Granny Smith Hybrid Power Station (GSHPS)

Environmental Commissioning Plan

Rev.	Date	Revised Section	Revision Details
A	03/09/2025	All	Draft for Review
Final Sign Off		Name:	Signed:

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1 INTRODUCTION

The Environmental Commissioning Plan (ECP) applies to the execution of the Granny Smith Hybrid Power Station Contact Maximum Demand (CMD) increase project to be delivered by Aggreko Australia Pty Limited (Aggreko) for Goldfields Mining Australia Pty Ltd (Goldfields) at the Granny Smith Gold Mine, Laverton, Western Australia under a proposed amendment to the current Power Purchase Agreement (PPA).

This document provides a general overview of the environmental aspects of the project with proposed testing to validate actual environmental performance of the facility relative to predicted performance.

1.1 EQUIPMENT INSTALLATION (FOR 45MW INSTALLATION)

The CMD increase will include installation of the following new equipment and infrastructure;

- (1) New 33kV switchroom and installation of new cables and conduits.
- (10) J420E generators (identical to the generators presently at the site);
- (10) Low Pressure Gas Trains (identical to the LP gas trains presently at the site);
- (3) Medium Pressure Gas Trains (identical to the MP gas trains presently at the site);
- (11) Replacement 7500kVA (KNAN) transformers – 7 to replace existing ONAN transformers and 3 new transformers
- Modification to existing gas piping for existing generators and installation of new MP and LP piping for the 10 new generators (described above);
- Installation of new oil piping for the 10 new generators (described above);
- Removal of 11kV cabling, switchroom, and related electrical assets

1.2 EQUIPMENT INSTALLATION (INCREASE FROM 45MW TO 50MW)

The CMD increase will include installation of the following new equipment and infrastructure;

- (4) J420E generators (identical to the generators presently at the site);
- (4) Low Pressure Gas Trains (identical to the LP gas trains presently at the site);
- (1) Medium Pressure Gas Trains (identical to the MP gas trains presently at the site);
- (1) New 7500kVA (KNAN) transformer
- Installation of new LP gas piping for the 4 new generators (MP assets to be installed with 45MW CMD works);
- Installation of new oil piping for the 4 new generators.

1.3 EQUIPMENT INSTALLATION (INCREASE FROM 50MW TO SITE LIMIT)

The CMD increase will include installation of the following new equipment and infrastructure;

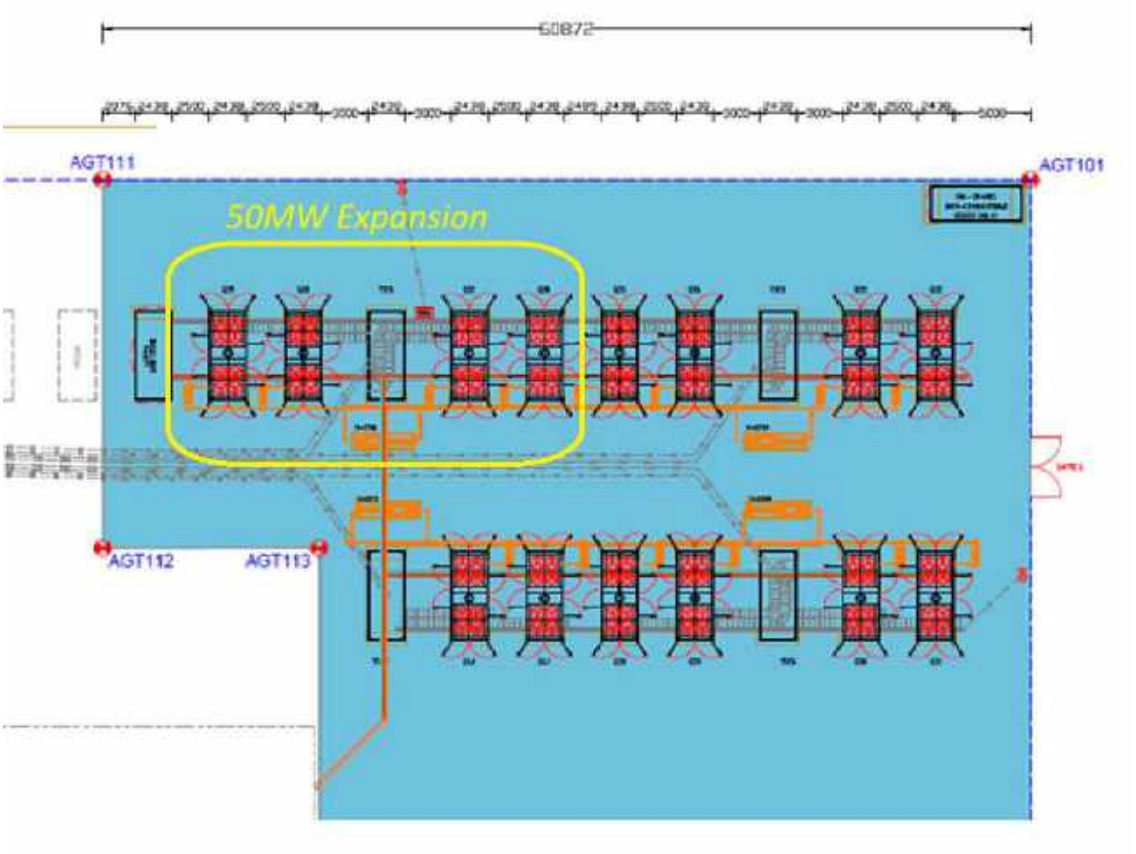
- (9 – with provision for maximum of 15) J420E generators (identical to the generators presently at the site);
- (9 – with provision for maximum of 15) Low Pressure Gas Trains (identical to the LP gas trains presently at the site);
- (2 – with provision for maximum of 3) Medium Pressure Gas Trains (identical to the MP gas trains presently at the site);
- (2 – with provision for maximum of 3) New 7500kVA (KNAN) transformer

- Installation of new LP gas piping for the new generators
- MP piping assets to be installed to new LP skids);
- Installation of new oil piping for the new generators

Note 1: Project is subject to detailed investigation of generator heat loading and gas delivery limitations.
Note 2: Aggreko HP/MP gas train maximum gas delivery capacity needs to be reviewed.

1.4 ONSITE LOCATION OF WORKS

The image below indicates the orientation of the additional equipment to be installed and commissioned for 45MW CMD. Item in yellow box are additionally proposed for 50MW CMD.



1.5 ONSITE LOCATION OF FUTURE WORKS

See site plan for placement of future generators

2 OVERALL SCHEDULE

For 45MW arrangement -

Subject to the receipt of appropriate approvals, the following schedule has been developed for Goldfields Granny Smith Mine Power Station expansion.

For 50MW arrangement -

If the additional capacity for 50MW CMD is approved, then construction and commissioning will occur in parallel during Stages 3.1 to 3.4. If this occurs later, the process will be unchanged.

For 64MW (max 70MW) arrangement -

When this stage proceeds, generator and transformer construction and commissioning will follow the same process as detailed here.

2.1 CONSTRUCTION TIMEFRAME (UP TO 50MW)

- Construction: Commence April 2026 – October 2026
- Commissioning: Commencing from August 2026
- Site fully operational: January 2027

2.2 CONSTRUCTION TIMEFRAME (UP TO 70MW)

- Construction: To be confirmed
- Commissioning: To be confirmed
- Site fully operational: To be confirmed, tentatively planned for August 2027

3 COMMISSIONING SCHEDULE

The environmental commissioning process and schedule is summarised below.

3.1 STAGE 1 – CONSTRUCTION VERIFICATION AND HYDROSTATIC LEAK TESTING

The initial stage of the Goldfields Granny Smith Power Station CMD increase works includes installation of preassembled / pretested gas pipe junctions and spools. Site commissioning of these assembled components will comprise testing of on-site fabrication and installation to confirm that the applicable rules, standards and specifications have been met, including any conditions of the Works Approval.

This includes documented hydrostatic leak testing of site welded pipework prior to introduction of hydrocarbons (module pipework having already been hydrostatically leak tested during factory acceptance testing at the suppliers premises, prior to shipping to site).

3.1.1 Duration

Construction verification and hydrostatic leak testing will be completed concurrently and approximate duration of:

- Construction verification duration - (2) weeks;
- Hydrostatic leak testing - (1) week;

3.2 STAGE 2 – PRE-COMMISSIONING FUNCTION TESTING

Following completion of Stage 1, installation of enabling assets and pre-commissioning functional testing will commence.

3.2.1 Key Milestones

- This stage involves the installation of the new switchroom, 4 new transformer modules, 14 generators, gas and oil piping, new earthing transformers, new diesel black start generator and all 33kV cabling. While cold commissioning will be carried out in this phase, no final commissioning tasks will be completed. Note that transformers are fully self bunded and factory filled / sealed with FR3 oil (as opposed to mineral oil). For this reason, unless this equipment is dropped from some height or crushed, there should be no release of this oil.
- On account that all work will be completed within the station boundary and under appropriate standards and environmental control, any risk (either within the site or without) is expected to be very limited.
- Gas piping will be connected to new generators and this will be leak tested in accordance with the tests indicated in Section 3.1.

<u>Duration</u>

Approximately 3 months for installation.

Gas piping pre-commissioning testing duration is estimated to take approximately (1) week to complete.

3.3 STAGE 3 – COMMISSIONING

Once all enabling works and cold commissioning is complete, Stage 3 Equipment commissioning will commence. Stage 3A is to be completed in conjunction with Stages 3B and 3C.

Testing and commissioning will follow a structured and phased approach in accordance with the Engineering Specifications, OEM procedures, and relevant Australian Standards.

Each stage will be documented via ITPs and ITRs and witnessed where required. Results will be consolidated in the MDR.

3.3.1 Stage 3A – "No Load" Commissioning

During this stage the power station control system will be tested to ensure correct operation and interaction with the balance of the enabling plant installed in Stage 2. New switchroom and 4 new transformers will be hot commissioned and energised during this step. This step is to be completed in conjunction with Stages 3.3.2 and 3.3.3 below.

Duration

Completion of the 'No Load' commissioning duration is approximately (2) weeks.

3.3.2 Stage 3B – Gas System Dry Commissioning

In conjunction with Stage 3A, Dry commissioning will commence. During this stage all moisture within the new gas delivery assets (piping and let down assets) must be removed before wet commissioning can commence.

This process is achieved by flowing dry gas (pre-treated natural gas) through the cold box system to pick up any moisture left over from the installation and testing processes.

Duration

Completion of Dry Commissioning is approximately (1) week to complete.

3.3.3 Stage C – Wet Commissioning

After Stage 3B, Wet Commissioning will commence, whereby gas is introduced to the installed plant equipment and built-up to steady condition for operational commencement.

Duration

Completion of Wet Commissioning is approximately (3) days.

3.4 STAGE 4 – PERFORMANCE TESTING

After wet commissioning, Stage 4 Performance Testing can commence, whereby the gas supply is introduced to the new gas delivery assets and generator sets. At this time, the sets will be run up to load to permit machine tuning and load testing.

Commissioning emissions testing will be undertaken at this stage. This step includes Jenbacher and Aggreko Inspection & Test Plan, implementation and recording, confirming compliance with the with the capability to operate in accordance with the site environmental requirements.

Inspection & Test Plans to be completed will consist of:

- Cable List;
- Cale Racking & Cable Laying;
- Liquid Piping Laydown & Connection;
- Gas Generator Laydown & Connections;
- Gas Ancillary Module Connection;
- 6- Pack Containerised Transformer Laydown & Connections;
- Control System Panel Laydown & Connections;
- Gas Piping Laydown and Connections;
- Emission Testing;

Duration

Completion of Performance Testing is approximately (2) weeks.

From the conclusion of this step, it is proposed to continue the replacement of transformers and gas piping throughout the rest of the site. The process for these steps will be similar to the installation of the new generators with the exception that the generators are already emission tested. Gas piping will be tested in accordance with the process established in Steps 3.3.2 and 3.3.3.

3.5 STAGE 5 – TIME-LIMITED OPERATIONS

If applicable, following submission of the Environmental Commissioning Report, Aggreko requests a period of up to 180 days of time-limited operations, whereby the Goldfields Granny Smith Power Station CMD increase could commence operations whilst the ‘License Application’ is in the process of assessment and approval by DWER, if not issued by the 1 June 2026.

4 KEY INPUTS AND OUTPUTS USED IN THE ENVIRONMENTAL COMMISSIONING PROCESS

Inputs for environmental commissioning of the Goldfields Granny Smith Power Station CMD increase include:

- Natural gas;
- Engine oil;
- Engine coolant;
- Diesel (for 1 black start genset); NB: Expected operation of this set would be not more than 10 hours during testing and commissioning

The key output of the Power Station is electricity to supply Granny Smith Mine Site with liquified natural gas.

5 EXPECTED EMISSIONS DURING ENVIRONMENTAL COMMISSIONING PROCESS

Key emissions from the Gas Fired Generators during environmental commissioning are 'Air Emissions' and 'Noise' from operating plants and equipment. The key 'Air Emissions' are listed below:

5.1 AIR EMISSIONS

5.1.1 Oxides of Nitrogen (NOx)

- Emissions of Oxides of Nitrogen result from the combustion of hydrocarbons, especially at high temperatures.
- Commissioning activities, including tuning off the gas power station will help to keep NOx emissions to a minimum during future normal operations.

5.1.2 Sulphur Dioxide (SO_2)

- SO_2 emissions from power generation are largely a result of the Sulphur content in the fuel consumed;
- Western Australian natural gas contains low levels of Sulphur, thus the emission of SO_2 resulting from natural gas combustion is very low;
- Due to the high efficiency of the gas generator units, the fuel consumed per unit of electricity produced is also lower, meaning lower SO_2 emission intensity than less efficient gas fired generators;

5.1.3 Particulate Matter (PM)

- Particulate emissions result from the carryover of non-combustible trace compounds in the fuel and lubricating oil as well as incomplete combustion.
- Generally, gas fired reciprocating engines emit very low quantities of particulates.

5.1.4 Carbon Monoxide (CO)

- Carbon monoxide emissions generally result from incomplete combustion, the expected emissions of CO during commissioning are extremely low.

5.1.5 Sulphur Hexaflouride (SF6)

- The new 33kV switchboard is prefilled with SF6 gas. This switchboard will come to the site prefilled and sealed and no emissions are expected. The existing 11kV switchboard is also SF6 filled and will be taken away from the site in full.

6 COMMISSIOING EMISSIONS TESTING

During Stage 3.4 Commissioning (Performance Testing), NATA accredited air monitoring technicians will be at site to monitor the point of source emissions from each of the 14 new generator exhaust stacks. The objective is to establish emissions when the generators are at steady state, confirm that the steady state emissions do not exceed those stated in the Works Approval and to provide live data feedback, which will enable the fine tuning of the facility and to minimise harmful emissions and ensure engine efficiency. Emission testing will be in-line with the manufacturer specifications and in compliance with WA Continuous Emission Monitoring System (**CEMS**) Code for Stationary Source Air Emissions (Department of Environment Regulation, 2016).

7 RISK MANAGEMENT

Risk Management will be in accordance with Aggreko Occupational, Health, Safety & Environmental, including Aggreko Hazard Management Plan and Standard Operating Procedures with adherence to Federal & State Laws & Regulations and Australian Standards.

7.1 REPORTING

Escaping liquids or gasses into the environment with the potential or likelihood to cause pollution or environmental harm (other than those within any limits authorised under the Works Approval) will be reported as soon as practicable to the Department of Water and Environmental Regulation. Details of any environmental incident that takes place during environmental commissioning will be reported in the Environmental Commissioning Report that will be submitted to DWER within 60 days of completion of Stage 3.

7.2 UNPLANNED OR EXCESSIVE ENGINE EMISSIONS

Unplanned emissions or emission exceedances (if applicable) will be managed by adjusting the tuning of the engine where necessary. In cases where emission exceedances cannot be resolved, the machine will be repaired or replaced.

7.3 OIL AND CHEMICALS MANAGEMENT

All chemicals utilised will be managed in accordance with Aggreko Hazard Management Plan and Standard Operating Procedures with adherence to Federal & State Laws & Regulations and Australian Standards.

7.4 SURFACE WATER CONTAMINATION

An additional review of the storm water assessment is underway for the facility and will provide the basis for any modification of the existing Storm Water Management Plan (**SWMP**).

8 VARIANCE OF ENVIRONMENTAL COMMISSIOING TO STANDARD OPERATIONS

Input	Variance to Standard Operations
Natural Gas	No change
Engine Coolant	First fill volume during commissioning will be greater than the minor quantities required for standard operations
Engine Oil	First fill volume during commissioning will be greater than the minor quantities required for standard operations

During dry commissioning the dry natural gas used to remove moisture from the system will be diverted to the cold box system.

The gas generator sets will operate efficiently and at their intended emissions intensity per unit of electricity produced. While emission tests are completed at a power level near full load (their normal operational point), emission composition does differ at lower loads such as may be encountered during commissioning.