CASE STUDY

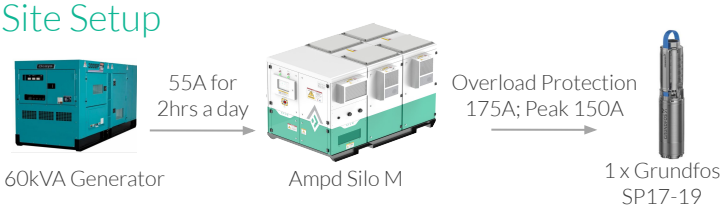
Sustainable savings in powering Submersible Bore Pumps

Australia
Mining Applications

Introduction & Project Information

- **Project location:** Australia
- **Project type:** Mining Applications
- **Delivery date:** Oct 2024
- **Loads:** 1 x Submersible Borehole Pump
- **Model:** Silo M
- **Input current to the Silo**: 55 amps

Site Setup



Equipment	Quantity	Load (A)	Total Loading (A)
Submersible Borehole Pump Grundfos SP17-19	1	L1: 122 A L2: 130 A L3: 134 A Starting Current	134 A

Figure 1. 'Block' diagram of the connection between the utility, Silo and the loads.

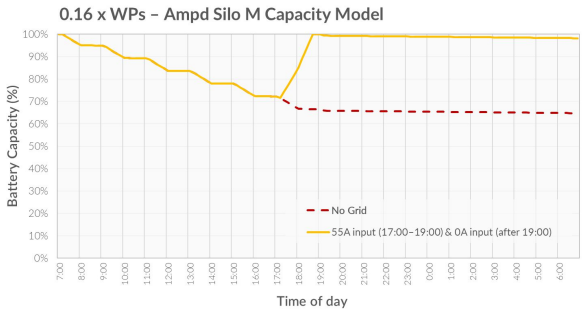


Figure 2. Performance metrics for the Silo M in 1 day

Results

"The startup current of a submersible bore pump motor is 6 times the running current. A diesel generator is typically oversized by a factor of 6 or more to power the submersible pump. All diesel engines must be run above 40% loading to allow for complete fuel combustion, and operation of engine at the correct cylinder temperatures.
To address these challenges, an Ampd Silo, an advanced, compact and connected battery energy storage system (ESS), was used to replace a large diesel generator to support a submersible bore pump for mining applications. Without grid access, a 60 kVA Genset was used to recharge the Silo. The battery and generator operate seamlessly, providing consistent, highly efficient power. The generator was programmed to automatically start and stop for charging, allowing the ESS to manage load demand effectively."

- 325 tonnes of carbon emissions saved[1] (vs. 1 X 100 kVA generator)
- 54% lower OPEX[2] (vs. 1 X 100 kVA generator)
- 30 times quieter than a generator
- Daily battery level expected to remain above 70% throughout the project

[1] Assuming a CO_2 emission intensity of 2.64 kg per litre.
[2] Assuming a diesel price of AUD$2.0 per litre.