

Tuesday, April 27, 2010

‘Little’ micro-grid firm Pareto pushes for revolving loan fund

Partner touts ‘router’ invention that links power systems

Part One of a two-part series

Pareto Energy CEO Guy Warner is pushing the federal government to start a revolving loan fund for smart grid development -- particularly the development of micro-grids. Warner has met with a number of federal agencies and some staffers on the Hill working on climate change.

He speaks with some authority, at least, about what it costs to design micro-grids. “I’ve taken all the profits I’ve made -- \$6 million, personally -- and funded all the design of these systems,” he told us in a recent interview in his office near Georgetown University, referring to the systems Pareto Energy is developing in Stamford, Conn; San Jose, Calif; a couple of cities in New Jersey; Miami; Pittsburgh, and the firm’s home base, Washington, DC. He also worked

on financing plans for micro-grids in Costa Rica and Mexico.

Pareto’s work was on display last month at the US Energy Assn where a workshop on micro-grids was devoted to a 9-17 mw micro-grid Pareto and Howard University are planning at the historically black school in Washington, DC (SGT, [Mar-18](#)).

Howard and Pareto this month formally agreed to work together on a micro-grid, Steven Harris, senior associate for government affairs at Howard, told us last week. Universities find micro-grids attractive since they cut power costs, provide educational opportunities and hopefully avoid power outages, he added.

In our sit-down interview with Warner, he levied roughly the same criticism Galvin Electricity Initiative Executive Director Kurt Yeager voiced last summer about DOE putting a premium on “shovel-ready” projects -- that Yeager said “won’t do anything to empower consumers” (SGT, [Jul-22](#)).

“The idea that the federal government should fund shovel-ready projects makes

no sense at all,” Warner told us. “What they need to be financing is good design.”

Pareto and competitors Endurant and Real Energy now foot the design bill, he added, and they have limits.

“You can get to the end of design and the project might not go forward,” Warner said. “There can be all sorts of problems in design. We think a revolving loan fund could work perfectly because we are willing to pay a very high interest rate,” such as 12%. “We know it’s very risky. If the projects go forward, we could repay that. The high interest rate can hopefully cover the risk of the projects that don’t go forward.”

Pareto plans to “take the lead and try to ally with organizations like Galvin and we’re going to see if this little company can get the federal government to put in a revolving loan fund to design climate change and energy efficiency infrastructure.”

It is Warner’s success getting regulations passed at the state and local level that makes his revolving loan fund plan plausible, Dana Markle, VP of

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Elster, others supply gear, station for Canadian EV charging study

Metering firm Elster will provide technology for a commercial EV fleet demonstration project at Burlington Hydro, of Burlington, Ontario, Canada, the firms told the press. Burlington Hydro recently took delivery on its first EV, the utility said.

The year-long study, ending February 2011, will be conducted by the University of Waterloo, with funding from Transport Canada, that nation’s transportation agency -- and is meant to boost understanding of an all-EV fleet including recharging patterns and needs; how to optimize the use and recharging cycle, overall performance, drive-cycle and battery state of health and impact on the grid.

The motor and drive system technology for the test vehicle were developed by Rapid Electric Vehicle Technologies, of Vancouver, BC. That

firm will also provide smart grid and wireless telemetry capabilities, integrated data management and charging infrastructure, it said.

Petroleum marketer Pioneer Petroleum will install and run a recharging station at its Burlington location. The station was developed by Eaton Corp which is providing electrical infrastructure and systems support.

The University of Waterloo will develop assessment and management software to help integrate EVs and PHEVs into the grid.

Elster’s EnergyAxis offering will let Burlington Hydro remotely monitor and control the EV’s power use at the charging station and will assist in understanding how best to integrate EVs into the grid, Elster said.

[\[Comments\]](#)

GE, Nissan to study how to plug EVs into homes, society

GE and Nissan agreed to research technology for charging electric vehicles, those firms said yesterday. Over a three-year period, they will work together to learn how EVs can best be integrated with homes, other buildings and the grid, senior scientist Matt Nielsen told us yesterday.

For the moment, details on the research are sparse but within the next month, GE and Nissan will work to identify specific projects to be undertaken under the memo of understanding they signed last month, Nielsen said.

“There have been a lot of studies to date and continue to be a lot of studies but we thought two companies of this magnitude coming together can really

help investigate how these vehicles will impact the grid," he said.

Research on how EVs will interact with homes and other buildings will be undertaken first, lasting a year or so, followed by examining how they will affect the overall grid.

Much research has already been done on the impact of EVs on every aspect of life from homes to T&D equipment, Nielsen noted. GridPoint, for example, developed software used by utilities and charging-station makers that senses grid load and defers charging based on profiles set by the utilities so as to lessen their impact (SGT, [Apr-05](#)).

The National Renewable Energy Laboratory -- and especially senior engineer Tony Markel, published [multiple papers on the topic](#).

But the questions are not yet fully answered -- at least not deeply, Nielsen said. "I applaud their work, and we plan to build on it," he added. "I truly believe GE has the depth of experience in smart grid and power-systems analysis that others would be hard-pressed to match -- and we're going to leverage those tools and expertise to really, really develop a set of requirements that can help define what is needed for smart charging. How does it interact with transmission, distribution, generation, renewables?"

GE is concerned with the EV customer experience, down to details such as whether the charging station's power cord is easy to manage and whether "range anxiety" can be eased by ensuring charging stations are optimally positioned.

Nielsen, a PhD physicist, said that at GE, research mixes well with developing

3 stories in 1 minute

Dust Networks joins

ZigBee Alliance: Dust Networks, a Hayward, Calif.-based maker and supplier of wireless sensor networks, joined the ZigBee Alliance, it told the press yesterday. Dust's new low-power IEEE 802.15.4-compliant chips will provide a platform for ZigBee applications, it said in a prepared statement.

Telkonet upgrades

smart thermostat: Telkonet, of Milwaukee, introduced an upgraded model of its SmartEnergy-brand energy-management thermostat called the SS5200, it told the press yesterday. The SS5200 includes more options for deep setback modes --

freeze- and overheat-protection trip points that override the set point plus added building management system integration, field-selectable wireless transmitting power levels and a modular radio board, Telkonet said in a prepared statement. No pricing was mentioned.

P1901 draft passes

with 80% of votes: A draft of a standard governing BPL passed last week, clearing the way for an international specification for power line networking. Draft 3.0 of IEEE's P1901 standard passed with over 80% affirmative votes, the IEEE P1901 Working Group said in a prepared statement.

[\[Comments\]](#)

commercial applications.

"Of course I'm focused on research but we do look at high-level market segments," he noted. "What are the utilities doing and thinking? They will have thousands of vehicles to charge." Municipalities may have hundreds plus tens of stations. Home owners may have one or two EVs and each of these "will have different requirements."

The new planned research will let GE offer "a breadth of smart charging" products, "but at this point we want to understand the space with a lot greater depth and the opportunity to work with a company like Nissan is going to be very valuable to us," GE spokesman Todd

Alhart said. GE now sells no smart-charging products but has 40 years of working with EVs and PHEVs, Alhart said. It demonstrated a PHEV in 1982 that got 101 miles/gallon, he added. It said in February that it will work with Juice Technology to develop EV charging stations (SGT, [Feb-22](#)).

Much of GE's research under the joint arrangement will be conducted at GE's research facility in Niskayuna, NY. Nissan will take part mainly through its technical center in Farmington Hills, Mich. Each firm will have its own research budget and the size of those is as yet undetermined, Nielsen said.

[\[Comments\]](#)

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engineering and operations of CleanAir Logix in Long Beach, Calif, told us.

Warner helped to get state laws passed in Connecticut and New Jersey that enable cities to set up micro-grids, Joseph Sullivan, energy ombudsmen with New Jersey Board

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of Public Utilities, told us recently. In Stamford, Warner helped get the Board of Representatives to pass legislation creating an Energy Improvement District (EID) in 2007 (Warner developed the concept of EIDs, similar to Business Improvement Districts.) And the US Conference of Mayors backs Pareto.

"He's cut his teeth on that stuff and he knows what he's doing," said Markle. CleanAir Logix does not have a financial relationship with Pareto but the designer of technology used to power large ocean-going vessels while at berth is collaborating on the design of a micro-grid at a port complex, Markle said.

GridLink invention touted

"The important thing about Pareto is they are real innovators in the micro-grid world," he added, referring in

part to the patent-pending technology Pareto owns called GridLink -- that he called "a remarkable breakthrough in equipment that makes connection much easier."

GridLink is, Warner said, "the router of the smart grid. We feel like it's the way the smart grid can take on any kind of power system and not worry about a short circuit from one system getting over to another system." A report the city of Stamford filed with the EPA described GridLink as "multiple sources [from grid and micro-grid] converted from AC to DC with fast power converters and converted back to a single clean AC signal on a common micro-grid bus."

The router question has been troublesome. "It's a legitimate concern of the utilities," Warner said. "All they are trying to do is protect their workers

and their equipment. At Pareto, we've invented a technology we think they can be happy with."

Connecticut Light & Power signed off on the technology.

The Obama administration's interest in cutting greenhouse gases, noted Sullivan, might best serve Pareto in its quest to get cities to again "put generation near congestion points," as Boston, Philadelphia and many other cities had done so long ago with coal-burning plants.

"This is an old idea, using new technology that has extremely low emissions," he said.

[\[Comments\]](#)

DR helps ISO-NE far exceed summer power needs

ISO New England expects to have enough power supplies to meet demand this summer, it said in its summer outlook issued yesterday. Peak demand forecasts top out at 27,190 mw this summer under normal weather conditions -- about 90°F. If the region saw an extended heat-wave of 95°, peak use could hit 29,130 mw.

The forecasts surpass last year's 25,100 mw peak when the recession and mild weather cut back demand. The all-time record peak is 28,130 mw set in 2006.

New England has capacity resources

of 32,670 mw to supply power or cut its use including 30,380 mw of generation, 1,330 mw of DR and 390 mw of imports. Another 570 mw of energy efficiency will help keep the grid balanced.

All of those resources were procured through the forward capacity market that goes into full effect in June.

In an emergency, ISO-NE can call on emergency DR, imports from neighboring systems and call for voluntary use cuts by consumers.

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