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New EnerNOC software creates remote ‘presence’ for DR

IM-like software enhances existing C&I DR service

Big C&I-oriented DR firm EnerNOC has new PowerTalk software that’s installed and “working extremely smoothly” at over 250 C&I customer sites in the US. The software adds efficiency to EnerNOC’s remote DR service -- offering real-time, two-way communication similar to instant messaging (IM), EnerNOC President and Co-Founder David Brewster told us yesterday.

“In the past, we had to poll our devices from our central operations center. We had to reach out and ping all devices every five minutes to get the data” on how much power was used in the previous five minutes, Brewster explained. That required penetrating the customer’s firewall every five minutes.

“Now, with PowerTalk, we have intelligence on the device that is pushing data to our [NOC](#) from the customer’s network -- following a sort of handshake,” he added. “Then, a two-way communication channel is up and running and the concept of presence is established. Connectivity is being established from within the firewall. It’s just as secure as if someone is sending an instant message to a trusted friend.”

That adds up to real-time notices of device status changes.

“It enables us to much more dynamically and actively manage our resources,” Brewster said, noting that dispatches from DR customers can be responded to in minutes or seconds.

We and perhaps other’s that cover the

smart grid haven’t given C&I-style DR much coverage in the past as a smart grid story -- maybe because it seemed to be a specialized service sold contract-by-contract and that wasn’t much connected with the utility networks that are the nerve centers of the smart grid. But wait. Big C&I DR is more important than ever as utilities grapple with forecasts of ballooning demand and looming CO2 emissions limits. Thus C&I DR is as “smart grid” as any smart thermostat that turns down the air conditioning on a home -- and maybe much more important.

Through its own NOC, EnerNOC remotely manages and cuts power use at

supermarkets, hospitals, data centers and other C&I customer sites it aggregates once it has a DR contract in hand from a utility or a grid operator. Those firms use a lot of electricity -- and may have lots to spare.

A supermarket, for example, will continue to sell groceries while EnerNOC cuts the lights by 40% in its shopping space. Meanwhile, EnerNOC can turn off anti-sweat devices on refrigerated cases inside the market.

EnerNOC can make 100 kw of demand disappear in the supermarket for as long as it is dispatched by the utility. “And if we do that across 500

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Concord townsfolk OK \$4.5 million budget for smart grid

It’s not the shot heard round the world, but Concord’s smart grid plans are among the first in New England. Residents of Concord, Mass, voted 200-55 at a town meeting in favor of a smart grid plan from the Concord Municipal Light Plant, reported [WickedLocal.com](#)’s Concord edition, the online presence of weekly newspaper the *Concord Journal*.

The plan is to issue \$4.5 million in bonds or notes to be repaid from utility revenues -- to design, purchase and install the smart grid system.

According to the utility, the system would be an “open, multi-vendor digital infrastructure for managing electric power networks from generation to

distribution to consumer,” featuring advanced sensors and controls at the utility, on transformers and in consumers’ homes, said the report.

The Light Plant as locals call it gave a presentation at the meeting forecasting a budget breakdown of \$2.1 million for construction and labor; \$1.75 million for materials and systems; \$150,000 for engineering services; \$200,000 to replace existing brand equipment, and \$300,000 budgeted for contingency.

Massachusetts communities of Chicopee, Marblehead and Westfield were also reportedly discussing smart grid deployments, said the report.

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Comverge’s Apollo links load controls to utility back office

With the release of its Apollo system, DR firm Comverge could be driving a much-needed upgrade to the smart-grid IT backbone. The firm’s software links home digital control units, smart thermostats and smart meters to utility IT back-ends -- at eight US utilities and other businesses, an equity research analyst told us.

“It’s an event of moderate significance” that could be compared to, perhaps, the first inklings of Perestroika,

said Michael Carboy of Signal Hill Capital Group in a recent interview.

“I haven’t seen any solid, integrated platforms that are able to link easily to [utility] back offices, to give back offices the controls they need” of smart meters, said Carboy. “The early implementations done in the demand-response world were custom code that would run from the back office and control end devices in an almost Soviet way. They offer no bilateral

exchange of information. They’re not web-based. This is web-based.”

Comverge reported it was releasing its Apollo system a few weeks back, calling it “an enterprise class, 100% web-based application, designed to provide a platform for advanced demand management applications as well as future Comverge software applications.”

Comverge CTO Bud Vos told the press that the app “represents a defining

step forward for the demand response industry.”

While the firm didn't report winning new contracts or nailing down hard-won revenues at the time, its news constituted a “step in the right direction,” said Carboy, who noted that neither he nor Signal Hill holds Comverge shares. Carboy also isn't paid to provide research coverage for Comverge and Signal Hill doesn't do investment banking with the firm, he noted.

Apollo “represents a degree of functionality” that any smart grid technology vendor needs to be credible, he added. That means providing a suite of hardware and software so utilities have something to work with.

“Philosophically, as we consider the smart grid, we need to understand the willingness of the utilities to overhaul their IT back offices -- to enable the smart grid from their side of the world. I've seen a lot of chest-beating about smart meters but I don't see anybody really addressing the IT back office hairball that exists at most utilities.”

Comverge seems to be having some success in its effort to make itself indispensable in the emerging smart grid industry.

DR player EnerNOC (see unrelated story this issue), for example, is often mentioned in the same breath as Comverge. But, Carboy said, utilities

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supermarkets, it has a meaningful impact on overall demand within the region,” Brewster noted.

PowerTalk is the “first application of XMPP [Extensible Messaging and Presence Protocol] to the electric power industry,” he added. XMPP is an open technology for real-time communication that powers a wide range of applications including instant messaging, presence, multi-party chat, voice and video calls, collaboration, lightweight middleware, content syndication and generalized routing of XML data, explained XMPP.org.

Amperion teams with MuNet for end-to-end system

A pair of Massachusetts-based vendors, Amperion and MuNet, will provide a unified smart grid solution for electric municipalities and cooperatives, said Amperion today.

Specifically, they will sell MuNet's smart metering and DR over Amperion's communications infrastructure using open-standard IP protocols, meaning devices from other vendors will be supported.

The end-to-end solution includes smart meters, a communications network and back-end software applications for metering, demand response and network monitoring and management, said Amperion. The system was designed to be flexible and

scalable with various service options including engineering design services, installation services and maintenance support.

A potential benefit for municipalities and co-ops is the solution's “being future-ready for additional applications such as HAN and broadband data and voice,” said Amperion CEO Nachum Sadan. MuNet's WebGate AMI solution is built around standards-based communications technologies including IP and ZigBee (802.15.4), thus letting utilities use IP-based communications infrastructure assets for AMI and smart grid applications.

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“can not affect the turning on and turning off of equipment without Comverge being part of the picture.”

Apollo represents “an essential part of the evolution to what the smart grid truly will be” -- when utilities have upgraded IT systems, despite a widespread rate-base system that is turning previous infrastructure investments into “stranded assets,” and when mechanisms are installed in homes to “act as nexus point

for the control of energy loads,” said Carboy.

Before firms such as Comverge and EnerNOC can make any real headway, utility managers have to move away from the model of selling megawatts and states need to legislate “time-of-use” tariffs for energy use, said Carboy. Such tariffs, he predicted, will take a couple of years to debate and a couple of years to phase in.

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EnerNOC layers the PowerTalk software on top of commercially available hardware and has been developing the software in-house since 2007.

“The smart grid is all about leveraging real-time data to take action to make the electric power grid more reliable and efficient,” said Brewster. “We think PowerTalk is a very powerful smart grid technology because it applies the concept of presence to the smart grid.”

EnerNOC is based in Boston, has about 5,000 commercial, institutional and industrial customer sites in 30+ states. The firm will include PowerTalk in most of its installments going forward,

Brewster reported. “It could be leveraged for a lot more applications” such as outage detection and voltage management, plus SCADA-equivalent feeds into utility control rooms, he added.

EnerNOC has been making its presence known among industry-watchers.

After the firm landed several DR customers this spring, wrote Mark Barnett recently. He's an associate stock analyst with Morningstar. EnerNOC firmly established its presence, albeit in an emerging industry, he added.

Morningstar was “impressed by the company's dominance in winning new contracts” Barnett wrote April 17. Still, he noted, “it is far too early to bank of the long-term success of any one player in this young industry.”

Indeed, as we reported yesterday, CPower recently gathered about \$11 million to help it expand DR services, putting it in roughly the same league as EnerNOC, and Comverge (see unrelated story this issue), measured by power under management (SGT, [Apr-30](#)). As CPower was making its announcement Wednesday, EnerNOC was

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formally proposing that XMPP become a standard protocol in the US.

“Smart grid standards are getting defined as we speak,” said Brewster, referring to roadmap discussions that EPRI and NIST held in Virginia. “XMPP should be looked at as viable for the smart grid” since it is an open-source, nonproprietary, secure, standards-based communication protocol. “It checks all the boxes for smart grid and will allow for interoperability.”

BOTTOM LINE: That description of XMPP helped put EnerNOC’s news into focus for us. We use remote

“presence” in the virtual offices that produce *Smart Grid Today* for remote computer tech-support plus IM, VOIP and occasionally video chat, so we are well aware of the value the internet-based remote presence can offer an operation like ours. The idea of the smart grid benefiting from that virtual presence isn’t new or surprising, it’s just fun to hear about a protocol used for such services being used to enhance the smart grid -- and we will keep a keen eye out for news about any advances in XMPP and related protocols being used for smart grid.

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UK study finds 700,000 local jobs ride on smart grid investment

A £15 billion (\$22.2 billion) investment by the United Kingdom for broadband, smart grids and transport management systems would provide greater economic stimulus than spending on roads and bridges, said a London School of Economics (LSE) study released this week.

The roll-out of digital networks capable of cutting energy use, limiting congestion and boosting telecommuting could help the UK create and keep 700,000 jobs while delivering deep cuts in carbon emissions, said “The UK’s Digital Road to Recovery,” the report on the joint study by LSE with the Information Technology & Innovation Fund.

The report was funded by IBM and modeled the likely economic impact of such investment in broadband networks, smart grid technologies and intelligent transport systems such as congestion management infrastructure.

A £5 billion (US\$7.4 billion) investment for smart grid systems would create or retain an estimated 235,000 jobs while equal investments in broadband and intelligent transport would create or keep 280,000 and 188,000 jobs, respectively.

The report came a week after chancellor Alistair Darling pledged to invest £10 billion (\$14.8 billion) to improve the UK’s broadband networks. While the new spending was welcomed by the authors, they believe similar funding is needed for smart grid and intelligent transport.

“We know that smart grids capable of better managing peaks and troughs

in energy demand are essential if we are to connect variable renewable energy to the grid,” co-author Patrik Karrberg told BusinessGreen.com. “While new intelligent transport networks, such as systems being trialed in Sweden that change traffic lights as buses approach to give them priority, are one of the best ways of getting more people on to public transport.”

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1 story in 30 seconds

NPR uncovers utility

worries on smart grid: Proponents of a smart grid are enthusiastic but the utilities that will do the heavy lifting tend to be more conservative in their outlook, said a report yesterday on Morning Edition, a syndicated radio program from National Public Radio (NPR). The report was number seven in a 10-part series on the changing electric industry. “The utilities are concerned they will not be able to collect all the money,” Ahmad Faruqi, an economist with

utility consultant firm Brattle Group, told NPR. Keeping the lights on with great reliability “doesn’t have the same kind of sex appeal as new technologies and new ‘golly-gee-whiz’ -- whether it’s a new computer software program or a new computer itself,” said David Ratcliffe, CEO of Southern Company in Atlanta. The utilities are worried about replacing lots of meters that have many years of life left in them and that have yet to be amortized, said the report.

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Abbreviations: To see a glossary of *Smart Grid Today*’s abbreviations, go to www.smartgridtoday.com/glossary.

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