Case Study from Spring 2007 *Carbon Copy*

EMC: Forging A Dynamic Inventory Management Plan

His years of experience in the environmental protection field have taught EMC's Director of Global Environmental Health and Safety, Kevin Biernacki, to recognize that reducing greenhouse gas emissions goes hand in hand with reducing energy, which in turn reduces costs. Companies have to reduce energy use to be competitive. Paul Sauvageau, a Senior Environmental Engineer with EMC, and Mr. Biernacki outline the steps they took to successfully create EMC's Inventory Management Plan (IMP) for Climate Leaders, discuss the value the IMP has added to their greenhouse gas (GHG) reduction efforts, and provide insights to companies on base year reporting. Background EMC provides products, services, and solutions for information management and storage that help organizations extract the maximum value from their information, at the lowest total cost. Established in 1979, EMC is represented by direct sales and distribution partners in more than 50 countries. Based in Hopkinton, Massachusetts, EMC systems are also manufactured in North Carolina and Ireland. With 2005 revenues of approximately $9.7 billion, EMC employs more than 30,000 people worldwide.

EMC was already engaged in a number of activities prior to joining Climate Leaders that facilitated data collection of greenhouse gases. For example, as part of its ISO 14001 certification, EMC had implemented data management procedures, and was subject to state regulations which required tracking and reporting of certain air emissions associated with stationary and mobile sources at their facilities.

To further environmental improvements, EMC joined EPA's Climate Leaders Partnership in 2004. "The program offers the structure, support, and technical expertise that is essential for a successful GHG management program. Also, joining the Climate Leaders program provides invaluable information sharing opportunities with other Partner companies," stated Mr. Sauvageau.

Choosing Organizational Boundaries

EMC chose the "Operational Control" approach of GHG accounting to determine which facilities and mobile sources would be included in its inventory. As Mr. Biernacki commented, "When you have control of a site, you have the control to make changes."

EMC discussed its corporate facilities with in-house real estate and regional facilities managers to determine the facilities for which it had operational control and focused on those sites. EMC leases space for its small sales offices over which the company does not have operational control. Since these small office locations contribute an insignificant amount to its overall GHG profile, EMC decided it was not practical to include these sites in the GHG management program. Instead, EMC has focused its efforts on larger facilities where it has infrastructure ownership and dedicated onsite staff in place to implement energy conservation measures.

Developing an Inventory Management Plan

Through Climate Leaders, EMC measures GHG emissions for its U.S. sites. In compiling the IMP, EMC evaluated its emission sources and existing tracking procedures, and documented new procedures for developing their emissions inventory. For example, the company:

1. Discovered that many of its Facilities Groups were already heavily engaged in implementing energy conservation projects;
2. Identified the key personnel responsible for managing facilities data related to GHG sources at EMC properties;
3. Verified site utility accounts and made necessary changes;
4. Evaluated electricity consumption of Data Centers and lab space verses office and manufacturing space; and
5. Improved organization and tracking of data for each GHG emission source.

EMC now tracks consumption of electricity, diesel fuel, natural gas, jet fuel, and fleet vehicle mileage, and from this data determines the best opportunities for reductions. The IMP process has also helped encourage action within the company by bringing employees from different units together to discuss how to measure and reduce emissions.

Inventory Management as a Dynamic Process

After an initial IMP was completed based on its 2004 facilities, EMC recognized the plan needed to be updated to take into account significant business changes, including major business acquisitions and building divestitures. After making these adjustments, EMC chose to use 2005 for the base year of its goal, rather than 2004, as it became clear that 2005 better represented its business operations and baseline inventory.

Setting a GHG Reduction Target

Once the IMP was completed, the company conducted a series of meetings focused on reduction goals with EMC facilities staff. Because the IMP process had already familiarized staff with GHG management and created transparent tracking procedures, the goal-setting process had a strong foundation from which to launch.

The meetings with regional facility managers focused on identifying past, existing, and planned energy conservation initiatives at various campuses. From discussions with the Real Estate and Facilities Group, it became clear that the most meaningful indicator of energy use at EMC facilities would be an occupied-square-foot normalization factor. One of the challenges in developing this goal was the amount of information required to track the normalization factor. EMC also found that setting a goal with a square-foot normalization factor was challenging given the relatively low occupancy rates in some of its existing buildings. Therefore, the process had to take into account plans for concentrating business activities into less building space, which might increase energy consumption per square foot, as well as consider energy efficiency projects being implemented by regional facilities staff.

Together with the IMP process, setting a corporate-wide GHG reduction goal took EMC one year to complete. EMC set a GHG reduction goal of 8 percent over 7 years normalized by occupied square footage.

Implementing Greenhouse Gas Reduction Projects

EMC is exploring a variety of energy efficiency options for its facilities as part of its overall GHG management strategy, including installation of office light sensors, high-efficiency boilers, and computer monitor energy-saver functions. Ongoing initiatives include high bay lighting replacement; new chiller set back temperatures; process changes to maximize product Environmental Testing Room usage and thereby reduce electricity usage; recovery of heat generated from testing and operation of EMC electronic products to provide building heat; and reduction of static air pressure in air handling units to increase fan efficiency. EMC also actively participates in EPA's ENERGY STAR Enterprise Server and Data Center Energy Efficiency initiative and in The Green Grid organization committed to improving overall power efficiency in the technology industry, starting with data centers. The company is communicating these efforts to employees through the company-wide newsletter, and the employee feedback is overwhelmingly in favor of the reduction projects. Dan Fitzgerald, Vice President of Global Facilities and Real Estate, comments that "[A]dditional reduction opportunities exist at some of our facilities, and, with welcome guidance from EPA, we continue to identify solutions that will further reduce our greenhouse gas emissions."

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