

INDUSTRIAL PARTNER

GE



Implementation Model: Operations Management Leadership Program

ORGANIZATION TYPE

Diversified technology and financial services

BARRIER

Supplement GE's efforts to identify, analyze, and implement energy efficiency opportunities at thousands of locations with diverse operations. At the same time, GE is challenged with continuously improving the value of its training to newly hired engineers in the operations function

SOLUTION

Leverage GE's management training program known as the Operations Management Leadership Program (OMLP), which accelerates the development of entry-level talent and produces leaders capable of meeting the challenges facing the operations, supply chain, manufacturing, and quality functions at GE

OUTCOME

New engineers are quickly engaged in identifying energy savings opportunities throughout GE facilities around the world. Since the program was launched, these engineers have identified 572 projects totaling \$6.4 million in savings

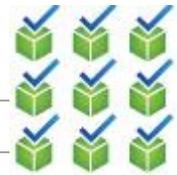
Overview



GE is strategically reducing energy consumption throughout its manufacturing operations and supply chain through its Operations Management Leadership Program (OMLP). By design, the program

accelerates the deployment of newly hired engineers that are trained in GE's energy and environmental management program and equipped with the necessary functional and leadership skills needed to help meet the company's near- and long-term operational challenges.

GE's Playbook



Process

OMLP is a two-year program consisting of four six-month rotations that allow newly hired staff to build leadership and functional skills through challenging assignments and world class training. Applicants are degreed engineers with preference given to mechanical, industrial, and electrical engineers. Recent graduates apply directly to OMLP; they do not begin as regular GE employees. Following the two-year program, many stay on and take positions elsewhere within the company, while others move on to jobs outside GE. The OMLP is modeled after other GE training programs, such as its Financial Management Program. OMLP, however, is designed specifically to help develop the skills GE engineers need to successfully integrate manufacturing with other key processes in the company. GE's focus on process integration, from design through manufacturing, has been critical to meeting customer expectations. The experience gained during the rotational assignments positions OMLP members for accelerated career growth and allows them to make continued contributions to GE's operational challenges.

Typical rotations include one or more of the following:

- Manufacturing Shop Operations Supervisor (leading a manufacturing team in the production of products)
- Sourcing/Materials (supervising suppliers to improve product quality and negotiate price)
- Technical (Lean Leader/ Manufacturing Engineering/Quality/Process Engineering; improving efficiency of supply chain management through LEAN/cost reduction)

Program members are also involved in GE's strategic initiatives—including GE's drive for LEAN Six Sigma, and the company's goal of improving energy efficiency by 50% by 2015 from a 2004 baseline. OMLP members also have the opportunity to learn the entire supply chain, state-of-the-art methods of manufacturing, and sourcing through structured course work and practical application.

Coursework includes:

- Supply Chain Management
- LEAN Manufacturing Operations
- Environmental Health and Safety
- Energy Efficiency
- Project Management
- Negotiation Skills
- Business Acumen

The energy efficiency component is an integral part of the OMLP initiative, and must be completed prior to graduation and consideration for further employment within GE. As part of the energy component, training in energy systems and energy-efficient technologies are presented in the fourth quarter of the first year of the OMLP. The training consists of teaching the general principles of GE's energy program along with a particular area of energy focus. Prior

years focused on studying and identifying opportunities in compressed air systems (2011) and furnaces (2012). The engineers receive background information and tools that can be used for optimizing the specific focus area. They also learn about measurement and evaluation from experienced GE personnel using GE case studies from around the world. In addition, they are encouraged to identify any other energy efficiency opportunity. The engineers are then sent out to evaluate the plant and conduct a detailed assessment. Members develop an assessment report with supporting data and cost estimates. Projects with less than one year payback are added to the Eco Project Deck, funded through the GE capital process, and then scheduled for implementation. In addition, the facility benefits from the fresh perspective provided by the OMLP members, who provide their observations, both positive and negative, on current practices and procedures. When best practices are identified, they are collated and shared company-wide. OMLP engineers are not in charge of implementing projects. Their role is to identify and recommend energy saving opportunities to business leaders, who then make decisions on implementation based on costs and projected benefits.



Tools and Resources

A key tool in collecting and reporting project data is GE's Eco Project Deck energy management database. The database records the descriptions, calculated energy savings, and projected costs and schedules for each project. This allows for project prioritization and data mining for the sharing of best practices across the company.



Measuring Success

During training events, OMLP students get a good understanding of the primary technology of focus for the event, and how to quantify potential savings opportunities and measure results. The OMLP students learn in detail about the wide range of applications, system designs, and equipment components. They are given information about potential opportunities, and measurement techniques. Case studies are presented reviewing real projects completed at GE facilities. They also learn about the wide variety of electricity rate designs, and how to use the electric supply contract and other rate information to translate energy savings into dollar savings. OMLP students also learn how to consider the seasonal and hourly variances in energy reductions to properly calculate the impact of improved energy efficiency on actual electricity costs.



Outcomes

After just two years, GE has identified over \$6 million in savings opportunities, identified and shared numerous best practices, and developed a leadership team better prepared to identify and address energy efficiency opportunities.

During a first-of-its-kind event in 2011, OMLP students from all major GE businesses came together to analyze the compressed air systems at 49 GE manufacturing sites. As a result of this assessment, OMLP engineers identified 265 compressed air system projects representing an annual reduction in energy use of 44 billion Btus with an investment payback of only 5

months. This is equivalent to a reduction in greenhouse gas emissions of 13,000 metric tons/year; offsetting the emissions of over 2,200 automobiles or more than 1,000 average homes every year. In 2012, 66 sites participated in furnace assessments with 307 projects identified. These projects represent an annual energy use reduction of 154 billion Btus with an investment payback of 8 months.

The chart below summarizes the energy and emissions savings results of the first two years of the OMLP program. The program has so far been effective in identifying energy opportunities and promoting a culture of energy efficiency among the future leaders of GE.

OMLP Eco Project Overview		
2011	2012	Company Overview
169	208	OMLP Participants
49	66	Participating Plants
265	307	Projects Identified
\$2.02 MM	\$4.41 MM	Annual Savings
\$0.80 MM	\$3.30 MM	Installation Cost
0.4 yr	0.8 yr	Payback Period
43,792	154,028	MMBtu Reduced
12,810	27,087	Metric Tons of CO ₂ Reduced