

Leading Transit Agency Uses PACSystems™ Solutions to Achieve Energy Efficiency Certification

RESULTS

- Won premium certification by governmental green building council and set new standards for energy sustainability for all metro rails in the country
- Central monitoring of all stations and buildings allows fast, easy optimization and action
- PACSystems intelligent trends and insights pinpoint abnormal energy consumption in real time, allowing an early warning system for equipment failure and immediate operations improvement



APPLICATION

Energy management for civic transportation

CUSTOMER

Metro transit rail

CHALLENGE

The transit rail agency provides a metro railway network in a major city in India. There are typically 2 million riders per day across a 200+ mile network. The agency continuously strives to achieve sustainable energy, meet government mandates and reduce energy costs throughout the system. In order to achieve these goals, it needed to control and visualize energy data from all of its high energy consuming subsystems, such as escalators, elevators, and electrical and mechanical devices like pumps and HVAC systems. It also needed to be able to rapidly measure and compare energy consumption metrics across the fleet in order to provide immediate actionable energy conservation insights.

SOLUTION

The agency selected Emerson to assist in optimizing the control infrastructure of its network in order to achieve the first-of-its-kind energy management solution in the country. Emerson provided a total engineering solution across 21 underground stations. The project scope included design, implementation, commissioning and programming for the control and instrument solution.

Monitoring real-time energy consumption and comparing it across stations enables detection of anomalies early and allows immediate corrective action to keep consumption in check.

Energy meters were installed at all monitored machinery and data is routed to PACSystems RX3i PLCs. The data collected from individual machinery is displayed on dashboards located at each station, as well as at a central energy monitoring control room. The centralized data allows comparison of energy consumption from similar equipment and machinery in different stations. In addition, the system performs complex calculations to determine abnormal energy usage and displays it in a graphical “heat map” format. This ability to monitor real-time energy and compare it across stations helps the agency detect anomalies early and take corrective action to keep consumption in check. In addition, the trends and analysis allow operators to keep a digital log of equipment health, manage equipment warranty benefits, detect equipment failures early, and make operational changes to further reduce power consumption. The PACSystems single-point solution helps the agency meet sustainability targets and allows continuous improvement of energy efficiency throughout the metro rail operation.

RESOURCES

PACSystems Industrial Edge Software and Solutions

www.Emerson.com/en-us/automation/control-and-safety-systems/programmable-automation-control-systems/industrial-edge-software-solutions

PACSystems Programmable Automation Controllers

www.Emerson.com/en-us/automation/control-and-safety-systems/programmable-automation-control-systems/programmable-automation-controllers/large-controllers



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