



CUMMINS DEVELOPS ENERGY CHAMPION PROGRAM TO TRAIN STAFF AND IDENTIFY ENERGY SAVINGS

SOLUTION OVERVIEW

As part of its environmental sustainability mission, Cummins has committed to reducing energy intensity by 25% and GHG emissions by 27% across its global facilities and operations from 2005 to 2015. To help achieve these goals, Cummins established an Energy Champion Program to drive continuous improvement in energy performance at the plant level. The program trains facility energy leaders in energy management best practices and provides appropriate tools, methods, and support to ensure effective energy management expertise and employee engagement at the company's top energy-consuming facilities.

ORGANIZATION TYPE

Engine Equipment Manufacturing

BARRIER

Lack of knowledge at many facilities around energy management best practices and tools to improve energy efficiency

SOLUTION

Establish an Energy Champion program that trains facility staff to identify opportunities to save energy and reduce greenhouse gas (GHG) emissions

OUTCOME

Participating sites have experienced continuous energy improvements that contribute to corporate sustainability goals

POLICIES

Cummins targeted its highest energy-consuming plants, technical centers, offices, and warehouses for initial implementation of the Energy Champion program. By the end of 2014, the 45 largest energy-consuming sites in 11 countries (which comprise approximately 90% of the Cummins global

energy footprint) are required to have completed the program. The remaining 86 manufacturing sites are encouraged to participate, and Cummins provides a condensed, customized course to over 200 distributor and dealership sites. As part of the program, Cummins hosts five regional training sessions each year, taught by a combination of Cummins energy leaders and external experts.

The annual cost of the Cummins Energy Champion Program is \$80,000. This includes \$50,000 per year for outside support to update training content, translate, and deliver the training, and \$30,000 per year for internal trainer travel and supplies. Most of the training is provided in Cummins facilities. These costs do not include training facilities nor travel for students.

Pre-requisites for successful execution include upfront commitment at corporate, business unit and site levels. This was initially developed in part through executive level sponsorship of the program, and was followed by inclusion in company sustainability goals. The Cummins Environmental and Energy Management System Enterprise (ISO 14001 & 50001) transforms the Energy Champion program into standard practice by defining the program's organizational structure, responsibilities and requirements through auditable procedures, policies, objectives, and targets.

PROCESS

Cummins initially launched the Energy Champion Program in 2009. The program was updated to reflect current technical, environmental and regional developments and opportunities, and re-launched in 2013. Each designated plant site identified an appropriate person to serve as Energy Champion (larger more, complex sites often include 1-2 additional employees for support staff). Typically, the Energy Champion is the site's facilities manager responsible for energy management and utility bill payment. In most cases, these responsibilities represent 5-20% of the Energy Champion's workload. Each Energy Champion and their support staff attend a four-day training session which is delivered regionally by Cummins and external energy experts.

The Energy Champion training delivers information on the following topics:

- Company energy and environmental sustainability objectives.
- Energy & GHG basics and standards, including a primer on GHG science, fundamental energy terms, how energy is generated and used, and understanding utility bills.
- Current energy efficiency technologies, equipment and processes. These are organized by the seven Cummins "energy themes": Power Management, Lighting, Building Envelope, Heating & Cooling, Machinery & Equipment, Fuel Usage, and Energy Recovery.
- Energy assessment and improvement planning, including how to conduct energy efficiency assessments, evaluating and prioritizing projects, and developing site energy plans.
- Financial evaluation and management, including how to use the Cummins capital model, how to work through the project justification and approval processes, and how to apply for corporate capital funding.
- Implementation of site energy teams and employee engagement methods, including how to select, train and engage site teams.

- Common energy management tools and practices, including an overview of Cummins tools, U.S. Department of Energy (DOE) tools such as AIRMaster+ and MotorMaster+, and other web-based information resources.
- Best practices, including examples of successful Cummins energy projects and an introduction to the company's global energy awards program.

TOOLS AND RESOURCES

Cummins utilizes a number of different tools to advance its Energy Champion Program—some have been developed in-house, while others come from outside groups and government agencies, including DOE. One particularly important tool that Cummins developed is its Financial Model for Energy and Environmental Projects. The model provides a standard approach to value and prioritize all investments in energy efficiency improvements. The model calculates energy use, costs, the projected payback period, present value, rate of return, and GHG footprint for every project. The tool enables prioritization of projects based on financial and environmental returns that lead to the greatest capital and operational improvements.

Other tools and resources Cummins developed for the Program include:

- Site Energy Champion role profile and work description
- Energy Champion training resources (translated into Spanish, Portuguese, and Chinese), including standard welcome and program overview materials
- An Energy and GHG calculator to help site teams conduct an energy balance
- Financial analysis and project assessment tools
- Site energy team training materials and guidance, including modules focused on energy basics and specific energy equipment and processes such as heating and cooling
- Library of best practices and examples
- Monthly Energy Champion Network meetings to connect and support new and existing Energy Champions
- Internal Energy Champion website
- Spreadsheet Version of 3M Energy Cost Reduction Projects Database
- Training supplies (Kill-A-Watt meters, shirts, photos)

MEASURING SUCCESS

Cummins has implemented a global energy scorecard to track site conformance to the Energy Champion Program's objectives. Sites are scored on: 1) having a trained Energy Champion on site; 2) having implemented a site energy team; 3) having a current energy balance; and 4) conducting energy treasure hunts at least twice annually. These elements are audited and reviewed through the Cummins Enterprise-wide Environmental Management System.

OUTCOMES

Over 100 staff were trained in the US and UK through 2010, and an additional 89 staff were trained in 2013, including staff from U.S., U.K., India, Mexico, Germany and Romania sites. While difficult to quantify the exact benefits of the program, the initial launch helped reduce energy consumption by 5-10% at participating sites through a combination of facility and equipment upgrades, enhanced management practices, and low cost and no cost improvements identified through efforts such as energy treasure hunts, compressed leak audits, Kaizen and Six Sigma projects.

