

E3 Success Story



ILLINOIS SUSTAINABLE
TECHNOLOGY CENTER
PRAIRIE RESEARCH INSTITUTE

AMERICAN STANDARD CIRCUITS, INC.



Founded in 1988, American Standard Circuits, Inc. (ASC) is rapidly emerging as a leading manufacturer of advanced printed circuit board (PCB) solutions worldwide. ASC makes flex, rigid-flex, RF/microwave, and metal-backed PCBs for a variety of end markets, and specializes in manufacturing all of its technologies in a time-critical environment. Their West Chicago facility is capable of achieving single-day turnaround

times. ASC has state-of-the-art process control systems and certifications, including ISO 9001:2008 and military certification (MIL 31032), and has rigorous quality control measures in place.

SITUATION

ASC's overall goals were to reduce process waste and to determine cost-saving and efficiency opportunities for their energy-intensive equipment. ASC utilized Illinois Sustainable Technology Center's (ISTC) technical assistance staff to facilitate a team-based E3 (Economy, Energy, and Environment) assessment – three key areas in which ASC's executive team was looking to drive efficiencies.

THE E3 PROCESS

This E3 program, developed in part by the U.S. Environmental Protection Agency and the U.S. Department of Energy, is designed to improve production and profitability while reducing energy usage and environmental impact. The E3 review involves a hands-on assessment of production processes, recommendations for improvement, and assistance with implementation.

Three Illinois organizations teamed up to provide this assistance to ASC. **ComEd**, a subsidiary of Exelon Corporation, provided recommendations on energy improvements. **ISTC** focused on environmental performance. The **Illinois Manufacturing Excellence Center (IMEC)** provided economic and process efficiency advice. The E3 assessment team reviewed the entire facility with particular emphasis on the drilling center and plating/water treatment area.

ASC showed its commitment to the E3 process by involving top management, engineers, and floor supervisors in assisting the E3 team. Following the assessment, the team reviewed its recommendations with ASC decision-makers and produced a final list of specific action areas in each of the three areas of focus.



E3: ECONOMY - ENERGY - ENVIRONMENT
A SUSTAINABLE GROWTH STRATEGY

KEY STATS

Implemented Savings



102,404 kWh electricity consumption reduced



998,400 gallons of water saved



101.9 tons of CO₂ emissions avoided



\$16,952 annual savings

About ASC

Founded: **1988**

Headquarters: **West Chicago, IL**

of Employees: **110**

Industry: **Advanced PCBs (Printed Circuit Boards)**

NAICS Code: **334412**

Number of E3 Recommendations Made

ENERGY	6
ECONOMY	21
ENVIRONMENT	6

This E3 Success Story is part of a series of case studies, produced by ISTC, exploring environmental and business improvements which are repeatable at other facilities and organizations.

Please contact ISTC for more information: istc-info@illinois.edu

www.e3.gov

Recommendations Implemented



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TOTAL E3 RECOMMENDATIONS

Here is the full list of potential improvements at ASC, identified through the E3 process:

Energy Use

- ✓ Lighting retrofits
- ✓ Air compressor efficiency
- ✓ HVAC optimization
- ✓ Process cooling improvements

Water Use

- ✓ Auto shut-off of water rinse station

Waste Reduction

- ✓ Acid and solvent recovery and reuse

Lean Manufacturing

- ✓ Visual Management
- ✓ Kanban
- ✓ 5-S

ABOUT THE E3 PROJECT

The Regional ISTC/IMEC Waste to Profit E3 Project was funded by the US Environmental Protection Agency and supported by The County of DuPage, Illinois and ComEd, a unit of Exelon Corporation.

Find out more at: www.e3.gov



ENERGY

Lighting - ASC made efficiency improvements which included replacing old T12 fluorescent fixtures and metal halide lighting with LED lighting, replacing standard exit signs with LED signs, and installing occupancy sensors.

Annual Savings: 80,583 kWh / \$5,625

Chillers - ASC reprioritized operation of its chillers, relying on the newer, high-efficiency chiller instead of the older unit.

Annual Savings: 16,091 kWh / \$1,123

Compressed Air - ASC replaced open tube air guns with OSHA-compliant, energy-efficient safety air guns.

Annual Savings: 5,720 kWh / \$500



ASC replaced inefficient lighting fixtures with LEDs manufactured by a fellow Illinois-based company, A2Z Green Lighting

ENVIRONMENT

Water Conservation – ASC installed automated flow controls on a little-used scrubbing station, eliminating continuous flow of rinse water when not in use.

Annual Savings: 998,400 gallons of water / \$10,000



Sensor on etching machine to save water



High-efficiency chiller

“This review highlighted areas where we could get more cost effective and environmentally friendly. The various activities were presented to the ASC team so that we were easily able to prioritize the activities. A lot of the actions were relatively inexpensive to implement.”

- Anaya Vardya, CEO

