Alternative Energy & Energy Efficiency: Co-Tenants in Commercial Real Estate

By: Paul Savage, *CEO Nextek Power Systems, Inc.*

Detroit, MI - Building operators investigating on-site power generation – or Distributed Generation (DG) - quickly discover that energy efficiency measures need to come first for the economics to work. Imagine putting up solar panels only to use the precious output to operate inefficient incandescent light bulbs: it just doesn't make sense.

This logic is what's driving a new concept in power distribution and integration that is embodied in a growing family of products that take advantage of installing direct current (DC) microgrids in buildings. The benefit of putting DC circuits in buildings is simple to grasp on the one hand, but has astonishing implications on the other. It's a strategy that is improving the efficiency of building operation 24/7, while providing an additional boost to renewable DG and battery storage - and there are examples right here in Michigan.

Automation Alley's headquarters in Troy was the first site in the state to tie their solar PV to a grid-connected DC lighting system and battery back-up in 2006. That system was invented by Nextek Power Systems, Inc., a tenant at the NextEnergy Center in Detroit's TechTown, only a few blocks away from where Henry Ford became the largest automobile manufacturer in the world at the Piquette Street plant. Since the Automation Alley installation, Nextek has teamed up with building products and services leaders Armstrong World Industries, Johnson Controls, OSRAM Sylvania, and WAVE to found the EMerge Alliance, a non-profit organization that promotes DC power standards in commercial buildings across North America with an eye on setting global DC power standards in the future.

A nominee for the 2010 World Technology Award for Energy, Nextek's technology exploits the natural characteristics of DC power as the currency for sources and loads. Solar PV panels produce it, batteries store it, and everything electronic uses it, and yet most of the power systems in the world only accommodate it, through the use of the ubiquitous power converter that loses energy as heat. Nextek Power Systems Direct Coupling® power products are optimized around DC power so as to avoid unnecessary conversions between the AC we buy from the utility and on site power buildings are more and more often producing.

This effort resonates with Dearborn's Ford Land, the global operator of Ford Motor Company's property portfolio. In their current renovation of the Michigan Assembly Plant (M.A.P.) in Wayne, Armstrong's DC FlexZone™ ceiling product in the entrance lobby is actually conducting DC power from Nextek's power server to LED lighting technology from OSRAM Sylvania. Maintenance costs for the LED fixtures is expected be lower, due to the longer life of the light source and the low voltage drivers that power them.

Another industrial giant, Milwaukee-based Johnson Controls Incorporated (JCI) who installed the innovative ceiling system in their headquarters last month, shares this enthusiasm. "We liked the idea so much, we joined the club," states JCI Building Services President Bruce Graham, referring to his role as a Founding Governing Member of the EMerge Alliance. JCI's manufacturing and services business spans automotive, battery storage, HVAC, and of course controls. "DC microgrids fit our agenda in so many ways, becoming an early adopter just made sense," Graham said. Johnson Controls has been a leader in efficiency, building optimization and comfort for decades.

Ford Land and EMerge Alliance members Nextek, Armstrong, OSRAM and JCI are creating awareness around new technologies in markets long dominated by offerings without much differentiation. Despite the sluggish real estate market, over 60 organizations have joined the EMerge Alliance since its founding two years ago which is evidence that this integrated approach to power management, energy efficiency, energy storage and renewable power use in commercial buildings has taken solid root.

CONTACT:
Nextek Power Systems
Paul Savage (313) 887-1321
paul.savage@nextekpower.com

Johnson Controls, Inc.
Bruce Graham (630) 990-3646
bruce.graham@jci.com

EMerge Alliance
Kevin Schader (925) 275-6672
kschader@inventures.com