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GHG Project Case Study

Innovation at Kodak: How GHG Reporting and New Management Practices Save Energy and Money

Eastman Kodak Company is a multinational corporation with manufacturing operations in thirteen countries and a global workforce of more than 50,000 people. Its core businesses include the development and production of digital and traditional imaging systems, including digital cameras, photographic film and paper, imaging chemicals and coatings, health care systems and diagnostics, and graphics communications systems. The company is currently engaged in several programs to reduce its use of energy and its emissions of greenhouse gases (GHGs). Nearly 98 percent of the company's emissions of CO2 come from the combustion of fossil fuel, so they are logically the focus of its initiatives.

In 1999, Kodak began a corporate GHG reduction program that cut its emissions by 17 percent (on an absolute basis) over a five-year period. This successful first attempt at reducing GHG emissions spurred the company to set additional reduction goals and then, in 2004, to join the U.S. Environmental Protection Agency's Climate Leaders Partnership. As a Climate Leaders Program participant, Kodak committed to set a corporate-wide GHG reduction goal, prepare a GHG inventory, and report its emissions.

In addition to its participation in the Climate Leaders Program, Kodak also is a member of the California Climate Action Registry (CCAR), a nonprofit voluntary registry for GHG emissions that sets baselines against which reductions may be measured in the context of government programs or markets for tradable "carbon commodities." The registry helps members develop and manage a GHG emissions inventory and may also enable them to obtain early action credits in future state, federal, national, or international mandatory emissions programs.

Kodak's voluntary commitments, including its participation with EPA and CCAR, have pushed it to find opportunities for cost-effective reductions through gains in efficiency. To this end, Kodak implemented a corporate-wide energy initiative through its operating system approach, a manufacturing process modeled on Toyota's productivity system. From the Japanese terms kai, meaning "change," and zen, meaning "for the better." Kodak's kaizen approach places cross-functional specialists on internal energy audit teams that then seek to improve the energy efficiency of existing manufacturing processes. These eight- to ten-member cross-functional teams are made up of technical experts, systems specialists, and operations personnel who follow a set process to improve energy use by changing the actions that are causing waste and inefficiency.

On the first day of a three- to five-day process, the kaizen teams inventory energy requirements, analyze existing operating conditions, and record possible areas for improvement. On the second day, the teams brainstorm energy conservation measures and make those changes that can be made immediately with no additional cost. After making these energy-saving operating changes, the teams brief senior management on the sessions' accomplishments, which are

then continually verified, measured, and repeated (see figure 1).

The energy kaizen teams have been successful. By making investment-free changes, such as time of day climate and lighting control, eliminating unnecessary ventilation exhaust, and introducing other best-management practices, Kodak anticipates yearly electrical energy savings of over $1,000,000 with no additional capital spending. Kodak has also invested in energy efficient motors, pumps, and HVAC equipment.

Currently, Kodak has an institutional emissions reduction goal of 10 percent by 2008, using 2002 as the baseline year.

Through its participation in Climate Leaders and CCAR and its use of the kaizen approach, the company reduced its emissions by 10 percent from 2002- 2005, putting Kodak ahead of schedule to meet the 2008 target. Kodak estimates that it was able to make these reductions in greenhouse gas emissions and receive a financial benefit of more than $12 million in energy savings from gains in efficiency. Although Kodak is meeting the goal early, the energy and greenhouse gas reductions will continue and future more challenging goals are being developed.

Figure 1: Steps in the *Kaizen* System