unsure how to complete the work together.
- The issue was resolved through Ayrton volunteering to draft the introduction, and Shen would follow through and edit it.
- Ayrton apologised for not being able to complete his allocated work, citing overloading commitments.
 - Going forward the team re-emphasised our commitment to update progress statuses in the team chat and to reach out when we need assistance.
- As a lot of Part A's allocated work was still not complete, the team agreed to have another team meeting later in the week (Saturday 23/03/24 at 6pm) to review the section and complete it.
 - All individually assigned work should be finished to each member's best ability for review in the next meeting.
- A quick overview of the existing work for Part A was conducted.
 - Everyone agreed to use Word's citation functionality to reference information for the report.

Everyone agreed to edit their current work before the next meeting

- If additional assistance is needed for any work, team members should reach out before the next meeting (or before internal deadlines).
-

Action:

- Everyone is to complete their allocated sections of Part A before the next meeting.
 - Update Gantt Chart with the new schedule.
-

Next Meeting: Saturday 23/03/2024 at 6:00pm on Teams

F6. Meeting 6 – Agenda and Minutes

Date/Time: Saturday 23/03/2024 at 6:00pm – 7:20pm

Location: MS Teams

Chair/Project Lead: Li-Anne Long

Prepared By: Shenouda Farag

Attendance:	Absent/Apologies:
Shen, Li-Anne, Nuzhat, Erqian, Yuki and Sally.	Ayrton

Agenda:

- Going through the Part A of the report – reading and editing as well as address any issues.
 - Discuss the team's preferred reference style for the project.
 - Group discussion on the case study project's information.
 - Determine a layout for Section Part B.
 - Schedule the next meeting.
-

Notes & Discussion:

- Going through the Part A of the report – reading and editing as well as address any issues.
- Reference style switch from Harvard to IEEE.
 - This was a unanimous decision.
- Discussed Erqian's idea the Waitsia Project could undertake:
 - Parallel timelining as some activities are not dependent on others.

- Team determined this would be well suited for the suggestions section of the report.
- Layout for Section Part B
 - Conceptualisation
 - Scope
 - Risk
 - Stakeholder
 - Provisional Forecasts – cost & time management
 - Planning
 - Schedule
 - Scope
 - Budget
 - Stakeholder
 - Execution
 - Integration,
 - Finalisation and Evaluation

Action:

- All members research each competency associated to the project for Part B.
 - Ayrton to be confirmed with the stakeholders for additional information.
 - Update Gantt Chart with the new schedule.
-

Next Meeting: Tuesday 26/03/2024 at 4:00pm in-person and on Teams

Project Start:	26/02/2024	Wk. 4						
Display Week:	4	Mar 18, 2024						
		18	19	20	21	22	23	24
TASK								
	ASSIGNED TO	START	END	M	T	W	T	F
Part A: Case Study Writing (Approx. 1500 words)								
Writing Introduction	AA, SF	12/03/24	23/03/2024					
Project Background	EC	12/03/24	19/03/2024					
Project Purpose	AA	12/03/24	23/03/2024					
Identify key stakeholders	SC, YK	12/03/24	19/03/2024					
TBL Objectives	NR, LL	12/03/24	23/03/2024					
Editing Part A	ALL	12/03/24	13/04/2024					
Other Important Components to include to the report								
Table of Content	LL	20/03/2024	13/04/2024					
Reference	All	11/03/2024	13/04/2024					
Appendices	AA, LL, NR, SF	20/03/2024	13/04/2024					
Group Meeting (Meeting Minutes)	SF, LL, NR	27/02/24	13/04/2024					
Relfections	LL	20/03/2024	13/04/2024					

F7. Meeting 7 – Agenda and Minutes

Date/Time: Tuesday 26/03/2024 at 3:30pm – 4:00pm

Location: In-person and online on Teams.

Chair/Project Lead: Li-Anne Long

Prepared By: Li-Anne Long

Attendance:	Absent/Apologies:
Ayrton, Shen, Li-Anne, Erqian, Yuki and Sally.	Nuzhat

Agenda:

- Discussion regarding stakeholder contact.
 - Project discussion.
 - How should we complete our team reflections?
 - Should we include Erqian's Waitsia Project timeline diagram in the background section of Part A?
 - Referencing crash course; making use of Word's citation functions.
 - Go through Part B of the report and allocated responsibilities:
 - Schedule the next team meeting.
-

Notes & Discussion:

- Discussion regarding stakeholder contact:
 - Quick update on stakeholder contact; Ayrton was able to reach a compliance director from Clough.
 - Ayrton intends to follow up on it today, once we get a reply we'll go forward.
- Project discussion:

- How should we complete our team reflections?
 - Completing it at the end together.
 - Gathering main points and then assigning a person to complete it.
- Should we include Erqian's Waitsia Project timeline diagram in the background section of Part A?
 - Appendix may be a better place for it.
- Actively using the Gantt chart and updating it to align with the work completed.
- Referencing crash course; making use of Word's citation functions.
 - Important as it will take care of the formatting and ensure that all in-text citations align with what they're meant to.
- Went through Part B of the report and allocated responsibilities:
 - Everyone who was present selected or was approvingly allocated their parts.
 - Conceptualisation:
 - Scope and Risk Identification – Shen
 - Stakeholder Identification and Provisional Forecasts – Erqian
 - Planning
 - Scope Refinement, Schedule Development and Budget Development – Ayrton
 - Stakeholder Involvement – Sally
 - Execution
 - Quality Assurance, Control and Improvement – Yuki and Li-Anne.
 - Risk Management – Yuki
 - Project Performance Reports – Li-Anne
 - Schedule control and reporting – Ayrton and Erqian
 - Finalisation and Evaluation
 - Project Finalisation report – Nuzhat

Action:

- Everyone is to complete their allocated responsibilities by Friday 05/04/24.

- Update Gantt Chart with new schedule.
- Li-Anne needs to inform Nuzhat with a summary of the meeting, and check if they're agreeable to the part they've been allocated.

Next Meeting: Tuesday 02/04/2024 at 11:00am on Teams

TASK	ASSIGNED TO	START	END	Wk. 5						
				Mar 25, 2024						
				25	26	27	28	29	30	31
Part A: Case Study Writing (Approx. 1500 words)										
Editing Part A	ALL	12/03/24	13/04/2024							
Part B: Case Study Analysis (Approx. 2500 words)										
Project Conceptualisation	SF,EC	26/03/24	09/04/2024							
Overview of Project Planning	LL,AA,SC	26/03/24	09/04/2024							
Identify a Execution Plan (Project life cycle)	LL,YK	26/03/24	09/04/2024							
Finalisation and Evalution of the Project	NR	26/03/24	09/04/2024							
Editing Part B	ALL	26/03/24	13/04/2024							
Other Important Components to include to the report										
Table of Content	LL	20/03/2024	13/04/2024							
Reference	All	11/03/2024	13/04/2024							
Appendices	AA, LL, NR, SF	20/03/2024	13/04/2024							
Group Meeting (Meeting Minutes)	SF, LL, NR	27/02/24	13/04/2024							
Relfections	LL	20/03/2024	13/04/2024							

F8. Meeting 8 – Agenda and Minutes

Date/Time: Tuesday 02/04/24 at 11am - 11:20am

Location: Online through MS Teams.

Chair/Project Lead: Li-Anne Long

Prepared By: Li-Anne Long

Attendance:	Absent/Apologies:
Ayrton, Shen, Li-Anne, Erqian, Nuzhat and Sally.	Yuki

Agenda:

- See where we are at and if we have any questions.
 - Project Part B progress discussion, each member goes through their respective sections.
-

Notes & Discussion:

- See where we are at and if we have any questions.
- Project Part B progress discussion:
 - Shen's progress update
 - Still working on their part.
 - Found Erqian's link quite good.
 - Li-Anne's progress update
 - Using the type of updates and assumed the processes leading up to them.
 - Is it too much of a stretch to apply the PDCA cycle quality management tool to it?

- We decided if there's enough evidence to infer its use, it's not.
 - Ayrton's progress update
 - Need to find more information on scope refinement, schedule, and budget refinement.
 - Will work on it.
 - Nuzhat's progress update
 - Also struggled to find information prior to Erqian's provided ASX website link.
 - Will work on their part in the next coming days.
 - Sally's progress update
 - Their part is quite clear for them, need to search for more details.
 - Local city, post an agreement on the website where they voice their opinions for Stage 2, looking to find something similar for Stage 1.
 - Erqian's progress update
 - Will work on their part on Thursday and Friday.
 - Li-Anne will follow up with Yuki.
 - Be proactive in applying PMBOK concepts to our work for this section.
 - Everyone should maintain an appendix and reference any material that they need to support their analysis.
-

Action:

- Everyone is to complete their allocated sections by the coming Friday (05/04/24).
 - Li-Anne needs to follow up with Yuki for a progress update.
-

Next Meeting: Saturday 06/04/24 at 7pm on Teams.

F9. Meeting 9 – Agenda and Minutes

Date/Time: Saturday 06/04/24 at 7pm-8:30pm

Location: Online on Teams.

Chair/Project Lead: Li-Anne Long

Prepared By: Li-Anne Long

Attendance:	Absent/Apologies:
Ayrton, Shen, Li-Anne, Erqian, Nuzhat and Sally.	Yuki

Agenda:

- Project progression discussion and updates.
 - Project stakeholder and composition clarification.
 - AWE was involved and managed Stage 1A. When MEPAU took over AWE, they decided to upgrade the facilities, constituting the Stage 1 Expansion Project.
 - Changes to the project background in the introduction, will need to ensure this is clarified to readers.
 - New potential problem?
 - Did the takeover affect the project in any meaningful way?
 - It didn't affect Stage 1A, but the MEPAU initiated WS1E, so it impacted Stage 1 in that sense.
 - Staff numbers decreased at one point in the project.
 - This was related to AWE being in debt during the project, they had to let go staff and reallocate their resources to complete the Waitisia project.

- Removed a section in the Execution part of the lifecycle analysis as more information can be found in the planning stage.
 - Allocated Part C:
 - Shen and Ayrton were allocated to complete the parallel timeline recommendation.
 - Sally was allocated to complete the stakeholder communication during execution recommendation.
 - Shen volunteered to complete the executive summary and conclusion.
 - Li-Anne volunteered to write up the group reflection.
-

Action:

- Fully complete Parts A and B before Tuesday 09/04/24.
 - Start working on Part C.
 - Update the Gantt chart.
-

Notes & Discussion:

-
-

Next Meeting: Tuesday 09/04/24 at 11am on Teams

Project Start:	26/02/2024		Study Week						
Display Week:	6		Apr 1, 2024						
			1	2	3	4	5	6	7
TASK	ASSIGNED TO	START	END	M	T	W	T	F	S
Part A: Case Study Writing (Approx. 1500 words)									
Editing Part A	ALL	12/03/24	13/04/2024						
Part B: Case Study Analysis (Approx. 2500 words)									
Project Conceptualisation	SF,EC	26/03/24	09/04/2024						
Overview of Project Planning	LL,AA,SC	26/03/24	09/04/2024						
Identify a Execution Plan (Project life cycle)	LL,YK	26/03/24	09/04/2024						
Finalisation and Evalution of the Project	NR	26/03/24	09/04/2024						
Editing Part B	ALL	26/03/24	13/04/2024						
Other Important Components to include to the report									
Table of Content	LL	20/03/2024	13/04/2024						
Reference	All	11/03/2024	13/04/2024						
Appendices	AA, LL, NR, SF	20/03/2024	13/04/2024						
Group Meeting (Meeting Minutes)	SF, LL, NR	27/02/24	13/04/2024						
Relfections	LL	20/03/2024	13/04/2024						

F10. Meeting 10 – Agenda and Minutes

Meeting Minutes 10 – Group 6

Date/Time: Tuesday 09/04/24 at 11am-11:56am

Location: Online on Teams

Chair/Project Lead: Li-Anne Long

Prepared By: Li-Anne Long

Attendance:	Absent/Apologies:
Everyone in attendance; Ayrton, Shen, Li-Anne, Erqian, Nuzhat, Sally and Yuki.	N/A

Agenda:

- Project progression discussion
 - Parts A and B updates:
 - Erqian's part is a little bit more intensive as we thought.
 - Lots of consideration regarding core concepts in the textbook and.
 - Sally is concerned about overlap with previous parts, and the two have them have decided to communicate with each outside of the meeting today.
 - The people who have identified inconsistencies between Part A and Part B will need to rectify them.
 - Ayrton will fix up introduction and background to make sure they are consistent.
 - Sally and Erqian will work together on the stakeholders in the report.
 - Shen's Part B:

- Scope of Stage 1A can be found from Enscope, and Scope for the Stage 1E can be found in Expansion plan.
- Part C update:
- Collect major takeaways and struggles in the team for the reflection.
 - Everyone discussed three main areas of reflection:
 - Things that were done well,
 - Everyone did their work within a reasonable effort of our internal schedule.
 - Had a moderator every meeting with a general agenda.
 - Had weekly meetings, consistently with almost full attendance.
 - People got back to each other relatively quickly – smooth communication.
 - No other conflicts, just concerns.
 - Stakeholder reach out attempted but failed.
 - Keep a consistent log of minutes to record project progress.
 - OneDrive folder to share documents and share everything.
 - Things that were not done well (i.e., points of conflict, issues, etc), and
 - Points of conflict: Project selection, initial clashes, and miscommunication.
 - Allocation of parts: not considering timeline in part allocation, people were allocated responsibilities that they were not familiar with. Some sort of unforeseen time management problems with other commitments that affected completion within internal deadlines.
 - Used the Gantt chart as a guide but did not efficiently apply due to disruptions that raised from a lack of stakeholder communication. This had a waterfall effect on the rest of the scheduling.
 - Proper project selection with contact with stakeholders and additional information, the report would have a smooth timeline.
 - Things to improve upon.
 - Touch on the last points and textbook.

- USE THE GANTT CHART, help give everyone a better perspective of the timeline.
 - Decide on a submission date and time.
 - To be discussed more on Saturday; for now, the group settled with Sunday night.
 - Start to think about the presentation.
 - To be discussed more on Saturday.
-

Action:

- Everyone is to complete their final allocated responsibilities.
 - Update the Gantt chart.
 - Be proactive in the Teams chat to communicate progress.
-

Notes & Discussion:

- Be careful of Word's spell check, it seems to be reverting to American correction.
-

Next Meeting: Saturday 13/04/24 at 7:30pm on Teams

F11. Meeting 11 – Agenda and Minutes

Date/Time: Saturday 13/04/24 at 7:30pm – 3:02am

Location: Online on MS Teams.

Chair/Project Lead: Li-Anne Long

Prepared By: Nuzhat Rahman

Attendance:	Absent/Apologies:
Everyone in attendance; Ayrton, Shen, Li-Anne, Erqian, Nuzhat, Sally, and Yuki.	Ayrton, Shen, Erqian, Sally and Yuki (had to leave the meeting early).

Agenda:

- Go through the entire report.
 - Cut down words.
 - Change the referencing and appendices.
 - Go through presentation roles and allocate a time to complete the presentation.
-

Notes & Discussion:

- Go through the entire report.
 - Cut down words.
 - Change the referencing and appendices.
- Go through presentation roles and allocate a time to complete the presentation.
- Sally points out the ideal placement of information in the stakeholder management section to the stakeholder recommendation (Part C)

- Sally and Erqian will aim to reform the stakeholder management section.
- Important to note; approx. 1000 words ±50 words.
- Rewrote Risk Management due to the fact it aligned more to the planning stage rather than the execution stage.
- Certain sections are missing/or have incorrect references.
 - 2.2.3
 - 2.4.1
 - 3.1
 - 3.2
- The word count for Part C was revised to be 2000 words as opposed to the initial assumption of 2500 words
 - Part C needs to be more concise as a result
- Nuzhat and Li-Anne have spent time cutting down and rewording parts to fit word count and conciseness.
 - Thoroughly reviewing the document
 - Preparing actionable goals for next meeting
- Points of conflicts/drawbacks
 - Meeting time seemed to be a difficult time for group members as many have prior commitments.
 - Discussions about certain points in the report were involved
 - Points involved whether information was suitable, redundant or incorrect
 - This is concerning due to the lack of time we have (as the report is due in approximately 36 hours)
 - Ideally, today would have been for reviewing without any major edits
 - Advise to use gantt chart however it may be too late as of now
- Planned next meeting
 - Tentatively Sunday 14/04 6:30pm
 - Finalise report
 - Begin allocating presentations

Action:

- Erqian and Sally revises 3.2 with their new information within their allocated word count
 - Further reviewing and commenting in preparation for the next meeting (14/04/2024 6:30pm)
-

Next Meeting: Sunday 14/04/24 at 6:30pm on Teams

F12. Meeting 12 – Agenda and Minutes

Date/Time: Sunday 14/04/24 at 6:30pm – 12:36am

Location: Online on MS Teams.

Chair/Project Lead: Li-Anne Long

Prepared By: Nuzhat Rahman

Attendance:	Absent/Apologies:
Everyone in attendance; Ayrton, Shen, Li-Anne, Erqian, Nuzhat, Sally, and Yuki.	Ayrton, Shen, Erqian, Sally and Yuki. (Had to leave mid-way)

Agenda:

- Finalise report
 - Cut down words and revise formatting.
 - Begin allocating presentations.
 - Set next meeting to discuss presentation.
-

Notes & Discussion:

- Discussed the revision of the executive summary as a group.
 - Clarified that Enscope was contracted by AWE/MEPAU, rather than Enscope overseeing the project.
- Discussed schedule management as assumptions of the absence of gantt chart/WBS were not clarified.
- Reviewed Part C as a group
 - Removed/reworded certain parts.

- Ayrton went ahead with switching his citations to the appendix.
- Discussion on 3.2
 - There is a lack of clarification pertaining to Stakeholder recommendation.
 - One side is arguing for a certain recommendation to be included in our response.
 - Another side is arguing against.
 - Resolution was achieved by compromising between the two members.
 - A Stakeholder table was removed in the process.
- Achieved Word Count in all parts.
- Presentation allocation has been set.
 - Project introduction, background, stakeholders and key issues. → Ayrton
 - TBL consideration and conceptualisation → Yuki
 - Planning → Sally
 - Execution → Li-Anne
 - Finalisation → Nuzhat
 - Schedule Recommendation → Shen
 - Stakeholder Recommendation → Erqian
- Li-Anne is in the process of refining the conclusion.
- Nuzhat formatted the minutes and gantt chart.
- Ideally, report is finished and submitted tonight by 12am.

Action:

- Submit report.
-

Project Start:	26/02/2024			Wk.6						
Display Week:	7			Apr 8, 2024						
		8	9	10	11	12	13	14		
TASK	ASSIGNED TO	START	END	M	T	W	T	F	S	S
Executive Summary (Max. 1 page)										
Writing Executive Summary of the report	SF, LL, NR	8/04/24	14/04/2024							
Part A: Case Study Writing (Approx. 1500 words)										
Editing Part A	ALL	12/03/24	13/04/2024							
Part B: Case Study Analysis (Approx. 2500 words)										
Editing Part B	ALL	26/03/24	13/04/2024							
Part C: Recommendation & Implementation (Approx. 2000 words)										
Schedule Management	SF,AA	8/04/24	14/04/2024							
Stakeholder Management	EQ,SC	8/04/24	14/04/2024							
Editing Part C	ALL	11/04/24	14/04/2024							
Conclusion (Max. 1 page)										
Writing conclusion of the report	All	12/04/2024	14/04/2024							
Other Important Components to include to the report										
Table of Content	LL	20/03/2024	14/04/2024							
Reference	All	11/03/2024	14/04/2024							
Appendices	AA, LL, NR, SF	20/03/2024	14/04/2024							
Group Meeting (Meeting Minutes)	SF, LL, NR	27/02/24	14/04/2024							
Reflections	LL	20/03/2024	14/04/2024							



Appendix G – Team Reflection

G1. General Overview of Teamwork and Communication

Several skills and factors such as teamwork, communication, trust, and time management within a group are essential to the success of their team activities. Achieving an efficacious application of those skills is not entirely intuitive. Group projects are often difficult to manage as they commonly involve individuals with different technical and cultural backgrounds. The potential for forming in-groups (e.g., social exclusion) and developing group-think akin behaviour (e.g., all team members conform to avoid conflict) is particularly high when the duration of the team project is short with high stakes. While our team was able to complete the GENG5505 Project on time, several issues and difficulties did arise and had to be addressed swiftly from their onset for that result to be realised.

G2. Issues and Difficulties that Surfaced Throughout the GENG5505 Project

Opening with the first activity conducted with our, at the time newly formed, team, the project selection phase platformed two stages of team development for us, forming and storming. Aside from exchanging names and contact information, everyone was unfamiliar with one another and anxious to begin work on the report. It was natural that we each wanted the projects we independently discovered and researched to be selected and prioritised within the project summary submission; especially so if we felt that they were good projects with readily accessible information. Taking on an informal leadership role, Long directed the meeting in an attempt to efficiently analyse and review all the candidate projects introduced by each team member. At the point of prioritising the projects, S. Chen voiced frustration from miscommunication regarding the value of their project. This was rectified within and after the meeting between Long and S. Chen through an MS Teams discussion, where they clarified their intentions and re-established positive relations. There is no uncertainty that this was a clear communication issue which is normal within teams at the earlier stages of team development. The prompt reaction between Long and S. Chen to mediate the conflict prevented the persistence of animosity within the group for the rest of the project. This incident highlighted a need for clearer communication with acknowledgement from each member so that potential misunderstandings or misinterpretations are avoided.

Another point of difficulty emerged from a misallocation of responsibilities. Our team explored three main methods to divide work for the GENG5505 project:

1. Each team member develops a catalogue of an individual aspect of the project (e.g., financial, environmental, quality, etc) and writes about their field of knowledge in the report.
2. The team will split up the sections from Part A to Part C between all seven members, such that most members would not be involved in all Parts, just the ones they are allocated.
3. Working in phases through the parts (i.e., Part A, Part B and Part C) synchronously as a team for a timed period (e.g., one week, two weeks, etc.). Such that everyone is working on Part A and its sub-sections before moving on to Part B, and the same for Part B to Part C.

The third option was unanimously selected by the team as we felt it allowed everyone to be involved with all aspects of the report. Division and allocation of tasks within each phase was done through volunteering or agreed allocation. This meant that at each time of division, members were provided the opportunity to reject or accept certain responsibilities, and most members took on responsibilities that they felt they could manage within their work schedules. A persistent issue where team members only maintained limited contact with one another outside of scheduled meetings, in combination with unforeseen changes in members' schedules, caused some members to be overloaded with tasks. Resulting in setbacks to the agreed internal deadlines.

Additionally, during transitions between parts, members were not purposefully set up with project aspects for which they were familiar (i.e., someone focusing on the purpose and background of the project in Part A was then allocated stakeholder identification at the conceptualisation project life cycle stage in Part B). Consequently, further delays were incurred as members had to review foreign aspects of the project. Unexpected delays were marginally accounted for when scheduling the entire report writing timeline. These issues helped the team recognise flaws in our approach to project management, where we did not consider variability in personal work schedules or redundancy time dedicated to research. They became a costly learning experience that the team will reflect upon in future endeavours.



The final issue we identified during the GENG5505 project involved the improper application of our time management tool. The Gantt chart, developed by the team, for the majority of the project, ended up being used as a guide for our schedule, not a representation of what it was in reality. This was due to disruptions raised from our unfruitful efforts to contact the Waitsia Project's stakeholders, as we weren't certain if we'd be able to get the documents needed for certain parts of the report, and hence could not begin work on them. Members often referred to meeting minutes or each other to recall internal deadlines rather than accessing the team's Gantt chart as it was often outdated. The source of this issue was likely the vague management of the Gantt chart, though it might seem intuitive that each member is to update the timeline for their responsibilities this was not expressed at any time in the earlier part of the project. Once again, this became a costly learning experience that the team will reflect upon in future endeavours.

G3. Overall Perception of Team Behaviour and the Quality of Work Produced

Throughout most of the GENG5505 project, our team worked rather harmoniously; having established a sense of trust and comradeship in one another. All members completed their work to a high level while exhibiting a reasonable effort to adhere to our internal schedule. Despite the issues and difficulties mentioned in the previous section (G2), all team members were always open to recommendations without taking feedback personally. This allowed for efficient interactions and expression of ideas within the group. Aside from this, our team was particularly satisfied with how we conducted team meetings; and the format and regularity of them.

Team meetings are a useful tool to correspond information and coordinate group activities. The election of a leader during meetings, allows for a single individual to govern the flow of discussion, ensuring that all members are accounted for whilst maintaining the team's focus on the agenda. Albuquerque and Long oversaw our team meetings for this project. With their guidance, meetings remained concise and well-structured. Equally important, meeting minutes documenters contribute greatly to the team's system of record-keeping; allowing for the team's actions to be traceable and decisions to be revisited. Farag, Long and Rahman undertook this role to ensure that a consistent record of the team's progress throughout this project was maintained. Furthermore, the team's commitment to meet up at least once a week helped to establish a system of progress validation (i.e., all project work was reviewed in our team meetings, to offer feedback and ensure compliance with unit expectations). Moreover, though

we had an issue with the frequency of our communication when members did reach out for assistance, everyone was quick to respond and offer their help. This implies that the team had the capacity to maintain stable and regular contact but was apprehensive in its initialisation.

On a separate note, normalising a document and information management system for group projects can help immensely reduce confusion and redundancy in the process of report writing. It did not take long for our group's MS Teams chat to become cluttered with shared documents and relevant abstracts for our case study. In response to this, Farag utilised OneDrive to create a common and well-organised platform to manage our files. This was a significant change in the way we handled files; our improved organisation meant that we were able to dedicate more resources to valuable project progress (i.e., by avoiding redundancy in researching previously found information, members could move on.)

Overall, everyone was strongly driven and desired the successful completion of the GENG5505 Group Project. E. Chen, Rahman and Zhao contributed greatly to researching topics and locating core project management documents for our case study, sourcing relevant and helpful information for both their team members and themselves. It was the collective effort of everyone within our group that culminated in this resulting report.

G4. Areas of Improvement and Discussion

The planning phase of any project is arguably the most important part. Time and care taken within this stage allows for a team's focus to remain on the quality of their outputs, rather than the methods needed to achieve them. If our team had taken more time in both analysing the scope of the GENG5505 Project and reviewing the multitude of completed projects that exist, it is probable that some of the issues and difficulties expressed in section G2 may not have come to fruition. Successful contact and liaising with the Waitsia project stakeholders were not possible for our team, due to a member's conflict of interest, between the company they are working with and MEPAU. It took a considerable amount of time to attain this disapproval, leading to the delays discussed in section G2, see Appendix D. If we had considered the possibility of this rejection during the project selection stage, our collection of researched projects would have been prioritised differently. This was an oversight from all members and was a collective mistake. In future projects, we believe it to be important to fully utilise the time provided to review, discuss, and question the scope of the work required from us. In this

way, team bonding and communication can also strengthen before the execution of gainful team activities.

Through the GENG5505 Major Group Project, our group was able to take a proactive approach to comprehending project management actions and activities undertaken in real-world projects. It was educationally valuable to review the methods undertaken by engineering companies to ensure the successful completion of their projects, where they were on time and within scope. Relating to our takeaways as a team, we recognise that there will always be a range of new and unique challenges in any group project, but the ability to adapt and routine clear communication can help alleviate stress within a team, resulting in better products.



(End of the report)