

Economy, Energy & Environment (E3) Project – Intertape Polymer Group/Danville, VA

Company Profile:

[Intertape Polymer Group Inc. \(IPG\)](#) is an acknowledged leader in the packaging industry, manufacturing a broad range of packaging products and systems that reflect the needs of both its industrial and retail customers. These include one of the largest offerings of tape available: pressure sensitive and water-activated, carton-sealing, masking, filament, flat back, cloth/duct, double-coated, high performance specialty, electrical, automotive, and HVAC tapes. Additional products include shrink film and stretch film as well as carton-sealing equipment, ink jet printing systems and labeling systems.

The IPG Danville facility is a combination of two focused factories: a vertically integrated (bi-oriented polypropylene film extrusion [BOPP], adhesive coating, and tape converting) facility that manufactures carton sealing tape and acrylic pressure sensitive adhesive tapes; and a factory that manufactures stretch wrapping films. Today, the facility employs 280 people and has approximately 300,000 square feet under roof.

Situation:

In support of the Danville/Region E3 EPA program, GENEDGE conducted an October 2012 E3 assessment project with the local branch division of IPG. This E3 project scope consisted of an on-site review of operations to identify opportunities for improving productivity, reducing environmental impacts and energy intensity.

Response:

GENEDGE provided an E3 trained consultants in partnership with an appointed in-house IPG expert to complete the following as a result of the project:

- Facilitation of a facility walk-down and direction for pre-work including data collection of the following baseline metrics, as appropriate for the facility:
 - Energy Consumption
 - Water Usage
 - Air Emission Reduction (including CO₂ if desired)
 - Solid Waste Reduction
 - Hazardous Waste Reduction
 - Toxic / Hazardous Chemical Use Reduction
 - Raw Material usage
 - Water Pollution Reduction
 - Various production output, capacity and productivity metrics
 - Others as decided upon by team
- A walk through E3 assessment of the facility.
- An E3 Final Report listing lean, energy and environmental recommendations and opportunities for improvement.

Results:

The Danville IPG facility continues to demonstrate excellence in environmental stewardship and energy efficiency. The facility achieved recertification for ISO 14001 and is a major contributor to the corporate energy team. The Danville facility has won the IPG Best Energy Management Program for the past two consecutive years. The U.S. Environmental Protection Agency (EPA) recognized IPG as a 2014 ENERGY STAR Partner of the Year for strategically managing and improving the energy efficiency in its operating locations. The Danville Energy Team continues to use ENERGY STAR tools and resources to improve their energy performance, save money, and help protect the environment for future generations. During the second annual energy treasure hunt, the Danville facility identified \$134,000 in energy savings that will reduce greenhouse gas emissions by 796 metric tons. Combined with the treasure hunt from 2012, the energy team has identified \$352,000 in savings that will reduce carbon emissions by 2,000 metric tons over the past two years. The Danville facility is very active in the community to promote energy efficiency as well. IPG Danville has also participated in other local manufacturers' treasure hunts. Through collaboration with local manufacturers and Danville Utilities, a local chapter of the Association of Energy Engineers (AEE) was formed. Two IPG Danville energy team members are board members for the AEE Danville Chapter. Additionally, the plant energy coordinator worked with Averett University students and the local Boys and Girls Club of America to teach underserved children about energy efficiency and conservation.

Additional tools used to improve production and quality are Six Sigma, mistake proofing, failure mode effect analysis, Total Quality Management, employee problem solving teams, PDCA, manual and computerized SPC, and Design of Experiments. The plant has certified one Master Black Belt, eight Black Belts, five Green Belts, and seven Yellow Belts. ISO 9001, Lean Six Sigma programs, and Pillar team engagement have led to reduced variation in the manufacturing processes and superior quality performance. Production has increased 4.36% for both tape and stretch film products over the past three years while reducing energy intensity by 7% and VOC emissions by 6.14%. During this time, the plant has seen a 62% increase in profitability.

Results Summary:

- Recertification for ISO 14001
- \$352,000 in energy savings
- Reduced carbon emissions by 2,000 metric tons over the past two years.
- Production has increased 4.36% for both tape and stretch film products over the past three years
- Reduced energy intensity by 7%
- Reduced VOC emissions by 6.14%.
- 62% increase in profitability.