Partnering with the Supply Chain for Improved Energy Efficiency of Products

Summary

As the largest supplier of equipment for semiconductor, photovoltaic solar cells and flat panel displays, Applied Materials saw an opportunity to realize significant energy savings across multiple industries by joining the EICC®'s Environmental Sustainability Working Group and participating in the EICC's Carbon Reporting System. By using the EICC's tool, Applied Materials seeks to minimize the energy intensity of their products by approaching energy efficiency as a fiscal imperative and competitive environmental strategy. Applied Materials currently Co-Leads the Environmental Sustainability Working Group.

Background

Applied Materials, Inc. is the largest supplier of the tools, services and equipment required to manufacture advanced semiconductor, photovoltaic solar cells and flat panel displays. Its products use considerable amounts of energy. For Applied Materials and their customers, energy efficiency is as much a fiscal imperative as it is a competitive environmental strategy. The clear intersection of those values provides compelling opportunities to pursue measureable improvements. Applied Materials endeavors to minimize energy intensity of its products and leverage key relationships to encourage more efficient design throughout their supply chain.

Applied Materials joined the EICC to utilize EICC tools to enable best practices within the company. They utilize the EICC Carbon Reporting System to help engage its suppliers on their carbon accounting and improve its ability to collect data and report. Ultimately, this helps Applied Materials to heighten its awareness of its suppliers and has resulted in a positive change in both its supplier expectations and a reduced carbon dioxide (CO_2) footprint at the supplier sites.

Key Elements to Carbon Reporting in the Supply Chain

Applied Materials' goal is to do business with suppliers who share the company's vision and goals to reduce environmental impact of the electronics industry by sourcing components that require less energy to operate. Applied Materials uses its newly created Green Procurement Guidelines with suppliers to reduce the overall energy profile of the products with the greatest impact. Over the course of the initiative, Applied Materials' engineers discovered that smarter energy efficiency translates to better product design and that they can offer a superior product to customers while reducing energy costs within their own labs. However, they needed a better way to track and report internally on the carbon impact.

COMPANY PROFILE

HEADQUARTERS: Santa Clara, California, USA
LOCATIONS: Global
INDUSTRY: Semiconductor manufacturing equipment
FOUNDED: 1967
EMPLOYEES: 12,700
ON THE WEB: www.appliedmaterials.com

CHALLENGE

Improve the energy intensity of Applied Materials' products through supply chain engagement in energy efficiency.

SOLUTION

Assist in the development of the EICC's Carbon Reporting System; deploy across Applied Materials' supply chain.

BENEFITS

Use of the EICC's Carbon Reporting System provided a:

- Simplified tool that was easy for suppliers to understand and use
- Systemic solution for Applied Materials' employees responsible for tracking and reporting carbon impact of products
- Method of supplier engagement focused on collaboration and data sharing

At its first attempt, Applied Materials circulated a one-page questionnaire to start the discussion with its suppliers. Applied Materials faced several challenges, namely the capability of suppliers to fill out the tool and whether the request to complete the questionnaire found its way to the right people who could answer it. After a low response rate, Applied Materials turned to the EICC Carbon Reporting System tool. The tool, which Applied Materials helped develop and pilot, proved to be elegant in its simplicity and improved Applied Materials' ability to systematically reach out to its suppliers rather than reaching out through ad hoc or one-off communications.

The focus on environmental issues reinforced the supply-chain strategy of partnering with companies who are committed to a company's core values. At Applied Materials, by focusing on carbon tracking, reporting and energy efficiency, it also fostered the evolution of key components which have made some of Applied Materials' tools 25-35 percent more efficient, aiding future efficiency improvements.

Key Challenges

Performance requirements of fabrication equipment are very demanding—design engineers can be reluctant to make any changes for fear of degrading the results. At the outset, Applied Materials faced the challenge of negotiating energy efficiency upgrades which would not undermine their suppliers', and their own, commitments to overall production cost, schedule, and quality. Creating new products that satisfy each of these traditional requirements, while incorporating environmental values, requires intellectual bandwidth and corporate buy-in up the supply chain.

By systematically deploying a way to track and internally report on carbon and energy use, Applied Materials is able to demonstrate a link to business value. Bruce Klafter, Applied Materials' Managing Director of Corporate Responsibility and Sustainability, states that "the resources consumed by our suppliers are effectively an extension of our business; we are interested in good stewardship just as in our own factories. By means of collaboration, we will hopefully identify improvement opportunities that are mutually beneficial."

Lessons learned

Applied Materials found that the key to their success in realizing significant efficiency improvements was focusing on supplier engagement strategy rather than fixating on hard energy reduction targets. Communication of the vision or objectives should be followed by data gathering, aided by the systematic yet simple use of the EICC Carbon Reporting System. Formal communication and 1:1 engagement with interested suppliers closed the loop. By starting small and concentrating on further developing relationships, Applied Materials was able to make a significant contribution to an important corporate strategy for improved energy efficiency.

More information

For more details on Applied Materials' work, please see their corporate responsibility website.

About EICC® (Electronic Industry Citizenship Coalition®)

The EICC was established in 2004 to improve social, economic, and environmental conditions in the global electronic supply chain through use of a standardized code of conduct. The EICC was incorporated in 2007 as an association to ensure greater awareness of the Code, and to expand its adoption across the industry. The EICC includes over 60 global electronics companies. For more information or to view the EICC Code of Conduct, see www.eicc.info or the latest EICC annual report.