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Graphet Serves Industrial Clients Directly and Through Utilities' Efficiency Programs

Cincinnati-based Graphet brings expertise in refrigeration, compressed air and process heating and cooling, in addition to sophisticated energy data mining and modeling capabilities to help its industrial companies cut energy consumption.

Graphet has been pre-qualified to provide energy-saving services to customers of Xcel Energy in its service territories in Minnesota, Colorado and New Mexico. Graphet is also a certified facilitator for Ohio's state-run program for Industrial Energy Efficiency. It has participated in similar programs in California (Sempra's San Diego Gas & Electric and Southern California Edison) and state-run incentive programs in Illinois (Manufacturing Energy Efficiency Program).

"There is direct work for industrial companies as well," said President Chandan Rao. "We have corporate accounts that we work for directly. Sometimes firms bring us in so we can help them maximize their potential rebates. And for certain industrial clients, we work across all their plants so they can maintain consistency."

"We also do work for large institutional clients, especially hospitals, water and wastewater treatment facilities," said Rao. Typically, \$500,000 in annual energy spending is the minimum size of a Graphet client, according to Rao. And for all types of assignments, the company

looks for opportunities to leverage U.S. Department of Energy grants such as special energy projects funded through DOE in the state of Ohio and DOE plant wide assessment studies for GE Appliance Park in Kentucky.

Rao founded Graphet about 10 years ago after working on energy efficiency measures for industrial customers of distribution utility Cinergy (now part of Duke Energy). Prior to that he was in performance contracting for Honeywell.

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Performance contracting has traditionally been limited to public and non-profit organizations, and as discussed in the Better Buildings Challenges story on page 16, the U.S. Department of Energy and some financial services firms are collaborating to take a variation on this model to the commercial office building sector.

Rao says the commercial office sector is more amenable to performance contracting than the industrial market. "The commercial sector is not as technically complex," he said. "You've got lighting, AC, heating, maybe computers, but that's it. In industry, a food manufacturer has completely different requirements from a car manufacturer, a plastics manufacturer or a bottle manufacturer."

Graphet focuses on industrial sector

In the industrial sector, energy efficiency measures can improve quality, reliability or throughput—improvements that are even more highly valued by some clients than the direct cost savings resulting from reducing energy usage, says Graphet's president.

Even within industries, processes vary dramatically depending on a firm's niche in the value chain. "If you're making laminated glass, your processes are completely different than a firm making windows," said Rao.

Then there's the propriety nature of processes and procedures within industries. "Unless they completely outsource their engineering, an industrial firm's production processes are near and dear to them," he said. Also, in an industrial context, managers need to be hands-on with their energy management systems. "Most of them recognize that to keep their energy costs down, they need to understand the solutions."

Finally, guarantees are difficult to establish and monitor in an industrial setting, according to Rao. "Holding performance contractors accountable for results in a changing manufacturing environment is very difficult."

"There was initially some thinking that a shared-savings model would work within the industrial market, but it didn't," he said. "In some cases, performance contracting could work, but the margins of the ESCOs would have to come down

significantly. Some of the larger corporations trying to do performance contracting in the industrial market are finding out that it will not support the margins they're used to."

Industrial Clients Seek Improved Quality and Reliability; Direct Savings May Be a Secondary Goal

As discussed in the overview to this edition, energy efficiency service professionals have to make a compelling case for an energy efficiency project in order to sell it to corporate management. Graphet has its own spin on approaching that challenge, but Rao also highlights some larger lessons about the industrial market that he and his colleagues have learned.

One is that cost savings aren't necessarily an industrial client's primary goal. "Energy efficiency projects don't get done because they save money in the industrial market; they get done because they improve quality, reliability or throughput," he said. "In some ways energy efficiency is really an early indicator of something going wrong in their production equipment."

An unfortunate reality of the market is that the plants that need energy upgrades the most are often in the hands of managers and owners who are the least capable of accomplishing them. "It has to do with organizational culture," said Rao. "If an organization has a focus on cost containment and efficiency, they tend to be more capable of addressing their energy issues. The companies that look run down and like they have a lot of energy efficiency opportunities also have the lowest capabilities to develop an energy management program in terms of internal management structure, accountabilities and a process for funding improvements."

This means there's a lot of industrial energy efficiency fruit hanging low because of negligence, according to Rao. But that same negligence means that no matter how ripe, the fruit is unlikely to

be harvested. "This is always difficult to address," he said. "There's a cultural aspect to driving energy efficiency that is just as important as the technical and financial aspects."

Three Phase Approach Starts With Organizational Assessment

Of course, corporate culture is not static, and there is a fine line between a resistant client and a poorly designed energy efficiency sales pitch. Rao says that the first phase of Graphet's three-phase energy management consulting service is designed in part to assess the client's organizational structure and help its management move toward embracing an energy management program.

"We're very metric and data oriented, and that's what the industrial market really needs."

"In phase one, we want to understand what their current operating structures are and what would be the right way to incorporate energy into that structure to make sure we're not going down a path that the management team won't support," said Rao. "That's how we support the cultural change."

"We engage a cross-functional management team to benchmark where they are on energy management," said Rao. "In what is usually a one-day event, we do a high-level strategic walk-through to see if there are enough opportunities that warrant management attention."

"Then we help them set priorities for energy management, bracket their potential efficiency improvements and see if we can come to closure on where they could use help in developing a sustainable program for energy conservation."

Such Phase 1 audits and recommendations usually cost between \$10,000 and \$20,000, depending on the size of

the organization, says Rao. In this phase, Graphet uses energy management benchmarking software from Norwell, Mass.-based **EnVinta**. "That gives us a good read on what clients are doing in terms of their energy usage."

Data Analysis is Precursor to an Energy Management Plan

If the management team gives the go-ahead, Graphet goes into a Phase 2 analysis that Rao describes as data-oriented. "We've got sophisticated tools for energy data mining and analysis with which we extract usage patterns and identify inefficiencies," he said, adding that over half of Graphet's 16 employees are trained to either analyze energy data sets or develop an infrastructure to do so. "We have our own software for analysis with a team that continues to develop and enhance that capability," he said.

The end result of Phase 2 is an energy management plan that the site management team can take to C-suite officers or the board to seek approval and funding. "We help them with project justification, making sure they're focused on getting capital funding for their highest priority projects," said Rao.

If approval comes forth, Graphet looks to help with implementation in the third phase of the project—although Rao acknowledges that many clients run with the ball on their own from that point.

Operational Improvements Precede Investment in Capital Assets

For those who want Graphet to stay involved for implementation, the firm focuses on putting accountability measures in place but does not do project management, design or engineering. Usually the focus is first on generating savings through operations. "We want them to get all the operational savings they can first before investing in new capital assets," said Rao. "Typically there are between one and 10 percent savings from operations.

We strongly believe in taking baby steps before you get to the big numbers.”

Regardless of whether it remains in the co-pilot seat for implementation, Graphet usually defines “the critical requirements and the best paths for equipment upgrades in Phase 2,” said Rao. “We will develop concept designs and system requirements that any design-build contractor has to meet.”

“We recommend equipment in terms of capacity, functional and operational requirements and identify the manufacturers that can meet them,” said Rao. “We’re vendor neutral.”

Among Graphet’s success stories is Waseca, Minn.-based Brown Printing, which has stuck with Graphet’s energy management plan through its acquisition by Bertelsman Media Worldwide. Another client, Gordon Food Services (Grand Rapids, Mich.) has hired the company to assess opportunities and develop energy plans for eight sites after its success with its first assignment.

“Energy data mining, analysis and modeling are the differentiators,” said Rao. “We’re very metric and data oriented, and that’s what the industrial market really needs.” ⚙️

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