

# PNM Business Energy Efficiency Programs

## Retrofit Rebate Case Study



### Industrial Food Manufacturer



#### Why Improve Energy Efficiency?

- 1 Cuts operating and maintenance costs and improves profitability.
- 2 Savings can help finance future improvements.
- 3 Improves customer and staff satisfaction.
- 4 Distinguishes your business as caring about environmental sustainability.
- 5 Helps you remain competitive in an ever-changing business landscape.

*"Every year as part of our ongoing sustainability efforts, we identify and prioritize improvement projects throughout our facility. Together with the expertise of energy consultants and utility company strategic energy program managers, we implement the projects and develop models to track the collective energy savings."*

Food Manufacturing Environmental Engineer

#### Overview

A long-standing, global manufacturing organization produces a wide range of consumer products across multiple categories. Its operations rely on large-scale, highly automated production systems that include specialized processing equipment, material handling systems, and high-speed packaging lines. These integrated systems support complex manufacturing workflows across multiple facilities and product lines.

The organization maintains a strong focus on operational excellence, with ongoing efforts to improve system performance, expand capacity, and enhance reliability while managing energy use and operating costs. Through routine energy assessments and collaboration with utility partners, the company identifies opportunities to improve efficiency and develops projects that align with available energy efficiency incentive and rebate programs.

#### About the Project

One such opportunity was the optimization of process cooling. The decision to move forward with the project was easy, as it only required a simple verification and calibration of sensors, then a reprogramming of settings and writing logic. The optimization happened behind the scenes without interfering with day-to-day operations. Changes were applied to one system at a time and were closely monitored to verify that there were no issues affecting processing, operations, food safety, or employee safety. The process cooling optimization saved both electric and natural gas, and realized a return on investment in 1 year.

#### Project Financials

Project Cost:.....	\$110,000
PNM Rebate:.....	\$55,000
Estimated Annual Energy Savings:.....	677,492 kWh
Estimated Annual Utility Cost Savings:.....	\$110,000
Annual CO <sub>2</sub> Savings: .....	390 metric tons
Project Duration:.....	1 year
Year Completed:.....	2025
Return On Investment (ROI):.....	1 year



## Project Details

The company planned to optimize the process cooling at their Albuquerque plant, something they have implemented across their other plants with great success.

Most cooling sections over-cool the air to dehumidify it and then reheat it, whether or not the outside air actually requires dehumidification. With the right sensors and the right programming, a typical air handling unit can only cool or only heat, and only simultaneously heat and cool when absolutely necessary.

The challenge identified was an inefficiency in the existing air handling units. These units were designed to over-cool air to dehumidify it, often to 50°F, and then reheat it to 72°F, even when outside air conditions didn't necessitate such extensive dehumidification. This "simultaneous heating and cooling" resulted in significant energy waste. To address this, the company implemented a process cooling optimization project.

The solution involved utilizing Allen Bradley Control Logix to reprogram the three finish dryer cooling sections. The new programming aims to maintain a dew point of 55°F and a supply air temperature of 72°F in the most energy-efficient manner. Specifically, if the outside dew point is below 55°F (which occurs over 7,500 hours annually), the cooling coil will be turned off and the system will only control for the 72°F supply temperature. When the dew point is above 55°F, the cooling coil will only control to achieve a 55°F dew point.

The optimization process was carefully managed, with changes applied to one system at a time and performance monitored to ensure no disruption to operations or safety. This project is expected to yield substantial energy savings, reducing both electrical energy consumption (from chilled water usage) and natural gas usage (from reheating). The estimated annual energy cost savings for this project is \$110,000 and the company received a \$55,000 rebate from PNM Business Energy Efficiency Programs. "The user-friendly application site features clear, step-by-step instructions and checklists, ensuring ease of use."



**Don't leave money on the table!**  
**Reserve rebates for your facility today.**

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