Vycon REGEN® System for Rubber-Tired Gantry Cranes

Technology Manufacturer
VYCON Energy

Co-Participants
Port of Los Angeles, Port of Long Beach, South Coast Air Quality Management District, California Air Resources Board, ITS, Evergreen and VYCON

Project Objective

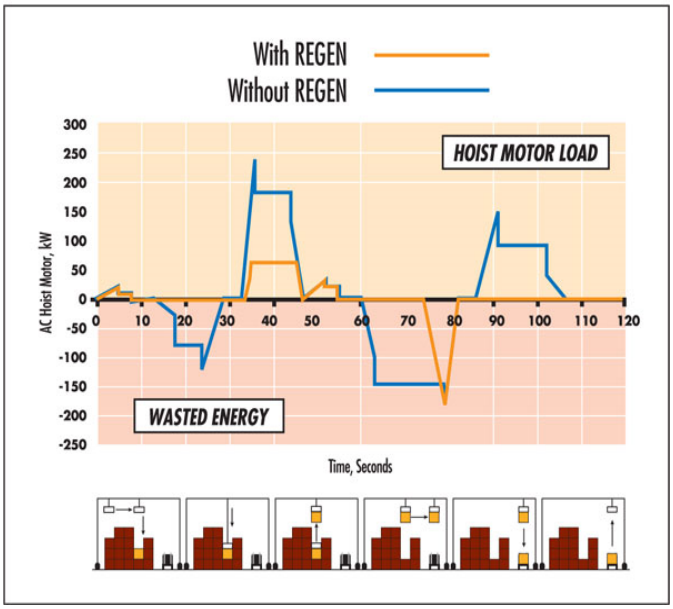
The project objective was to evaluate the benefits of VYCON's REGEN system in rubber tire gantry (RTG) cranes at two marine terminals: ITS in the Port of Long Beach and Evergreen in the Port of Los Angeles.

Technology Description

VYCON's REGEN system is an energy storage system that is also capable of supplying the stored energy on demand.

The REGEN system is re-charged each time the AC motor in the hoist regenerates power (i.e., on the down cycle). This stored energy is then quickly released back to the AC motors during the "up" cycle, resulting in increased efficiency during each lift cycle. The transitions are seamless and instantaneous. This conserves energy, increases fuel efficiency, and reduces emissions as well as operating costs. The REGEN System can be retrofitted onto in-use cranes or installed at the factory as part of a new crane.

Typical Load Profile vs. Load Profile with REGEN



Results

VYCON received its Level 1 CARB verification in October, 2007.

Benefits

VYCON's REGEN system is verified to reduce particulate matter (PM) emissions by a minimum of 25 percent and is estimated to reduce oxides of nitrogen (NO_x) emissions by 30 percent. Emissions of carbon dioxide (CO2) are estimated to be reduced by about 30 percent, resulting from the associated reduction in diesel fuel consumption up to 35 percent.

Project Costs

The TAP supported the VYCON verification effort by co-funding emissions testing of the project equipment. Each Port committed $11,500 for a total cost of $23,000.

Updated: April, 2010.