

Success story | Leaflet

Arab Shipbuilding and Repair Yard, Bahrain

ABBACUS for stronger, smarter and greener network

Hitachi Energy's power quality solution enables efficient and stable operation for one of the busiest shipbuilding and repair yard in the Gulf region.



Customer profile and challenge

Established in 1977 in Al Hidd, Bahrain, Arab Shipbuilding and Repair Yard (ASRY) is a leading maritime repair and fabrication facility operating in the Arabian Gulf. The yard has facilities including a fabrication area of more than 250,000 square meters (m²), a dry dock of 500,000 deadweight tonnage (dwt) capacity, 15 repair berths, two floating docks and a full range of workshops and service centers to cater servicing and repair needs for any type of vessel.

Electrical loads at such a shipyard, mainly motors, variable frequency drives (VFDs) and the welding equipment at fabrication area, can disrupt the quality of electric power. These loads are a major cause of high reactive power demand and harmonic pollution in the power network. Such disruptions in power quality have the potential to affect other equipment at the facility, as well as the supply network of the utility. In addition, they can lead to increased energy losses in equipment like feeding transformers and cables, potentially resulting in a higher CO₂ footprint of the facility and its operations. Therefore, utilities impose penalties on customers having poor power quality.

ASRY was also facing similar penalties, mainly due to poor power factor.



ABBACUS metal enclosed capacitor bank installed at Arab Shipbuilding and Repair Yard, Bahrain

Solutions

Hitachi Energy has partnered with Al Bait, a leading Engineering Procurement and Construction (EPC) company in Bahrain, to supply its ABBACUS metal-enclosed capacitor banks for the ASRY shipyard. The compact, 'plug-and-play' power quality solution is ideal for installation in any industrial facility in small spaces and offers fixed or switched power factor compensation.

ABBACUS is a modular, fully metal-enclosed capacitor bank, available with a range of enclosures that suit customer requirement. With an integrated design of primary and secondary equipment, it can be installed, commissioned and operated quite easily. ABBACUS can compensate the network power factor to a pre-set value in its controller. Also, it can provide limited harmonic filtering through detuned reactors. Complete enclosure of all live parts, reliable interlock and unique arc-fault mitigation make ABBACUS an extremely safe-to-use solution.

Technical data

Parameter	Value
Year of installation	2020
Type of product	ABBACUS metal-enclosed capacitor banks
Number of units	1 + 1
Output capacity	1500 x 2250 kvar
Voltage	11 kV
Frequency	50 Hz

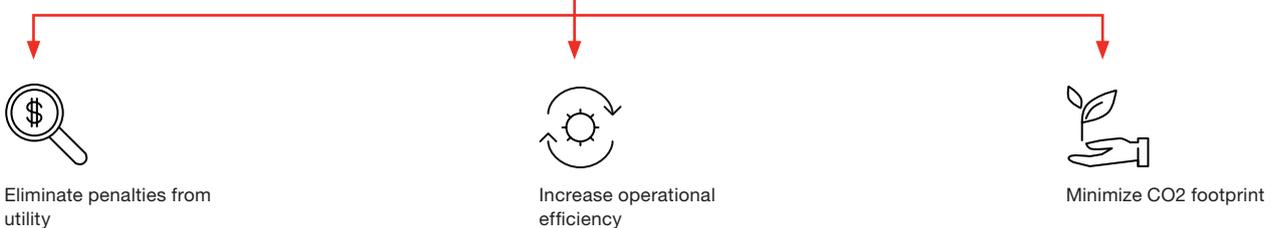
Using ABBACUS metal-enclosed capacitor banks, ASRY is able to improve its power factor, thereby avoiding penalties, improving efficiency of operations and reducing CO2 emissions.

Power quality solution for one of the busiest shipyards in Arabian Gulf region



ABBACUS metal-enclosed capacitor banks For Arab Shipbuilding and Repair Yard (ASRY) Al Hidd, Bahrain

The solution will



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