

Achieving Pollution Prevention Success: Northern Illinois Regional Energy, Economy, and Environment Project

Grantee: Illinois Sustainable Technology Center

Title: Northern Illinois Regional E3 Project

EPA Approved Funding: \$61,750

Total Combined Funding (Federal and Applicant): \$65,000

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Project Description

A 2015 Pollution Prevention (P2) Source Reduction Assistance Grant to the Illinois Sustainable Technology Center (ISTC), supported Energy, Economy, and Environment (E3) assessments at five facilities to identify opportunities for: energy, water and hazardous material conservation; waste reduction; and, greenhouse gas (GHG) emission reductions. ISTC along with Illinois Manufacturing Extension Center (IMEC), Commonwealth Edison Company (ComEd) and Nicor Gas combined expertise to provide comprehensive resources to assist Illinois industrial facilities in Cook and DuPage Counties. ISTC incorporated IMEC's Lean and Clean, Waste to Profit and Green Supplier Network models into the E3 process to augment their P2 program.

Project Approach

The project team worked directly with regional organizations including the Calumet Area Industrial Commission (CAIC), the Cook County Department of Environmental Control, the South Suburban Mayors and Managers Association and DuPage County to perform outreach and marketing of this program. The team also reached out to industrial trade groups and consortiums, such as the Chicago Metro Metal Consortium (CMMC).

To identify P2 and E2 opportunities, the team's initial outreach focused on companies in ISTC, IMEC, ComEd and Nicor's existing database, particularly those companies that worked with ISTC in the past and those participating in the Green Suppliers Network. ComEd and Nicor identified large energy users within their database to target for outreach. The team and project partners introduced the program to Cook County and DuPage County industrial facilities at various trade, economic and professional organizational meetings. One hundred and fifty facilities, project partners and supporters in Cook and DuPage Counties were contacted. The program was further communicated by cold calls and e-mail distributions (including pamphlets) to potential industrial facilities throughout Cook and DuPage Counties.

Assessment Activities

Eighteen qualifying visits were conducted. Five full E3 assessments were completed (a full E3 assessment consists of project scope agreement, document submission, on-site assessment, report writing, on-site findings report presentation and final report submission). Economy recommendations included ideas to improve workflow and increase health and safety. Energy recommendations focused on reducing kilowatt hours of electricity and therms of gas used. Environmental recommendations focused on conserving water, reducing wastes, and improving workplace safety and general business practices. A total of 211 recommendations were made and 46 of those recommendations were implemented.

ISTC's engineers have worked with facilities to apply the Accelerated Diffusion of Pollution Prevention Technologies (ADOP2T) model. ISTC has proven that the ADOP2T model accelerates the rate of full

implementation of recommendations, as the complexity of the proposed technology increases. Pilot tests and demonstrations allow for facility operational personnel to experience technology in action, become educated on its operation, and evaluate performance results before a commitment is made to implement recommendations.

Technology demonstrations were held at three facilities:

Location 1. The company used compressed air at a number of operator workstations to drive pneumatic tools. The pneumatic tools were subsequently detached from feeder hoses and the open-tube guns used to clear debris from the work piece and to blow debris from each workstation during end-of-day cleanup were replaced with an alternative. ISTC demonstrated OSHA compliant safety blow off guns that are significantly more efficient and safer than the open-tube guns.

Location 2. The company operators used open-tube compressed air guns to dry parts after processing. ISTC demonstrated OSHA compliant safety blow off guns at this location.

Location 3. The company used fluorescent T8 lighting in various locations throughout the facility. The team demonstrated LED “drop-in” replacements compatible with existing ballasts, which achieve up to 40% in energy savings.

Lessons Learned and Results

The project team supported facilities to implement E3 assessment recommendations. Implementation of recommendations at the facilities resulted in the following environmental benefits: 86,789 gallons of water conserved and energy conserved equivalent to 162 MTCO_{2e} GHG emissions reductions. The conservation of resources resulted in cost savings of \$14,424 in the participating facilities.

In addition, ISTC followed up with facilities that had been assessed under previous EPA supported E3 grants in Cook and DuPage Counties. These facilities reported implementing projects that had been recommended during the previous grants. The environmental benefits achieved as a result of the previous grant support they received include 7,646 lbs of hazardous and 1,920,000 lbs of solid waste reduced, 369,240 gallons of water conserved and energy conservation that resulted in 554 MTCO_{2e} GHG emissions being reduced. These resource conservation activities resulted in \$87,181 in cost savings for these facilities.

ⁱ Pollution Prevention involves the reduction or elimination of pollution at the source by modifying production processes, using less toxic substances, implementing resource conservation techniques, conserving water and energy, and reducing greenhouse gases. Energy and water conservation, hazardous materials and greenhouse gas reductions, and cost savings are all benefits of a P2 approach. EPA provides grant assistance to states and tribes to help businesses identify and implement P2 practices.