



**Evonik Cyro LLC  
STEP-UP Program Progress Report  
May 2009**

**COMMITMENT TO ENVIRONMENTAL MANAGEMENT SYSTEMS PATHWAY:**

Our written agreement states: *“The facility continues its ISO 14001 certification by participating in annual 3<sup>rd</sup> party audits that ensure EMS continues to meet the systems standards set by ISO 14001.”*

Evonik Cyro LLC continues to maintain a third party certified Responsible Care RC14001 / ISO 14001 Environmental, Health, Safety and Security Management System (EHSSMS). Our current RC14001 / ISO 14001 registration is from November 6, 2008 to November 5, 2009.

**WORKERS AND COMMUNITY PATHWAY:**

*“Cyro will continue to foster openness in dealing with stakeholders, taking into account public and employee inputs.”*

As reported previously, Evonik Cyro maintains EHSSMS and STEP-UP related two-way communications with employees and the public. This is conducted via information posted on our website, employee training, standard operating procedures, routine communications through e-mail, meetings, bulletin boards, and “C-TV” (in-house TV monitors with Evonik Cyro information). Evonik Cyro is active on the York County Emergency Planning Committee.

As part of the Responsible Care 14001 EHSS Management System, Evonik Cyro created a document called EHSS-08 Consultation and Communication. This procedure defines the process for:

- a. Internal environmental, health, safety and security (EHSS) communication/awareness.
- b. External environmental, health, safety and security communication with external interested parties, such as regulatory authorities and the public/local community groups.
- c. Employee involvement in the development and review of policies and procedures.
- d. Employee consultation where changes affect workplace health and safety.
- e. Providing openness in dealing with stakeholders, taking into account public and employee inputs.
- f. Communicating EHSS risks, performance, the organization's impact on human health and the environment, and future plans.

## **ENERGY PATHWAY:**

*"Cyro will reduce emissions resulting from energy usage by 15%."*

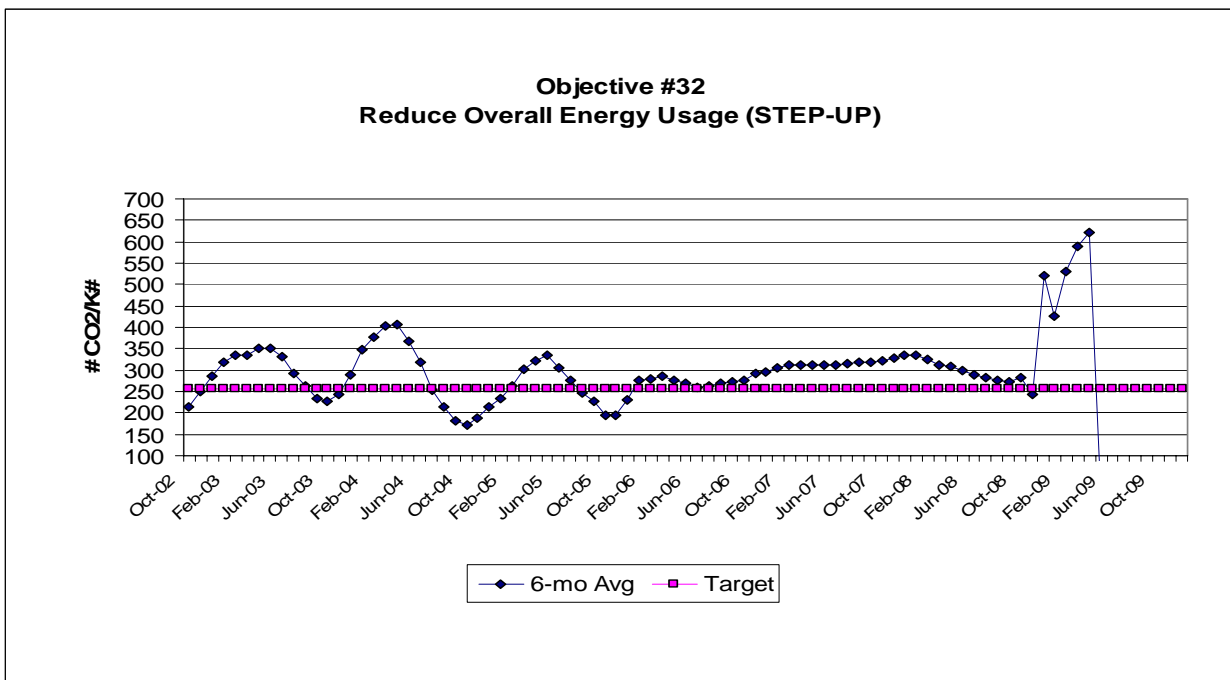
Activities within the Energy Pathway have included:

- Michael Mayhew, an Energy Efficiency Engineer for the Maine Public Utilities Commission wrote in his August 16, 2004 energy audit report that Evonik Cyro's low electric rates and the process heating fuel energy to electric energy ratio make it difficult to justify on-site generation using a combined heat and power plant.
- We insulated our process catalyst building.
- Reduction in Biofilter humidifier steam energy by 10 degree F. will reduce energy and save approximately \$8,900 annually at present #6 fuel energy costs. A reduction in Biofilter bed back pressure resulting from a decrease in media temperature will also reduce fan power consumption by approximately 10% which will yield an additional \$1,310 annually to electrical power savings.
- Installed 12 exterior insulated doors in locations around Building One where custom plastic loose fitting doors existed.
- Replaced all windows in the office building.
- The Multi-Functional Coating department's humidification system is now turned off when not needed, saving the energy equivalent of \$70,000 per year.
- We replaced incandescent light bulbs at eyewash stations with compact fluorescents. This was an employee idea that resulted in an annual energy savings of \$1775.
- In 2007 an eight person, week-long Corporate Site Excellence audit reviewed our energy use and energy saving projects. They determined that the facility has been successfully pursuing energy reductions and that an additional energy audit was not necessary.
- We replaced our Giebel Air Dryer with a more efficient unit. Annual energy savings estimated to be \$1000.
- With assistance from 'Efficiency Maine', Building #1 is purchasing new 100 horsepower energy efficient autoclave motors as they fail or need to be rewound (long term project). The most recent purchase is in May 2008.
- Evonik Cyro achieved horsepower reductions with our autoclave water pumps by changing the water spray nozzles used to cure our acrylic. This project resulted in an energy reduction and corresponding annual savings of \$11,600 per autoclave. Three were completed in late 2006 and three completed in 2007. Two additional autoclaves are scheduled for 2008.
- In the first quarter of 2008 Evonik Cyro re-lamped the Building 1 Cell Cast department, the Finish & Packaging department, and the warehouse with more efficient lighting. A combination of technological improvements, energy rate increases, and monetary incentives provided the means to go forward with the project. Energy savings are expected to be \$50,000 per year.
- Evonik Cyro's Cell Cast department has changed from a 24 hour operation to a two shift operation and the lights are now being shut off during the off shift.

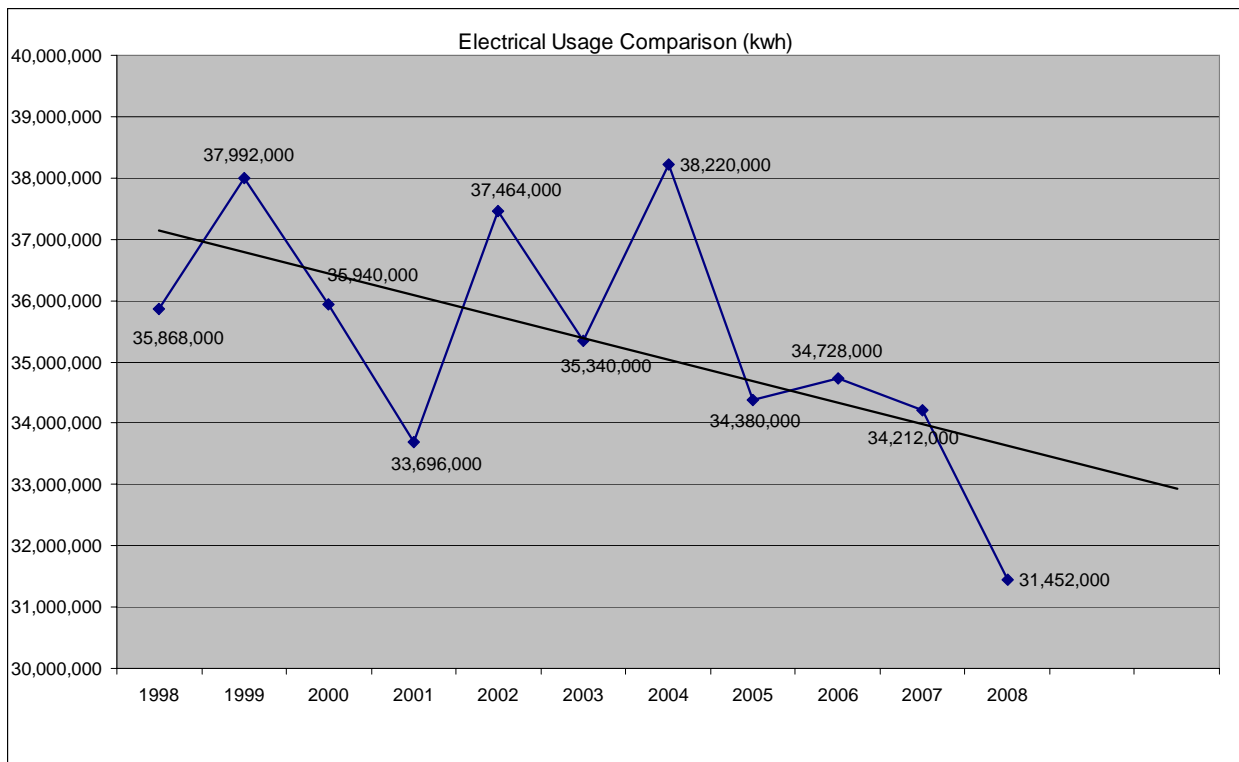
Most recent activities include:

- Two ovens were retrofitted with different water spray nozzles allowing the impeller size to be reduced and a savings of 78 HP.
- Reduced use of water circulation pump when oven cycle was not operating. When the oven cycle is complete, the oven circulation pump only runs for 5 minutes per hour instead of constantly being on. This was done on one oven and CYRO will determine if others should be done.
- Completed corporate energy audit and currently researching findings, including possibly changing a boiler to dual fuel use with natural gas.
- Replaced 1/3 of the biofilter bed, reducing backpressure and the horsepower needed to send emissions to the biofilter.

The chart below shows Evonik Cyro's total energy usage on a six month rolling average, as adjusted for production. The recent increase is due to reduced production and not increased electrical use.



The next chart shows the reduction of total annual energy when not adjusted for production and reflects the successes of recent energy reduction projects in addition to recessionary changes. The majority of electrical equipment must operate, regardless of production level changes.



#### TOXICS REDUCTION PATHWAY:

*"Cyro will reduce the amount of hazardous waste sent offsite by 20%"*

Activities within the Toxics Pathway include:

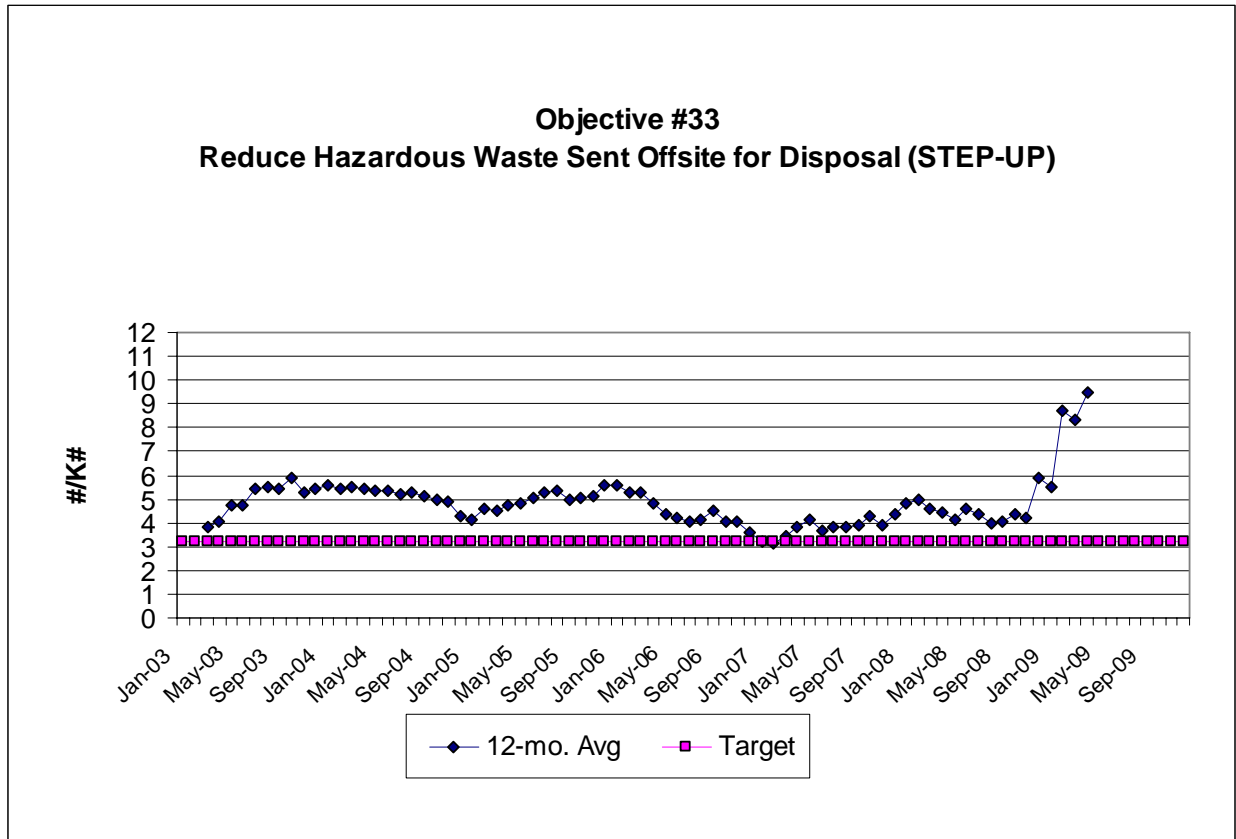
- Developed new cleaning procedures in Color Lab to eliminate the generation of solid hazardous waste. This utilizes a new cleaning material that is nonflammable and non-hazardous.
- Removed a solvent based moisture analyzer from KP lab and replaced it with a non-solvent unit.
- Cell Cast employees were trained in the difference between hazardous and non-hazardous absorbent rags and are now segregating them. (Evonik Cyro previously took a more conservative approach of putting all haz and non-haz absorbents in the hazardous waste drums.)
- MFC employees were trained in the difference between hazardous and non-hazardous absorbent rags and are now segregating them. Identification signs were placed by waste containers.
- Drip trays were fabricated and installed in the Cell Cast pouring room so syrup dripping from the cells is captured and reused to make product instead of being cleaned with rags and disposed of as hazardous waste. This resulted in a decrease of 12,000 pounds of hazardous waste per year.
- An employee's idea was implemented to change the clamps that hold MFC sheet through the coating process, resulted in a savings of 1400 lbs/year of haz waste.
- The facility continues to research methods to reduce FF Vacuum Condensate waste. The DEP's Peter Cooke provided contact information for a company who provided organic/water separation at a ski resort. Information was sent to the company but they were not able to offer assistance. Evonik Cyro also discussed the issue with a sister company (Roehm) and with a sister facility in Germany, but was not able to realize waste reductions.

- Bulk MMA waste stream and WFE sludge samples were sent to a company that might have been able to use the materials for raw material in their manufacture of acrylic shot beads. Testing was conducted. The company did not pursue the project.

**Toxics Reduction Pathway:**

The chart below shows Evonik Cyro’s pounds of hazardous waste generated per 1000 pounds of production on a six month rolling average.

Recent increases are due to reduced production and not increased waste.



**SOLID WASTE PATHWAY:**

*“Cyro has set a goal to reduce the amount of total solid waste disposed by 15%...”*

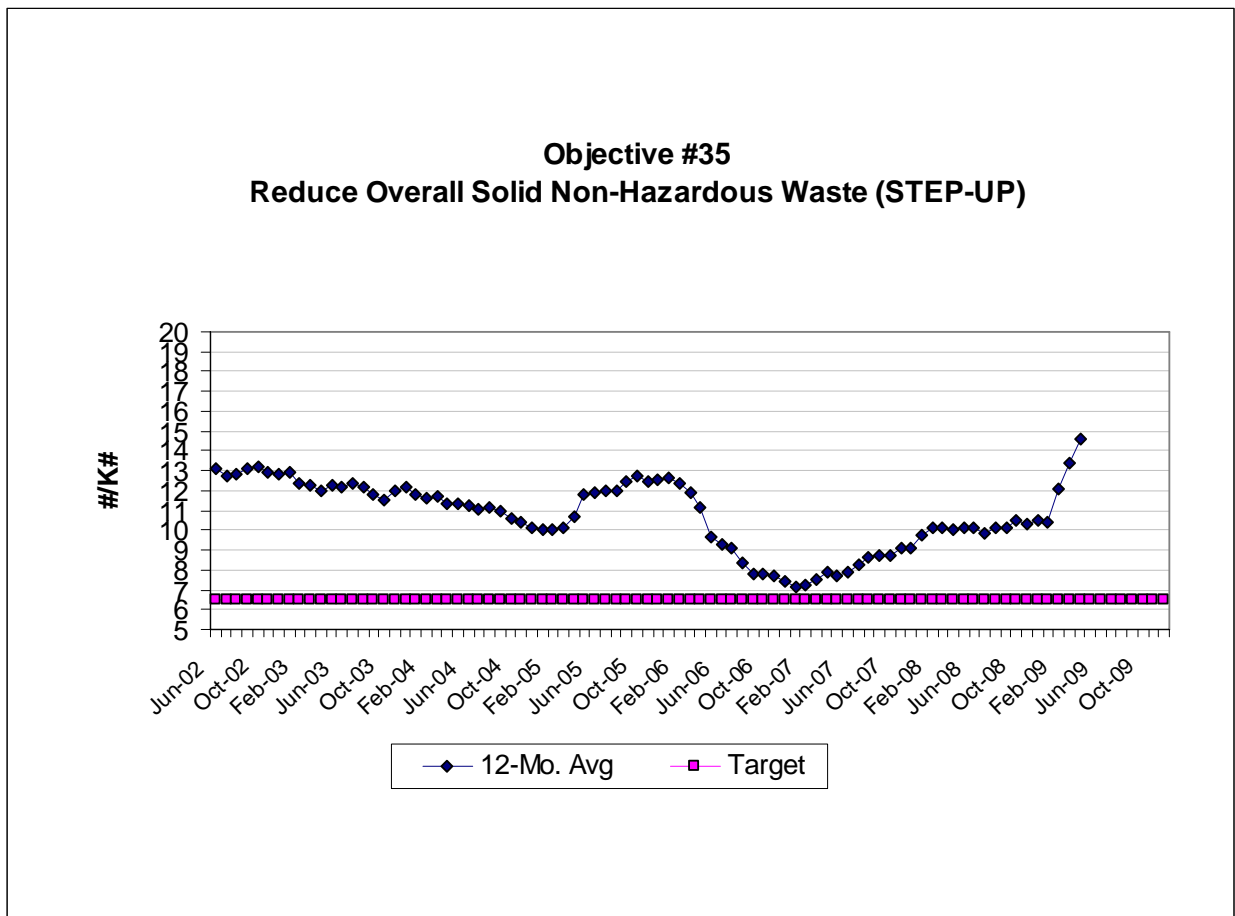
Activities within the Toxics Pathway include:

- Created new Environmental Management Program for non-hazardous waste pathway, started in 2007.
- Ensured historical data is correct. Consistent data will be tracked going forward.
- Created employee educational “Dashboard” about Recycling. Topic was discussed with all employees.
- Updated office recycling guidelines & posted recycling criteria at recycle containers.
- Contacted waste handling company and questioned recycling options.
- The poly bales and Giebel department yard scrap will now go to Plan-It Recycle, at no additional cost.
- Posted the two dumpster compactor doors with a list of what is not allowed to be placed in the dumpsters.

- Evonik Cyro continues to utilize Total Productive Management (TPM) that includes 5S programs and systematic cleaning to keep the workplace clean and organized. The cleaning process continues to generate large amounts of non-hazardous waste. It is expected that once all the areas have incorporated the TPM program and achieved the new high levels of housekeeping, then the non-hazardous waste quantities will decline below previous levels.

Solid Waste Pathway:

The chart below shows Evonik Cyro's pounds of hazardous waste generated per 1000 pounds of production on a six month rolling average. The recent increase is due to reduced production and not increased waste.



Evonik Cyro LLC is an Evonik Degussa Corporation group company.