



AGL Energy Limited

T 02 9921 2999

F 02 9921 2552

agl.com.au

ABN: 74 115 061 375

Level 24, 200 George St

Sydney NSW 2000

Locked Bag 1837

St Leonards NSW 2065

Katrina O'Reilly
Team Leader – Compliance
Department of Planning and Environment
Level 16, 4PSQ
12 Darcy Street
Parramatta NSW 2150

BHB-AGL-HS-GEN-0161

20th December 2023

Dear Katrina,

SSD – 11437498: Extended working hours bimonthly report (December 2023)

AGL Energy Limited (**AGL**) received development consent under section 4.38 of the NSW *Environmental Planning and Assessment Act 1979* to construct the Broken Hill Battery Energy Storage System (**Project**) at Broken Hill, NSW on 8th September 2021. Following a request for modification of that development consent, revised conditions were granted by the Department on 15th July 2022 for SSD 11437498-Mod-1.

On 28th February 2023, the Department provided approval to undertake works as requested at the following times:

- Monday to Friday 7am to 6pm
- Saturday 7am to 6pm
- Sundays and NSW Public Holidays 8am to 1pm

As a condition of this approval, AGL provides a bimonthly report as requested, which includes details of works undertaken and complaints received. This is attached for your reference.

This will be the final submission to DPE regarding the extended working hours. Commissioning of the project is in its final stages, with the facility anticipated to commence operations from 21st January 2024 (refer to notification of commencement of operations BHB-AGL-HS-GEN-0158).

AGL takes its regulatory compliance responsibility seriously and is committed to good environmental practice. If you require any further information, please do not hesitate to contact Vicki Brady, Senior Manager, Environment – Energy Hubs on VBrady@agl.com.au or 0499 304 473.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Hamid Shilani', is written over a light blue circular stamp.

Hamid Shilani
Project Director – Broken Hill Battery Project
m: 0405 588 922
e: hshilani@agl.com.au



BROKEN HILL BATTERY ENERGY STORAGE SYSTEM

**OUT OF HOURS CONSTRUCTION WORK
DPE BI-MONTHLY PROGRESS REPORT**

30TH NOVEMBER – 17TH DECEMBER 2023



AGL – Broken Hill BESS Project

Out of Hours Construction Work Bi-Monthly Report

TABLE OF CONTENTS

1	INTRODUCTION	3
1.1	PURPOSE	3
1.2	SCOPE.....	3
1.3	ROLES AND RESPONSIBILITIES.....	3
1.3.1	Project Manager and Site Manager	3
1.3.2	Site Supervisors.....	3
1.3.3	Workers.....	3
1.3.4	HSE Manager.....	3
1.4	DEFINITIONS.....	4
1.5	REFERENCES	4
2	PROGRESS REPORT – EXTENDED WORK HOURS	4
2.1	COMPLIANCE CONDITIONS WITH EXTENDED WORKING HOURS	5
2.2	PLANT AND EQUIPMENT USED FOR EXTENDED CONSTRUCTION WORK HOURS AND NOISE ASSESSMENT .	5
2.3	OPERATIONAL CONTROLS.....	5
2.4	PROGRESS OF THE PROJECT.....	6
3	COMPLAINT PROCESS FOR EXTENDED WORKING HOURS	6
4	CONCLUSION	6
	APPENDIX A – PLANT AND EQUIPMENT WORK BREAKDOWN STRUCTURE – NOISE SAMPLING AND CONTROLS	7
	APPENDIX B – REPORTING PERIOD CONSTRUCTION PROGRESS AND WEEKLY LOOKAHEADS	8
	APPENDIX B2 – CONSTRUCTION PROGRESS – 26TH OCTOBER – 17 DECEMBER.....	9
	APPENDIX B2 – CONSTRUCTION PROGRESS – 26TH OCTOBER – 17 DECEMBER.....	10
	APPENDIX C – COMPLAINTS REGISTER	11



1 INTRODUCTION

1.1 PURPOSE

To provide an *Out of Hours Work* (OOHW) Report to the Department of Planning and Environment (DPE) NSW every two months as specified in the approval letter which was received on the 28th of February 2023 by the DPE Director of Compliance.

The report is to detail the progress of the project and address any complaints received.

1.2 SCOPE

For construction work to be conducted from 7am to 6pm on Saturdays and 8am to 1pm on Sundays and NSW public holidays for work outside normal construction hours which is 6am to 5pm from Mondays to Fridays.

The increase is for the duration of the project.

1.3 ROLES AND RESPONSIBILITIES

1.3.1 Project Manager and Site Manager

- Overall responsibility for the implementation, monitoring and management of the extended work hours strategy inclusive of noise, vehicle movements and fatigue management.
- Compliance with all *working hours* within the boundaries of the development approval and consent for the project.
- Compliance with all *conditions* applied for working hours and associated activities within the development approval and consent for the project.

1.3.2 Site Supervisors

- Management of approved working hours within the prescribed time-frames.
- Management of all activities and noise controls within the prescribed time-frames.
- Management of vehicle movements and noise within the extended work hours.
- Evaluation and control of fatigue related risk factors with all workers on the project.
- Monitoring of compliance with noise and vehicle movements and evaluation of control measures.

1.3.3 Workers

- Compliance with the Extended Work Hours noise generation controls and vehicle movements.
- Management of change with noise and vehicle movement factors with associated controls.
- Identifying and reporting any potential or actual breach with noise generating activities and associated agreed controls.
- Monitoring self and others with noise generating activities.

1.3.4 HSE Manager

- Assist with the implementation of the Extended Work Hours Strategy.
- Evaluate, monitor and report effectiveness with Extended Work Hours Strategy.
- Assist with the management of any complaints, resolution, reporting and corrective actions from noise producing activities.



AGL – Broken Hill BESS Project

Out of Hours Construction Work Bi-Monthly Report

1.4 DEFINITIONS

Term	Meaning
BESS	Battery Energy Storage System.
dBA	Noise measurement in decibels.
dBC	Measure of the strength of an instantaneous signal at radio frequency . The dBc increment is based on the decibel, a logarithmic measure of relative signal strength.
DC	Development Consent. Approval and a license to operate for the project within the boundaries of the conditions within the DC.
EIS	Environmental Impact Statement
JHEA	Job Hazard Environmental Analysis
NMLs	Noise Management Levels within Construction.
OOHW	Out of Hours Work
PCBU	Person Conducting Business or Undertaking for or on behalf of an organisation. A person in control of the work environment.
Time Weighting Fast	125 metres per second in dBA and dBC
Time Weighting Slow	1 time per second in dBA and dBC
WBS	Work Breakdown Structure of Plant and Machinery Noise Levels.

1.5 REFERENCES

- BESS Development Consent - SSD-11437498 (as modified) – Schedule 3 condition 13 Construction, Upgrading and Decommissioning Hours
- SSD – 11437498: Request to Amend Construction Working Hours
- Broken Hill Battery Letter Extension of Working Hours BHB-AGL-CX-0040
- 4017-PLA-HSE-021 BESS Extended Work Hours Strategy and Noise Report
- BESS OOHW Approval Letter – DPE 28/02/2023
- 4017-PLA-HS-008 BESS Fatigue Management Framework Extended Work Hours
- Appendix A – Plant and Equipment Machinery Work Breakdown Structure – Noise Controls
- Appendix B – Reporting Period Construction Progress and Weekly Lookaheads
- Appendix C – Altrad Integrated Reporting (AIR) System
- Appendix D – Complaints Register
- Appendix E – BESS Fatigue Management Framework Extended Work Hours
- Appendix F – HSE Management and Operational Control Board – Daily Review and Sign On – Weekly RESET



AGL – Broken Hill BESS Project

Out of Hours Construction Work Bi-Monthly Report

2 PROGRESS REPORT – EXTENDED WORK HOURS

The following project report outlines current progress within the project from the inception of OOHW.

The project consortium shall manage noise related risks associated with the approved project controls for OOHW in context with planning considerations within the project life cycle and associated operational controls as specified within the approved submission by the consortium being the *4017-PLA-HSE-021 BESS Extended Work Hours Strategy and Noise Report*.

2.1 COMPLIANCE CONDITIONS WITH EXTENDED WORKING HOURS

The following conditions have been met during this reporting period with implementing and communicating the OOHW conditions and associated controls being:

- Machinery used during OOHW will only involve a pad roller, grader, 20-tonne and 6-tonne excavators, skid steer loader, truck and dog trailer and water cart;
- No pile driving, jack hammering, use of air compressors and delivery of materials that may disrupt local roads will occur during the OOHW;
- A complaints register will be developed; and
- The Construction Environmental Management Plan will be updated to reflect the OOHW.

2.2 PLANT AND EQUIPMENT USED FOR EXTENDED CONSTRUCTION WORK HOURS AND NOISE ASSESSMENT

A detailed listing of equipment used within this reporting period for extended work hours and associated construction noise assessments from an initial baseline survey is detailed in *Appendix A – Plant and Equipment Work Breakdown Structure – Noise Controls*, and includes the following plant and equipment:

- 6 Tonne Excavator;
- 25 Tonne 320 Cat Excavator;
- Skid Steer Loader;
- Pad Roller;
- Tipper Truck
- Water Cart.

2.3 OPERATIONAL CONTROLS

The following operational controls have been established within the Extended Work Hours Strategy and Framework for implementation, monitoring, evaluating, and controlling, which includes:

- Duties of a PCBU and persons in management and control of a workplace to understand and apply such duties as required by section 20 of the NSW WHS Act, inclusive of extended hours obligations and associated conditions.
- Noise generating activities and controls defined daily and weekly with operational controls documented on the Job Hazard Environmental Analysis (JHEA) with noise activities and monitored for compliance.
- Wind factors evaluated and monitored daily to establish wind direction, noise carry and associated controls.
- Noise assessments conducted for peak periods or noisy equipment to confirm boundary noise compliance.
- Controls with noisy activities complied with for Saturdays, Sundays and Public Holidays. Refer to *Section 2.1 Compliance Conditions with Extended Working Hours* of this report.



AGL – Broken Hill BESS Project

Out of Hours Construction Work Bi-Monthly Report

2.4 PROGRESS OF THE PROJECT

The reporting period includes Construction Weekly Lookaheads and overall progress with construction works and OOHW activities. Refer to *Appendix B – Reporting Period Construction Progress and Weekly Lookaheads*.

3 COMPLAINT PROCESS FOR EXTENDED WORKING HOURS

A complaint process has been established as detailed in the:

- 4017-PLA-GE-002 - Stakeholder Management Plan; and
- 4017-PLA-GE-003 - Regulatory Compliance Plan.

To confirm no complaints have been submitted within this reporting period for OOHW.

All complaints are formerly submitted within the Altrad Information Reporting (AIR) System and events recorded in the Project Complaints Register. Refer to:

- *Appendix C – Complaints Register*

4 CONCLUSION

The project workforce has been informed of the controls established for OOHW during construction activities, which have been integrated within the 4017-PLA-HS-008 BESS Fatigue Management Framework Extended Work Hours.

Daily and weekly monitoring and evaluation of controls for OOHW activities are imperative. To ensure strict compliance, detailed operational controls are meticulously documented in each workgroup's Job Hazard Environmental Analysis (JHEA), which undergoes a thorough review and reset every Monday.

Rest assured that all JHEAs are aligned with Safe Work Method Statements and Permits to Work. They are meticulously handwritten, verified, and approved by the Site Manager and HSE Manager to confidently manage risk, opportunity, and change.

Such documentation is also verified daily by the onsite AGL client representative.

The AGL HSE Manager for Energy Hubs provides strict oversight by visiting the site thrice every week to verify HSE activities and proactively support any project requirements.

Valmec has received absolutely no noise or disturbance complaints to date regarding the AGL Broken Hill BESS Project. Valmec Australia submits this report for OOHW and encourages any feedback from the Department of Planning and Environment to ensure the project meets all specified obligations.



AGL – Broken Hill BESS Project Extended Work Strategy and Noise Report



APPENDIX A – PLANT AND EQUIPMENT WORK BREAKDOWN STRUCTURE – NOISE SAMPLING AND CONTROLS

Activity	Equipment	Location	dBa Time Weighting Measurement Fast	dBa Time Weighting Measurement Slow	Date	Time	Observed Weather Conditions	Comments
Spreading 20mm aggregate rock in Switch Yard	Skid Steer Loader	South End of Area 1.	67.7 dBA 74.5 dBA	70.0 dBA 77.8 dBA	Monday, 20 November 2023	11.30am	Mostly Sunny, 31 degrees.	First reading taken 6 metres from operations. Second reading taken 2 metres from
Rolling along Northern fence line	3 Tonne Roller	Operating East to West in Stage 1 Area 2.	61.6 dBA	70.3 dBA	Friday, 24 November 2023	1.30pm	Possible Thunder Storm 28degrees.	Reading taken 2 metres from operations.
Dump 20mm aggregate rock	12 Tonne Tipper	North Central of Area 1.	68.1 dBA 78 dBA (Reversing)	71.8 dBA 80 dBA (Reversing)	Wednesday, 29 November 2023	8.45am	Mostly Sunny, 28 degrees.	Reading taken 6 metres from Tipper Operating on North Central.
Backfill of Swale drain with topsoil.	6 Tonne Excavator	Northeast of Area 1.	67.2 dBA	71.8 dBA 80 dBA (Reversing)	Friday, 1 December 2023	10.30am	Mostly Cloudy, 26 degrees.	Reading taken 8 metres from Excavator Operating. Second reading with Excavator reversing with Squawker on.
Water Cart Operations	Water Cart	Operating East to West in Stage 1 Area 2.	51.6 dBA	53.8 dBA	Tuesday, 12 December 2023	2.30 pm	Mostly Sunny, 39 degrees.	Reading taken 4 metres from operations.



AGL – Broken Hill BESS Project Out of Hours Construction Work Bi-Monthly Report



APPENDIX B – REPORTING PERIOD CONSTRUCTION PROGRESS AND WEEKLY LOOKAHEADS

The following construction schedules outline activities with project progress aligned with OOWH conditions and include the following periods:

-26th October – 17th December

See Attachments: Appendix B

Construction

Activities for week ending 03/12/2023

Area 2 Electrical

- Close out punch list items.

Area 1 & 2 Civil Works

- Completed Ag line installation in area 2.
- Completed bollard installation in area 1 & 2.
- Grouting activities.
- Continue with topsoil of pond and swale.
- Continue with 20mm aggregate installation.

Area 1 & 2 Mechanical Works

- Close out punch list items.

Commissioning Activities

- Cold commissioning of Battery Cubes in area 2 (CATYL)
- Aux Load Power connected from TransGrid to Bess Switch Yard.
- Energise 415v Panel through AUX Load.
- Inhibit Loop Fibre's in area 2 Inverters (Fluence)
- RMU protection relay configuration upload and checks.
- HPO Final Punchlist Walkdown (RMUs, Core 11) Valmec/Fluence
- SCADA testing for RMUs Circuit Breaker remote switching.
- Sign Mechanical Completion Certificate 4017-MCC-018 (HPO)
- Commence RMU 1, 2 and 3 protection relay testing. (Integral Power)
- Energisation of Core 11 RMU -03, Inverters and Transformer 11.

Activities this week Ahead.

Area 1 & 2 Electrical

- Install lighting surge protectors.
- Install CCTV cabinets to poles.
- Run CCTV data and power cables.
- Punch list close outs.

Area 1 & 2 Civil Works

- Continue 20mm aggregate stone install.
- Topsoil installation in retention pond and Swale.
- Seed and installation of matting in swale and pond.

- Close western fence line.
- Grouting activities.

Area 1 & 2 Mechanical Works

- Installation of pond barrier chain.
- Connection of control room tank and down pipes.
- Connection of tank water to control room toilet.
- Punch list items.

Commissioning Activities

- CATL - Cold commissioning works -Area 2.
- RMU 1, and 2 protection relay testing. (Integral Power)
- Commence Testing of HPO 5MW (3 days)
- Energise Core 7 & 8.
- Energise Core 5 & 6.
- Hot Commissioning -Cubes & PCS.
- Energisation of Core 3 & 4 (include Cubes & Inverters)

Construction

☐ Activities for week ending 05/11/2023

Area 1 Electrical

- Commenced isolation and testing works on Core 1, 2, 3, 4, and 5 for Glycol filling of Battery units.
- Completed all CAT6 cable loops from Core 1-5 OCTEs to Battery Cubes including terminations and testing.
- Area 1 Install 2 x 32amp power outlets on OCTE Cabinets.
- Area 1 Re-Instate Switchyard HV Terminations after testing.
- Commence HV Isolations.
- Additional Cat6 Ethernet cables run from RMU-01 relay (7SJ85) to – OCTE 01 Switch and terminated.
- Additional Cat6 Ethernet cables run from RMU-03relay (7SJ85) to – OCTE 11 Switch and terminated.

Area 2 Electrical

- Continued cube to cube cable install and terminations cores 6, 7 and 8.
- Area 2 * Install 2 x 32amp power outlets on OCTE Cabinets.
- Commence HV Isolations.
- Additional Cat6 Ethernet cables run from RMU-02relay (7SJ85) to – OCTE 08 Switch and terminated.
- Re-instate Transformer 11.

Area 1 & 2 Civil Works

- Area 1 & 2 Continue install and compaction of road base.
- Area 2 Excavate Pond overflow against western fence line.

Area 1 & 2 Mechanical Works

- Completed glycol filling of Area 1 Cores 1, 2, 3, 4 and 5.
- Area 1 fill and paint conduits.
- Close out works to go and punch list items.
- Re-instate Transformer 11.
- Installed lightning rods on control room.

Stage 2 Works

- Inspection by Dean O’Brion.

Commissioning Activities

- Assist Fluence with Scada Functional Checks.
- Aux Transformer CT test.
- IR testing of Busbar in Switch Yard.
- Completed earth switch functional tests in Switch Yard.
- Completed Interlocking test for HV Switchgear.
- Completed TG to Bess test to verify protection relays.

Activities this week Ahead.

Area 1 Electrical

- Install lights and terminate.

Area 2 Electrical

- Continue Cube to Cube LV cable install and terminations.
- Terminate data/ Fibre cables in OCTE cabinets.
- Install lights and terminate.
- Install CCTV data cables, power cables and cabinets.

Area 1 & 2 Civil Works

- Continue Install Road base in area 1 and 2.
- Continue 20mm aggregate stone install.
- Install 80 m3 of Topsoil in the Pond.
- Commence excavation in area 1 for Agline.

Area 1 & 2 Mechanical Works

- Complete all filling and painting of conduit risers.
- Install Tank bulkhead and overflow at control room.
- Run PVC tank overflow from tank to Agline trench.

- **Stage 2 Works**

- Install remaining underground cable markers.

Commissioning Activities

- Island Protection Settings with updated file.
- 1B1 Protection Panel Scheme Check.
- Protection Relay checks RMU-01, 02 and 03.
- Injection to Nexus meter, panel 1B2.
- Injection to Elspec meters, panel 1B2.

Construction

☐ Activities for week ending 10/12/2023

Area 1 & 2 Electrical

- Close out punch list items.
- Run Fibre and Power Cable to CCTV poles.
- Installation of CCTV Cabinets to Poles.
- Completed surge diverter installation to light poles.

Area 1 & 2 Civil Works

- Completed swale and pond barrier chain installation.
- Completed dissipater rock install on western fence line.
- Completed installation of step and gate on western fence line.
- Completed sleeper installation and western fence closure.
- Completed concrete driveway kerb.
- Continue with 20mm aggregate installation.

Area 1 & 2 Mechanical Works

- Close out punch list items.
- Completed storm water down pipe to water to tank installation.
- Completed water tank and pump installation.

☐ Activities this week Ahead.

Area 1 & 2 Electrical

- Complete Installation of CCTV cabinets to poles.
- Punch list close outs.

Area 1 & 2 Civil Works

- Complete 20mm aggregate stone install.
- Seed and installation of matting in swale and pond.
- Grouting activities.

Area 1 & 2 Mechanical Works

- Punch list items.

Construction

☐ Activities for week ending 12/11/2023

Area 1 Electrical

- Installed missing cable loops in the 1B1 Panel in the Control Room.
- Completed lighting install on poles.
- Completed stainless steel cable labels in battery cubes.
- Testing of fibre cables in OCTE cabinets area one.
- MC Area Walkdown.
- 22kV Switching Isolations placed.
- Punch list item close out.

Area 2 Electrical

- Completed cube to cube cable install and terminations cores 6, 7, 8, 9, 10 and 11.
- Completed fibre and data installation of OCTE Cabinets.
- Completed fibre and data testing.
- Commenced installation of lighting to poles.
- Disconnect Transformers 7, 8 and 11 for ETEL for re-testing.
- Completed glycol filling of Cores 6, 7 and 8, including ITR's.
- Re-instate Transformer 7 after ETEL testing.

Area 1 & 2 Civil Works

- Area 1 & 2 finalise install and compaction of road base.
- Commence agline excavation in area 1.

Area 1 & 2 Mechanical Works

- Area 1 fill and paint conduits.
- Close out works to go and punch list items.
- Remove and re-instate Transformer covers for Inspection of HV connections in area 1.
- Installed lightning rods on control room.
- Re-instate Transformer 7 after ETEL inspection.

Commissioning Activities

- Scheme checks and trip sequence testing on 1B1 Panel in Control Room test.
- 415V LV Incomer Circuit Breaker Test.
- Complete 1B1 Panel Green Line Mark Up.
- ETEL on site for Transformer 7, 8 and 11 Testing and Rectification Works.
- RMU - 01, 02 and 03 Trip Sequence Test.
- RMU - 01, 02 and 03 CT Primary Injection Test.
- Discharge Test - 110v DC.
- NOE 11: Energisation of 5 x 3 phase supplies to the Battery Cubes in Area 1.

- NOE 12: Energisation of 5 x 3 phase supplies to the OCTE cabinets in Area 1.
- NOE 13: Essential supply Control Room for Fire Indication Panel, A/C Unit, Air Conditioner Alarm.
- AEMO meeting held, and clarification of expectations confirmed:
 - o AEMO requires all SCADA actual points to be signed off by TG first
 - o AEMO is comfortable to do actual or simulation testing for site, provided that the TNSP has signed off all points.

☐ Activities this week Ahead.

Area 1 Electrical

- Test Lights in Area 1.
- AUX Load Power to Bess Switch Yard. (15/11/2023)

Area 2 Electrical

- P2P testing of Battery Cube Cables.
- P2P testing of OCTE Cables.
- Install lights and terminate.
- Install CCTV data cables, power cables and cabinets.
- Glycol filling of Core 9, 10 and 11.

Area 1 & 2 Civil Works

- Continue 20mm aggregate stone install.
- Complete excavation in area 1 for agline and tank overflow pipe.
- Commence excavation of agline in area 2.

Area 1 & 2 Mechanical Works

- Complete all filling and painting of conduit risers.
- Install Transformer Bund Valve and Filters.
- Punch list items.

- Stage 2 Works

- Punchlist Walkdown 14/11/2023 - AGL E4 PQM Panel Voltage Control Meter Installation.

Commissioning Activities

- Discharge Test - AC UPS.
- AC LV Step down Trf Cabinet.
- Cold Cx of Cubes (A1).

- Energisation of 22kV Line.

Construction

☐ Activities for week ending 17/12/2023

Area 1 & 2 Electrical

- Close out punch list items.
- Completed Fibre and Power Cable to CCTV poles.
- Completed installation of CCTV cabinets to Poles.
- Completed cores 6-9 coolant top ups.

Area 1 & 2 Civil Works

- 95% of 20mm aggregate installation.
- Close out punch list items.
- Completed concrete pour around generator conduits.
- Completed swale and pond seeding and matting installation.

Area 1 & 2 Mechanical Works

- Close out punch list items.

Commissioning Activities

- Elspec trouble shooting.
- Complete Inhibit loops on core 4 and 5 in area 1.
- Continue with Hot Commissioning tasks.
- Fire protection commissioning checks on cores 1-6.
- De-energise RMU-03.
- TransGrid outage.
- Systems testing.
- Investigate RMU feeder issue.
- F-Stop testing.

☐ Activities this week Ahead.

Area 1 & 2 Electrical

- Punch list close outs.

Area 1 & 2 Civil Works

- Complete 20mm aggregate stone install along fence line and pond and swale edge.
- Complete walkdown with AGL.
- Close out any punch list items.

Area 1 & 2 Mechanical Works

- Close out punch list items.

Commissioning Activities

- GPE Meta Run Meter
- Systems testing

Construction

☐ Activities for week ending 19/11/2023

Area 1 Electrical

- Test Lights in Area 1.

Area 2 Electrical

- Completed cube to cube cable P2P testing.
- Completed P2P testing of OCTE Cabinets.
- Completed glycol filling of Cores 6, 7,8 ,9 10 and 11.
- Completed installation of lighting to poles.
- Completed re-connect of Transformers 7, 8 and 11 for ETEL.
- Installed earth on Southern fence line.

Area 1 & 2 Civil Works

- Completed ag line excavation in area 1.
- Road base install around battery cubes area 2.
- Installed ag line in area 1.
- Installed tank overflow in area 1.
- Trench for Southern fence earth connection.

Area 1 & 2 Mechanical Works

- Completed area 1 fill and paint conduits.
- Closed out punch list items for Aux Load.
- Re-instate Transformer 7, 8 and 11 after ETEL inspection.
- QA document preparation for Area 2 – MC.

Commissioning Activities

- Energisation of Cubes & Inverter Aux Power in area 1.
- Discharge Test - AC UPS
- AC LV Step down Trf Cabinet.
- MC walkdown on Area 1&2 Lighting Towers.
- E4 PQM Panel Voltage Control Meter Installation Walk down (TransGrid)
- SCADA signal checks completed for all Area 1 BESS equipment.
- Issue NOE number 014 22kV Systems.
- Issued Notice of Energisation 015 Bess Lighting Towers.
- SCADA signal checks to commenced for all Area 2 BESS equipment.
- Completed cold commissioning of Cubes (A1). CATL

☐ Activities this week Ahead.

Area 2 Electrical

- Run CCTV data and power cables.
- Install CCTV cabinets to poles.
- Install cable ladder lids on battery pads.

Area 1 & 2 Civil Works

- Continue 20mm aggregate stone install.
- Commence excavation of ag line in area 2.
- Topsoil installation in retention pond.
- Dissipater installation on Western fence line.
- Close out punch list items.
- Mark out position of bollards.
- Grouting activities.

Area 1 & 2 Mechanical Works

- Complete all filling and painting of conduit risers' area 2.
- Install Transformer Bund Valve and Filters.
- Punch list items.

Commissioning Activities

- CATL - Cold commissioning works -Area 2.
- Master Fire Panel contractor to mobilise and commence configuration.
- SCADA - continue testing with TG.
- SCADA - arrange testing with AEMO.
- Approval from AEMO – Scada.

Construction

☐ Activities for week ending 22/10/2023

Area 1 Electrical

- Completed Earth Switch Cable terminations in Switch Yard.
- Completed Point to Point Testing in Switch Yard.
- Completed VT terminations in Switch Yard.
- Commenced data cable terminations in OTCE cabinets.
- Completed earth mat install in Switch Yard.
- Completed Fence post earthing in Switch Yard.

Area 2 Electrical

- Completed Inverter terminations.
- Completed OCTE terminations.
- Completed Transformer earthing to closure plates.
- Completed Transformer disconnection for transport.

Area 1 Civil Works

- Completed road base in Switch Yard up to FBL.
- Completed 20mm aggregate install in Switch Yard.
- Installed water meter inside Boundary.
- Installed water tap in area 1 on Eastern fence line.

Area 2 Civil Works

- Continued install of road base in area 2 up to FBL.
- Installed 2 x sewer risers for Essential Waters inspection pits.
- Completed install of opening Inspection Shaft to Sewer Line.

Area 1 & 2 Mechanical Works

- Completed Sunshade install in area 1.
- Continued with Sunshade install in area 2.

Stage 2 Works

- Completed DN250 pipe backfill.
- Completed install and backfill of DN250 pipe for pond overflow.
- Continued with low spot build up on 22kV corridors.

Commissioning Activities

- Trip Sequence verification of protection system.
- Primary Injection Test of 22kV Switchyard CTs.
- 22kV Switchyard Busbar IR & CR of cable termination points.
- RMU-01 / RMU-02 Circuit Breaker Test.
- RMU-03 / 415VAC Changeover INC. Circuit Breaker Test
-

☐ Activities this week Ahead.

Area 1 Electrical

- Terminate data/ Fibre cables in OCTE cabinets.

Area 2 Electrical

- Cube to Cube LV terminations.

Area 1 & 2 Civil Works

- Continue Install Road base in area 1 and 2.

Area 1 & 2 Mechanical Works

- Complete all Busduct connections.
- Complete cover installs of OCTE and Inverter Cabinets.

- **Stage 2 Works**
- Continue Rehabilitation works.
- Transmission line corridor, fill low spots and grade.

Commissioning Activities

- VLF test of 22kV Switchyard to RMU/Aux. Transformer cables.
- VLF test of 22kV Switchyard to TransGrid UGC.
- Secondary Earth Grid Test

Construction

☐ Activities for week ending 29/10/2023

Area 1 Electrical

- Completed install of two extra terminal blocks in Inverters.
- Closed out punch list items in Switch Yard.
- Continued data cable terminations in OTCE cabinets.
- Commenced isolation and testing works on Core 1 and 2 for Glycol filling of Battery units.
- Assist with the RMU-01, 02 and 03 breaker tests.

Area 2 Electrical

- Completed Inverter additional terminal blocks in Inverters.
- Commenced cube to cube cable install.
- Completed install of red warning beacons on Battery Cubes.
- Completed P2P testing of Inverter cables and ITR paperwork.
- Completed earthing of Busducts and Transformers.

Area 1 Civil Works

- Continued road base up to FBL.
- Completed Switch Yard Fence.

Area 2 Civil Works

- Continued install of road base in area two up to FBL.
- Completed Pond Excavation.
- Commenced Swale Excavation.

Area 1 & 2 Mechanical Works

- Completed Sunshade install in area one.
- Completed Sunshade install in area two.
- Completed Glycol fill of Core 1 Batteries.
- Commenced Glycol fill of Core 2 50% complete.
- Closed out punch list items in Switch Yard.
- Area 2 * Re-instate Transformer cover plates and torque.

Stage 2 Works

- Trim profile with Grader along 22kV corridor.
- Install road base on DR 19 road.
- Finalise spreading of seed bank and water in 22kV corridor.
- Bolt and Ductor test 22kV cables in TransGrid Yard.

- Heat Shrink cable screens.
- Grout 6 x 200mm conduits.
- Remove scaffold from TransGrid Yard.
- Install underground cable markers.
- Re-instate wire fence to TransGrid.

Commissioning Activities

- Completed Touch Potential and Earth Grid test, Bess to TransGrid.
- Completed Glycol filling of Inverters.
- Completed breaker testing on RMU-01, 02 and 03.
- Scada functional tests in Control Room.
- 1B1 ABB RED670 Relay - Channel Mapping.
- Submitted Switching program to AGL/TransGrid for review.

Activities this week Ahead.

Area 1 Electrical

- Terminate data/ Fibre cables in OCTE cabinets.
- Close out any punch list items.
- Assist with Isolations and testing for Glycol fill.
- Install outdoor 32amp power socket on OCTE cabinets.

Area 2 Electrical

- Cube to Cube LV cable install and terminations.
- Terminate data/ Fibre cables in OCTE cabinets.
- Re-instate Transformer 11.
- Install outdoor 32amp power socket on OCTE cabinets.

Area 1 & 2 Civil Works

- Continue Install Road base in area 1 and 2.
- Continue 20mm aggregate stone install.
- Excavate for pond overflow pipes.
- Install 80 m3 of Topsoil in the Pond.
- Commence excavation in area one for Agline.

Area 1 & 2 Mechanical Works

- Re-instate Transformer 11.
- Complete all filling and painting of conduit risers.
- Install Tank bulkhead and overflow at control room.
- Install lightning rods on control room.

- **Stage 2 Works**
- Rehabilitation Inspection.

Commissioning Activities

- Aux Transformer CT test.
- IR testing of Busbar in Switch Yard.
- High Pot test of Busbar in Switch Yard.
- Interlocking test for HV Switchgear.
- TG Test required to verify protection relays.



AGL – Broken Hill BESS Project

Out of Hours Construction Work Bi-Monthly Report



Appendix B2 – Construction Progress – 26th October – 17th December

BESS Main Equipment Description Progress Register				MONTHLY	Month of DEC 2023
		Area #1	Comments	Area #2	Comments
Transformers		6 # Total		6 # Total	
	Slabs Complete	6 no 100%	Complete	6 no 100%	Complete
	Equipment placed	6no 100%	Complete	6 no 100%	Complete
	Mech complete	100%	Complete	100%	Complete
	Elec Complete	100%	Complete	100%	Complete
Invertors		20 # Total		24 # Total	
	Slabs Complete	5 no 100%	Complete	5 no 100%	Complete
	Equipment placed	20 no 100%	Complete	20 no 100%	Complete
	Mech complete	100%	Complete	100%	Complete
	Elec Complete	20 no 100%	Complete	20 no 100%	Complete
Battery Cubes		40 # Total		48 # Total	
	Slabs Complete	10 no 100%	Complete	12 no 100%	Complete



AGL – Broken Hill BESS Project
Out of Hours Construction Work Bi-Monthly Report



	Equipment placed	24 no 100%	Complete	100%	Complete
	Mech complete	100%	Complete	100%	Complete
	Elec Complete	100%	Complete	100%	Complete
OCTE		5 # Total		6 # Total	
	Slabs Complete	100%	Complete	100%	Complete
	Equipment placed	5 no 100%	Complete	100%	Complete
	Mech complete	100%	Complete	100%	Complete
	Elec Complete	100%	Complete	100%	Complete

APPENDIX C – COMPLAINTS REGISTER

AIR Event No.	Date Reported	Complainant Source	Complaint Type and Detail	Corrective Action(s)	Responsible Person(s)	Actions Due Date	Actions Closed Date
			NIL				



AGL – Broken Hill BESS Project
Out of Hours Construction Work Bi-Monthly Report


