

Success story | Leaflet

Ernest Henry Mine, Australia

Ensuring grid code compliance for mining facility

Efficient utilization of electric power and compliance to grid code are some of the major challenges for any mining and minerals facility. Hitachi Energy's ABBACUS metal-enclosed capacitor banks help them meet these challenges.



Customer profile and challenge

Ernest Henry Mine, Located in north-west Queensland, is a Copper and Gold extraction and processing facility. Operational since 1998, it is a part of the integrated metals business of Glencore, a leading mining & minerals company in Australia.

At Ernest Henry Mine, crushed ore from the underground mine is processed on-site to produce Copper concentrate. This operation deploys up to 1200 meters of overland and below surface conveyors that transport this crushed ore for processing.

The motors operating these conveyors are potential sources of power quality issues. During operation, they can draw high reactive power and generate harmonic pollution in the network. This, in turn, can decrease plant productivity and put excessive stress on electrical equipment, risking their premature failure.

Power quality issues at mining facility can also spread to other consumers connected with the power distribution network, inducing further energy losses. Therefore, the distribution utility can impose penalties on the mining facilities in such a case.



ABBACUS metal enclosed capacitor bank installed at Ernest Henry Mine, Australia

Solution

In 1997, Ernest Henry Mine installed Power Grids' metal enclosed capacitor bank as a solution to mitigate power quality issues. The solution improved the power factor of the mining facility, by compensating reactive power demand of motors to the value defined by utility. With this metal enclosed capacitor bank, the mining facility avoided penalties from utility and ensured reliability and efficiency of the mining operations.

After 20 years, at the end of its life, this power quality solution has been replaced by the new ABBACUS-E series metal enclosed capacitor bank. ABBACUS-E from Hitachi Energy is a compact and modular solution, which automatically compensates reactive power demand in network to maintain power factor to a pre-set level. It can also filter out harmonics to a specific level.

Technical data

Parameter	Value
Year of installation	2020
Type of product	ABBACUS metal-enclosed capacitor banks
Number of units	2
Output capacity	2 x 2.5 Mvar
Voltage	11 kV
Frequency	50 Hz

With the new power quality solution, Ernest Henry Mining can continue to operate with a high-power factor and avoid being exposed to the costs of poor power quality for many more years to come.

Metal enclosed capacitor bank ensuring efficiency and grid code compliance for Australian Copper Mine



Replacement after 20 years of successful operation



ABBACUS metal-enclosed capacitor banks For Ernest Henry Mining, Cloncurry, Australia

The solution will



Eliminate penalties from utility



Increase operational efficiency



Assured equipment reliability

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