Can energy and water management be a competitive advantage?

Transform energy and water efficiency with the Manufacturing Energy Management Solution (MEMS™)

Manufacturing is facing more cost-cutting pressures and stringent regulatory restrictions. This is coupled with increasing volatility in energy pricing, unstable access to resources such as water and the need to demonstrate a heightened sense of corporate social responsibility toward efficient energy consumption. In this environment, tracking overall plant energy consumption as an overhead cost is not enough, and manufacturers’ traditional utility and energy management approaches are falling short. Unfortunately, most manufacturers have little visibility into their utility consumption at the level of detail required to drive significant improvement.

Manage energy consumption with visibility, knowledge and insight

MEMS™ from EY, powered by GE Digital, can help manufacturers transform their utility management capabilities by providing groundbreaking insight into energy and water consumption. It is a pre-configured and rapidly deployable application powered by Predix®, GE’s cloud-based operating system for the Industrial Internet of Things (IIoT). Through the detailed visibility, analytics and actionable information MEMS provides, manufacturers can manage energy consumption in the context of production; factor energy usage into their planning and execution decisions; and drive improvements in cost, efficiency, innovation, greenhouse gas emissions and water conservation.

MEMS connects energy and water consumption – and the associated costs – to products, equipment and processes and provides a detailed view of energy use across the enterprise and within each manufacturing site. Through MEMS, companies can measure utility usage at each unit and assign it directly to a production bill of materials. Managing energy and water as production materials permits manufacturers to treat utilities as a controllable cost rather than as fixed overhead.

Analytics for real-time decision-making

MEMS analytics can give manufacturers the insights they need to make decisions in real time to:
- Adjust overall energy usage
- Respond to fluctuations in energy cost or new compliance requirements
- Understand sources of waste
- Model performance in support of energy budgeting and contract negotiations
- Increase energy efficiency by correlating energy patterns to production and process variables
- Continuously improve performance by analyzing and contrasting plants, departments, production lines, equipment, shifts and crews
A new level of energy efficiency and operational performance is waiting to be unleashed to help you:

**Reduce cost**
- Reduce production cost through efficient scheduling and forecasting
- Reduce costs incurred through energy waste
- Improve energy and utility budgeting and contract negotiation
- Leverage energy demand programs

**Improve efficiency**
- Improve energy efficiency, intensity and usage
- Monitor production and energy and utility usage in real time
- Compare sites, lines, equipment, shifts and crews by product
- Track impact of process variables (temperature, humidity, water and air quality, etc.) on utility usage

**Drive innovation**
- Encourage innovative employee ideas through the availability of analytical data
- Support opportunity identification and validation of new practices and process changes
- Perform design of experiments to discover opportunities to reduce utility usage

**Reduce greenhouse gases**
- Improve corporate image regarding green initiatives
- Comply with evolving emission regulations
- Reduce greenhouse gas emissions
- Manage carbon footprint and potential carbon credits
- Increase water conservation efforts and reduce effluents

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The EY and GE Digital alliance advantage

GE has built Predix, the operating system for the Industrial Internet, which leverages GE's decades of experience and knowledge in industrial manufacturing. EY accelerates issue-driven innovation and business transformation through its digital capabilities and domain knowledge across business sectors. EY's relationship with GE Digital and approach to digital operations enables us to bring innovative Industrial Internet of Things services to market to help clients dramatically improve productivity, increase yield, reduce cost and increase revenues.

With MEMS™, EY has adapted its on-premises proprietary MEMS (built on GE Digital's Plant Applications software, formerly called Proficy Plant Applications) for the Industrial Internet of Things. EY brings a full range of consulting and implementation services to support the MEMS-assisted transformation of a manufacturer's energy program. We apply leading practices to help assess the current state of energy management and to help develop a road map for success. Our implementation services include turnkey MEMS installation, training, rollout and support.

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For more information on how EY and GE Digital can help your organization transform energy and water efficiency for a competitive advantage, please contact EY IT Advisory professionals Scott Dixon and Aly Shawky.

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About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

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About GE

GE (NYSE: GE) is the world’s Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the “GE Store,” through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry.
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