

# Protective Industries, Inc. (Caplugs Division)



*“Caplugs has done a number of projects with NYSERDA. We have utilized Flex-Tech Studies, custom industrial programs and direct replacement programs. All of these programs and associated projects have exceeded our expectations and cost savings. The flexibility in programs, services and offerings provided by NYSERDA have been outstanding.”*

James Heigl  
Facilities / Maintenance Engineer  
Caplugs LLC



Top: Tower skid panel in detail  
Bottom: Tower skid general



Protective Industries, Inc.  
plastic product

## Protective Industries, Inc. (Caplugs Division)

Buffalo, Erie County

### Background

The Caplugs Division of Protective Industries, Inc. is a 220,000 square foot facility located in Buffalo. The company manufactures plastic molded caps and plugs, and has approximately 250 employees working at the site. The annual electricity usage is over 9,000,000 kWh and \$721,000 per year. Natural gas usage is approximately 167,000 therms per year and \$136,000.

### Objectives

Protective Industries, Inc. worked with the New York State Energy Research and Development Authority (NYSERDA) and Clough Harbour & Associates, LLP, a NYSERDA FlexTech contractor, to conduct a three-phase energy study.

### Recommendations

The first phase recommended the installation of a new cooling tower on the production floor to provide low-energy cooling tower water year-round to reduce process load on the central chiller.

The second phase recommended replacing the existing HVAC units with high-efficiency units, insulating the Vinyl Dip Machine exhaust stacks, installing a heat exchanger to recover exhaust heat from ovens, and improving the efficiency of compressed air use.

The third phase recommended incorporating a new hot-runner mold design developed by Caplugs for use as tooling for their injection molding machines.

### Results

The cooling tower and HVAC recommendations were installed with the help of the **New York Energy Smart<sup>SM</sup>** Commercial/Industrial Performance Program. The following is a summary of the cost and energy savings:

NYSERDA provided an incentive of **\$85,174** for the installation of the cooling tower. The total project cost was \$227,000 with a simple payback, after the incentive, of 1.9 years. Results include approximately:

- \$73,000 annual gas and electric savings
- 910,000 kWh and 150 kW electric savings per year
- 10,000 therms of natural gas saved per year

NYSERDA provided an incentive of **\$88,300** for the HVAC unit replacement. The total project cost was \$176,600, and after the incentive, will have just over a 2-year simple payback. The project will result in an estimated:

- \$36,000 annual cost savings
- Savings of more than 410,000 kWh annually

NYSERDA awarded **\$250,000** for the new hot-runner mold design through PON 837, The Industrial Process and Productivity Improvement Solicitation.

- \$70,000 annual energy and operating cost savings and increased productivity
- Payback approximately three years

### New York Energy Smart<sup>SM</sup>

All **New York Energy Smart<sup>SM</sup>** programs are funded by a System Benefits Charge (SBC) paid by electric distribution customers of Central Hudson, Con Edison, NYSEG, National Grid (formerly Niagara Mohawk), Orange and Rockland, and Rochester Gas and Electric. NYSERDA, a public benefit corporation established by law in 1975, administers SBC funds and programs under an agreement with the Public Service Commission.

**New York Energy Smart<sup>SM</sup>** programs are designed to lower electricity costs by encouraging energy efficiency as the State’s electric utilities move to competition. The programs are available to electric distribution customers (residential, commercial, institutional, and industrial) who pay into the System Benefits Charge (SBC).

For more information about these services, contact NYSERDA  
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