



LONWORKS® Demonstrates Watts New in Energy Conservation

During 2001, California consumers and businesses came to learn that electricity is a finite commodity. The threat of increasing blackouts generated frantic searches for ways to cut usage. Many ideas were abandoned as too harsh. Did conservation have to be so arduous? An innovative program sponsored by Southern California Edison incorporating Echelon LONWORKS technology proves that conservation can be truly painless.

Just Say, "Charge It"

Electric vehicles including forklifts used in warehousing, food processing, and other industrial facilities as well as thousands of golf carts recharge their batteries daily—commonly during regular working hours when demand for electricity is greatest. "It became apparent that many customers could conveniently and easily shift their battery charging to off-peak times if they had the proper control equipment," says Dick Cromie, Program Manager with Southern California Edison. SCE realized that if it could shift the recharging of just 3 to 5 percent of the estimated 70,000 such vehicles within its territory to off-peak hours, the utility could reduce peak loads by 8 megawatts.



SCE applied to the California Energy Commission (CEC) in June 2001, proposing a program to reduce industrial electric vehicle on-peak charging loads. Under the program, funded by the State of California, companies that installed energy management equipment on their battery charging systems would be paid up to \$150 per kilowatt (kW) if they shifted from on-peak to off-peak weekdays during the 2002 summer months.

Developing the charger management solution for the Peak Load Reduction Program (PLRP) was a joint effort between SCE's Electric Transportation Division and several industry trade allies, including VaCom Technologies, an Open Systems Alliance member and Echelon Authorized Network Integrator located in La Verne, California.

Charging Ahead

VaCom recommended using controls based on LONWORKS open technology and using LONMARK® certified products. The systems would have built-in compliance and override verification plus Internet or phone line communications options. In addition, a LONWORKS network would not require expensive, custom coding that could take months to create. Doug Scott, president of VaCom, points to another, longer-term

benefit of the program. "An open system could also be viewed as a starting point for additional energy management control within these same businesses; the core of an energy efficiency infrastructure building block that could be expanded over time, saving even more energy in the future."

Charged Up and Ready to Go

VaCom named their technology solution the Battery Charger Control Panel (BCCP). The BCCP system is compact and self-contained. All required control, remote monitoring capability, and power switching devices are included in one simple-to-install package, completely pre-wired and pre-programmed.

The size and configuration of BCCP installations vary based on individual requirements. However, each BCCP installation consists of one or more of Echelon's LonPoint DIO-10 input/output modules, which monitor current flow and control the battery charger relays; a LonPoint SCH-10 scheduler, which works like a timer; LonPoint DL-10 data logger that provides a history of on/off cycles and power usage; Echelon SLTA serial adapter for dialup connectivity; an i.LON 1000 for Internet connectivity; and WattNode and Veris kWh LONWORKS power meters.



Leading the Charge for Conservation

The BCCP program was an immediate success with businesses. Over half of all firms contacted signed up. As of March 2002, more than 50 companies have agreed to participate. "The return on investment for these companies is excellent with up to \$500 savings per vehicle per year," says Scott.

The expectations for this effort have been truly met and exceeded. "This program has opened everyone's eyes to potential energy cost savings for vehicle battery charging, and shown what a win-win proposition it really is," adds Cromie.

Key Benefits

- Businesses realize energy cost savings and rapid ROI
- Utility reduces chance of black-outs, lowers need for new generating capacity
- Easy installation with pre-packaged system