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M2M networking firm Digi turns heads at TXU Energy

Minnetonka, Minn.-based Digi International likes to call itself a “plumbing company.” CTO Joel Young gave us the impression that Digi is a collection of artists that can see all the devices that are part of a smart grid system and paint an abstract portrait that pulls everything together, simply.

The firm describes itself as the leader in device networking for business,

that develops reliable products and technologies to connect and securely manage local or remote electronic devices.

“You just have to know how to do web services because devices just show up as a web element” in the end, he told us. “We aggregate data and publish it to a web services-based database in the sky. We speak lots of different protocols.”

Web services is an approach to web-based programming that’s not new to the smart grid world but is still gaining traction.

It puts machine-to-machine (M2M) remote control and monitoring into a common, web-based language that can then be translated to machine dialects understood by a multitude of technologies. It’s one of those simple, powerful ideas that’s a part of, in spirit if not form, the so-called Web 2.0 universe of web-based computing services such as video streaming and global video chat, for example.

Since interoperability is key to the emergence and sustainability of demand response and smart grid offerings such as AMI, makers of meters, thermostats, temperature sensors and other energy-management devices will be looking for ease of cross-device communication. Energy service providers also need solutions to the complexities of remote-device communication.

Digi recently announced its first targeted energy play, Digi Energy, the publicly traded firm’s initial foray into the smart grid business. One of its first customers for the system is Texas power distribution firm TXU Energy where

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Amperion, IBEC team up for smart grid success

Amperion and IBEC signed a deal whereby the former will provide BPL services and support for high-speed internet access and smart grid applications, said Amperion this morning. The multi-year license and supply agreement covers BPL patents and other power line-related technologies that were developed by the firms. The terms weren’t disclosed.

“The growth of smart grid and the ARRA stimulus funding for rural broadband will accelerate BPL deployments nationwide,” said Amperion CEO Nachum Sadan.

His firm is based in Tewksbury, Mass.

IBEC is based in Huntsville, Ala

and provides BPL for retail broadband and smart grid to rural electric cooperatives -- and is famously teamed with IBM.

A disagreement over ownership of patents for BPL technology found Amperion and IBEC in a lawsuit last year -- allegedly threatened by one and filed in court by the other -- that ultimately reached settlement.

Both Amperion and IBEC are long time members of the BPL community.

Amperion last April announced a new product line continuing the firm’s dedication to WiFi as an extension of the BPL network for convenient connectivity.

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NERC urges using DR to balance new green power

The integration of large and reliable amounts of wind, solar and other variable generation into the American bulk power system will require fundamental changes in planning and operations, said a new special [NERC](#) report, including demand response and other activities that take advantage of the smart grid.

The report, titled “Operating and Planning Committee Review: Accommodating High Levels of Variable Generation” urges transmission additions and reinforcements, better forecasting of variable generation output and access to flexible grid resources including customer participation in targeted demand management, plug-in hybrid electric vehicles and large-scale power storage. Those are key contributors to reliably integrating any variable resources, said NERC.

“This report is just the beginning of our efforts in this area,” said Warren Frost, Alberta Electric System Operator’s vice president of operations and reliability and NERC’s Integration of Variable Generation Task Force chair. “Throughout the report, we’ve identified key homework assignments for NERC and the electric industry that we expect to be completed in the coming years.”

“We’re going to have to take new and innovative approaches to managing the electric grid as more renewables come

online,” said David Owens, executive vice president for EEI’s Business Operations Group. “We will need sound policy and leadership from our regulators and lawmakers to ensure that we can make these changes and improvements.” An important area mentioned in the report will be expediting the siting of new transmission to hook up new renewable sources, he added. “This is essential for addressing the issue of transmission congestion and ensuring reliability.”

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M2M networking firm Digi turns heads at TXU Energy

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Digi is deploying thousands of M2M solutions, said Young.

With Digi hosted software and services plus ZigBee-enabled hardware, Digi lets customers easily manage energy-load-control equipment via the broader internet in what the firm says is a secure way.

In a fragmented M2M networking market, Digi is "pretty well positioned over the long term to benefit from the smart grid," John Vinh told us. He's an equity analyst with Collins Stewart. "There are a lot of vendors specializing in certain networking technology -- WiMax or ZigBee or cellular," but Digi's end-to-end solution puts it in the position of competing mostly with custom integrators working inside a utility company, for example, said Vinh.

Neither he nor his firm owns shares in Digi, he added. Collins Stewart rates Digi shares as a "sell," said Vinh, mainly since it has been hit hard by the downturn in enterprise IT spending.

He explained what works in Digi's approach. "One way I'd envision smart grid deployment is, say I have a neighborhood and each home has a smart metering device. All of the meters' readers are networked together using ZigBee technology. Then the data is routed to a central point. That information needs to be backhauled to a central monitoring locality. Imagine a cellular based network after that," he said. "Digi has done a lot of that work -- integrating network protocols. And it has built a software stack around it. It has a system that's ready to go out of the box."

While Digi has built an expertise in

integration between networking protocols, Vinh doesn't see Digi becoming another Echelon -- that made a name for itself in smart metering. "I don't see them becoming a company that's heavily vertically integrated in the smart grid industry."

But that wouldn't be the life for multilingual abstractionists.

Digi Energy's technology let TXU Energy "leverage existing enterprise software service platforms" and ultimately integrate AMI networks, said Patrick James, a director at TXU. "We were able to move from concept to deployment very quickly. The platform's flexibility will also allow us to rapidly develop and deploy a broad range of new energy management services to help our customers better manage their energy costs."

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Northwest utilities to compete for 1/4 of smart grid stimulus

DOE expected to issue ARRA details tomorrow

A new coalition in the Pacific Northwest is gearing up to ask DOE for a chunk of the smart grid stimulus funds -- to the tune of one quarter of the \$400 million that's available now and ultimately \$1 billion of the agency's \$4.5 billion set aside for smart grid demos and roll-outs. The plan is to secure regional commitments in the next 50 days totaling the \$100 million.

The plan is to build a foundation for possibly garnering over \$1 billion from DOE to deploy smart grid products and systems in the Pacific Northwest.

Federal authorities have set aside \$400 million to use as matching funds for regional demos and DOE's eventual distribution of the \$4.5 billion will be informed by the demo-money distribution, Matt Muldoon told us yesterday. He's a senior economist at the Oregon PUC. He took part in a workshop that the Bonneville Power Administration and the Pacific Northwest National Laboratory held in Portland on Tuesday. The event set out to better define what the smart

grid means and to help prepare smart grid players in the region for an imminent DOE smart-grid-funds application process.

BPA is considering putting in \$10 million and wants commitments from utilities and other parties to invest \$90 million so that a regional demo project it is coordinating could get \$100 million in matching demo money from Uncle Sam, according to Muldoon and Mark Osborn, distributed resources manager of Portland General Electric (PGE).

BPA expects to learn on Friday more about what DOE expects -- and it anticipates needing to meet a June 1 application deadline, said Osborn.

The utilities considering tossing millions into the pot need to decide whether they will learn enough from taking part in the demo, said Muldoon.

Separately, Portland State University is set to hold a conference titled "Sustainable Smart Grid Community Planning for the Northwest" at the school June 18. The conference grew out of recommendations made by 52 students in a PSU class called "Designing the Smart Grid for Sustainable Communities," Jeff

Hammarlund, who is teaching the course, told us.

A coalition of environmental groups and businesses called Climate Solutions is helping design the conference. It is meant to identify gaps in smart grid planning and to work to integrate the smart grid with other sustainability infrastructures such as natural gas, water, building design and telecom.

Portland General Electric is "very excited about the project," said Osborn. "It's really necessary for us to improve the service to our customers, primarily, but also for the industry to demonstrate the capabilities of the smart grid." His firm made headlines in the last 24 hours with the kickoff of its AMI rollout (story this issue).

Meanwhile, the people that started this week to help prepare a "Northwest plan for implementing Smart Grid," said BPA, are still working on the basics such as a clear definition for "smart grid" and an outline of its benefits.

BPA is a not-for-profit federal electric utility and runs a high-voltage transmission grid made up of over 15,000 miles of lines and associated substations in Washington, Oregon, Idaho and Montana. The scope of the regional project in development has not yet been defined, said the utility, but some utilities have expressed an interest in joining.

Osborn took part in Tuesday's workshop with Muldoon and about 80 others. PGE is, he said, determined to "contribute as much as we can" but the utility is "waiting to define what the share is. Right now, we don't know if that's in-kind support, whether it has to be cash, whether the value of

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contributing a feeder [power lines radiating out from a substation to feed homes and businesses] for testing could be included in there.”

DOE is expected to issue a “notice of intent” on Friday, Osborn said, noting that he expects the document to clear up some confusion for everyone.

BPA outlined essential assets to be included in the DOE matching-funds proposal including agricultural pump control, backup generation, commercial HVAC, industrial process control, interval revenue metering, residential photovoltaic, residential smart appliance, residential thermostat, residential water heater, small wind generation, substation distribution automation/feeder reconfiguration and substation volt/VAr control, to name a few.

BPA’s “good to have” assets list includes customer transformers, cyber security,

plug-in electric hybrid vehicles, home energy management system, interoperability specifications and testing, oil temperature sensors and diagnostic systems, small commercial energy management systems, SCADA and voltage regulators.

While Osborn is concerned about the timeline of the DOE application for demo money, he said it looked like the two men leading BPA’s effort -- Lee Hall and Jason Salmi-Klotz -- seemed “very competent to pull this complex project together.” Hall and Salmi-Klotz, reached by *Smart Grid Today* Wednesday evening, declined to comment.

BPA has had a strategic initiative on the smart grid “for some time now,” said Osborn. “I think they are well positioned to provide some leadership in this area.” BPA hasn’t announced when another workshop will be held, he added when asked.

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Portland General Electric starts rolling out smart meters

PGE this week is kicking off the rollout of over 800,000 smart meters across its 4,000-square-mile service area and installation is expected to finished late next year. The project’s capital cost is about \$133 million and the utility expects the project to save customers at least \$34 million in the next two decades.

The meters are from Sensus Metering and will be read remotely, said the utility.

PGE has in place about 5 mw of distributed, small-scale solar generation at homes and business plus 50 mw of other DG. Adding smart meters

“allows us to bring all of the smart grid components we’ve been looking at together, to interact and maximize efficiency on a distribution feeder,” said Osborn. “We can bring everything to bear at one site.”

Other participants in Tuesday’s workshop expressed concern about possible barriers to recovering costs via rate cases. The Oregon PUC didn’t offer a guarantee but has been supportive of smart grid investment in the past, said PGE, when it allowed costs from advanced metering initiatives to be recovered from consumers.

“Utilities should try to take

advantage of the available stimulus funds,” Matt Muldoon, a senior economist with the Oregon PUC, told us yesterday. US utilities concerned about whether their smart grid activities would be deemed prudent and whether cost recovery would be allowed in a future rate case can “get signals” from PUC staff -- feedback on regulatory issues that might need to be addressed from “day one,” for example, he added. Utilities would do well to establish communication with the appropriate PUC and be looking for feedback along the way, suggested Muldoon.

[\[Comments\]](#)

FERC smart grid docket sees early hints of activity

When FERC proposed March 19 to set a smart grid policy -- including letting utilities recoup smart grid investments from ratepayers until interoperability standards are set (ST, [Apr-06](#)), the commission opened Docket PL09-4 for comments. The deadline is May 11 and thus far only a couple have come in. Stakeholders often wait until comment deadlines are near, giving themselves the most time possible to consider their own opinions and see what others have to say.

Other than the two comments, and we’ll describe them later in this

story, the docket holds the proposed policy document, statements from FERC Chairman Jon Wellinghoff and two other commissioners, a fact sheet about the proposed policy and a slew of letters announcing the proposal and comment availability to White House “Energy Czar” Carol Browner, DOE and US senators with seats on homeland security and energy committees and subcommittees.

Who submitted comments thus far?

One was a private citizen and the other was a general letter of support for

the standards process from the North American Energy Standards Board (NAESB, often pronounced “NAYS-be”). The board serves as an industry forum for the development and promotion of standards geared toward a seamless marketplace for wholesale and retail natural gas and electricity, as recognized by its customers, business community, participants and regulatory entities, said its website.

NAESB offered its assistance. “We have a large body of existing standards that we would expect at a minimum to be reviewed for consistency,” NAESB President Rae McQuade told us. “It’s a topic of 900-plus standards, the majority of which are FERC-approved.”

FERC’s proposed policy statement seeks public comment on standards for four priority issues critical to the smooth functioning and running the smart grid.

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is the place where you can make is the place where you can make valuable contacts and connections -- ask questions, seek opinions and offer advice -- with other utility industry professionals. To start a discussion, click the “comments” link at the end of a story or visit www.smartgridtoday.com/forum.

After weighing public comments, the commission is expected to adopt a final policy statement providing guidance to the electric power industry on standards for:

- Cyber-security;
- Communications among regional market operators, utilities, service providers and consumers;
- Ensuring that bulk power system operators have wide-area situational awareness with equipment for monitoring and operations, and
- Coordinating operation of the existing bulk power system with emerging technologies for renewable resources, demand resources, electricity storage and electric transportation systems.

A major element for examination would seem to be FERC's permission granting utilities to recover the cost of smart grid demonstrations and deployments for system security and compliance with FERC-approved reliability standards and other criteria.

Once the comment period is closed and the consensus is determined, feedback is expected from the DOE.

"Assuming that all that firms up into a proposal, then the DOE may look for input from states or other parties," Matt Muldoon, a senior economist with the Oregon PUC told us. "Before that, I

Smart grid goes mainstream

Business Week looks at consumer AMI 'dashboards'

As the latest instance of *Smart Grid Today's* planned tracking of how the smart grid message plays in the general media, hence the "Smart grid goes mainstream" kicker above -- we note a review of 10 smart meter monitoring tools on *Business Week* magazine's website. Such AMI tools are applicable today to only about 6% of the US population, the report noted.

Among the differences between dealers is whether their "dashboards" are available for the energy user to see directly or through utility partners. Several of the consumer options bypass

smart meters and utilities to inform customers with a standard power meter. While inexpensive and available online, those have tended to provide less detailed data than through the utility, said the article.

Products reviewed and available now or this year in the US included Agilewaves, Energy Aware, Energy Detective, EnergyHub, Google PowerMeter, Greenbox, Onzo, PowerMand, Tendril and Green Energy Options in Great Britain. The [article](#) included pictures of the various models.

[\[Comments\]](#)

don't think you'll get too much reaction from the states. From our point of view, we'll probably see how things get shaped up. You have to wait and weigh it at the end and see how DOE handles that advice."

To review comments, visit the FERC website at <http://www.ferc.gov/>, on the left side under "Gateway to Electronic Information" click "eLibrary," then click "Docket Search" and enter docket number

"PL09-4" and click "Submit." To view individual submission, an Adobe PDF viewer needs to be installed (we have a [link](#) at our website to Adobe's download page) and we recommend clicking the "File List" link for each submission to choose among various links to online versions of each file since FERC's built-in file viewing system didn't work for us, maybe since we weren't signed up with a full free membership yet.

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