

BRIEF

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Energy Data Boosts High-Tech Firms' Value

The Mass High Tech Council and Constellation NewEnergy are installing wireless energy monitoring devices at high-tech facilities -- using information to get more value for energy customers. Utility distribution companies are missing the opportunity to turn information into new value-added services.

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We recently spoke with Christopher Anderson, president of the Mass High Tech Council (MHTC), about his efforts to create a wireless energy information network for the council's 100-plus members like Genzyme and Boston Scientific. The goal? Use real-time, end use energy data to capture the next phase of cost savings in deregulated electricity markets -- adding to the \$25 million already saved by MHTC members since deregulation began in 1998. According to Anderson, the MHTC is partnering with its electricity supplier, Constellation NewEnergy, to install Intech 21's wireless monitoring systems in at least 50 company sites. They're using the energy information to:

- **Reduce wholesale market price risk.** In New England, electricity suppliers must schedule electricity deliveries a day in advance and then buy or sell energy in the next day's hourly spot markets to exactly balance real-time supply and demand. By capturing and modeling their customers' real-time demand data, Anderson expects that power suppliers like NewEnergy will be able to reduce their financial exposure to these volatile spot markets.
- **Monetize customer demand flexibility.** State and federal energy regulators want energy users to respond to wholesale price signals -- lowering demand when power supplies are tight. The MHTC plans to connect the Intech 21 meter data to RETX's demand response software used by ISO New England -- tracking power savings and calculating incentive payments for actions like raising building air-conditioning thermostats from 72 degrees to 78 degrees during a heat wave (see the March 30, 2001 Forrester Brief "ISO-NE's Net Strategy Will Cut Energy Price Spikes"). The first MHTC members to try this new system include Cognex and Philips Medical Systems.

- **Identify energy productivity savings.** By monitoring the energy-consuming equipment within buildings, Anderson anticipates that building managers will find hidden energy-saving opportunities like office lights left on over weekends or heating and ventilating controls that are not optimized for energy efficiency. Already, EMC has tested the Intech 21 system to centrally monitor five high-tech buildings -- comparing real-time and historical energy productivity across its fleet of facilities and building systems.

UTILITIES SHOULD GET INTO THE INFORMATION BUSINESS

The MHTC and NewEnergy are effectively bypassing the utilities' antiquated metering and information systems. The result? Utility distribution companies will steadily fade from customers' view, just like Oncor and CenterPoint Energy did in the Texas deregulation market. But utilities can avoid this sorry fate by adopting what Forrester calls a retail data trust, which (see the October 2002 Forrester Report "FERC's Landmark Rules Will Transform Utilities"):

- **Automatically collects real-time meter information.** The first step is to replace the manually read electric meters with automated meter reading devices like SchlumbergerSema's QUANTUM Q1000 meters, which transmits real-time energy data over frame-relay, wireless, shared-phone-line, radio, or fiber-optic channels. Utilities are starting to understand the importance of granular energy data. Niagara Mohawk Power, for example, just began installing automated meters in October 2002 -- and it expects to convert all of its customer meters by early 2004.
- **Hosts a retail data center.** Automated meters typically collect 15-minute interval data for billing items like electricity demand, usage, reactive power, and time of day -- demanding 3,000 times the data storage needs of monthly meter reading. Customers and their authorized load-serving entities need this data to statistically evaluate demand trends against such factors as weather, business cycles, and time of day. EMC, for example, provides the hosting services for the MHTC.
- **Publishes meter data through a secure portal.** To prevent customers like MHTC members from building their own data trust, utilities must become the information provider of choice -- making data available via a secure browser interface. In addition to publishing raw data, utility data services should provide graphical tools for analyzing energy use and costs. A great example? TXU Energy Sentinel, which provides analytic tools that help energy managers identify high-cost operations and test-drive alternative electric rates.

INFORMATION WILL LEAD TO NEW VALUE-ADDED SERVICES

While the electric utility industry restructures under deregulation, utility executives have been looking to replace lost monopoly revenues with value-added services -- hoping to find high-margin services equivalent to call waiting and voicemail that boosted telephone utility earnings. Forrester believes that centrally stored, granular customer data offers utilities and load-serving entities these opportunities. We expect to see a flurry of new services like:

- **Segmented energy productivity benchmarks.** During the MHTC pilot, EMC compared the energy productivity of each of its five Massachusetts facilities with internal productivity benchmarks. However, more value will come when the retail data trust aggregates data across industry segments like biotech laboratories and financial services firms -- providing an objective score to rate industry energy efficiency. Look for companies like Invensys to include these metrics in their energy performance contracts with office building owners -- negotiating higher incentive payments for exceeding comparable industry benchmarks.
- **Maintenance watchdogs.** Maintaining low electricity consumption per square foot of office space requires firms to regularly maintain buildings by changing dirty air filters in air-conditioning units, replacing leaking steam traps, and cleaning boiler tubes. Look for low-cost wireless devices, like the Intech 21 units, to sense performance degradation of heating, air-conditioning, and ventilating systems -- sending alarms to building operators to fix the problems before operating costs exceed monthly budget targets.