

# ENERGY PROJECT CASE STUDY

## COMPRESSED AIR SYSTEM

### Financials

- ◆ Total Turnkey Installed Cost: \$79,401
- ◆ Annual Energy Cost Savings: \$27,306
- ◆ Simple Capital Payback: 2.9 years
- ◆ Project IRR: 32%
- ◆ CO2 Equivalent Reduction : 262 tCO2e (Natl Avg Emsn Rate)

### Description of Facility

- ◆ Manufacturing facility, injection molding
- ◆ Production areas
- ◆ Assembly areas
- ◆ Warehouse areas

### System Description

- ◆ Five rotary screw oil lubricated compressors
- ◆ Total of 450 HP installed
- ◆ Compressors were located in one central area
- ◆ Compressors were connected into a common header
- ◆ Compressors were controlled on individual pressure set points

### System Opportunities/Issues

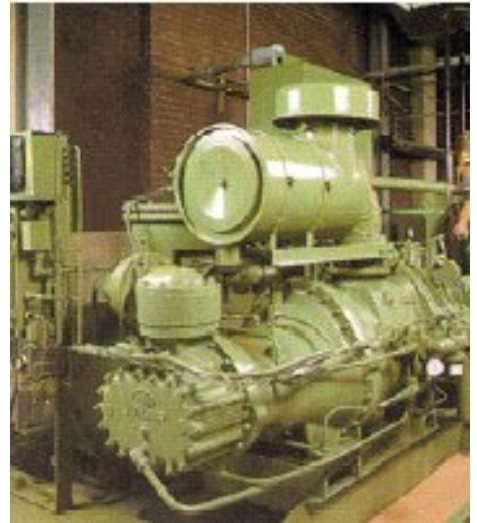
- ◆ The compressed air system supplied air to the various production and assembly equipment throughout the facility
- ◆ The analysis looked at the generation of the air by the compressors, the distribution system, and the utilization of the

### Project Description

- ◆ Installed compressor sequencing controller
- ◆ Installed additional storage capacity
- ◆ Installed a air flow controller in conjunction with additional storage capacity
- ◆ Installed interlocked shut off valves on production machines

### Project Benefits

- ◆ New Sequencing controller
- ◆ New flow controller and storage tank
- ◆ Increased control of system pressure fluctuations
- ◆ Decreased end use of compressed air
- ◆ Optimization of overall operation





## Company Overview

Solution Dynamics is focused on providing our clients with high value services to assist them with the evaluation, development, and implementation of utility related cost reduction strategies and measures. These strategies include taking into account issues such as energy cost savings, sustainability, Green House Gas (GHG) impacts/carbon footprint, and reliability. Solution Dynamics looks at facilities as a whole to evaluate both demand side and supply side strategies and solutions. The principals of the company bring over 60 years of experience in the energy industry to our clients. This depth of experience allows Solution Dynamics to operate efficiently and effectively to derive value.

Solution Dynamics works closely with our clients to look at all aspects of their energy related costs. This includes; how production processes utilize energy and other utilities, the operation and maintenance costs, which fuel is being utilized, what utility rate structures are being used, is there equipment in need of replacement, what opportunities are there for low cost and capital based improvements, and what are financial and environmental benefits. Solution Dynamics develops and implements cost reduction strategies and measures that are specifically tailored to meet the individual needs of each facility. Energy supply opportunities provide reduced costs, while demand side opportunities include both technology and operational improvements to reduce energy use and cost. This also translates into benefits that go beyond simple energy cost reduction that include newer equipment, increased reliability, improved process control, reduction in GHG impacts and the potential generation of carbon credits.

Solution Dynamics has several established programs and as a company we take on the risk of successful performance to achieve results. Solution Dynamics has unique, high value, programs that have been developed to meet our client's requirements. These programs combine the ability to identify and implement both Low Cost High Value operational types of savings along with more traditional capital based savings. We also have supply side programs that guarantee performance to eliminate the risk of our clients.

## Services Provided

Solution Dynamics specializes in the development and delivery of utility and energy consuming equipment related cost reduction opportunities and can deliver them in an efficient manner. Services provided by Solution Dynamics include:

1. Identification of high value cost reduction opportunities
2. Evaluation & development of energy strategies
3. Utility rate analysis
4. Project scope development
5. Project financing assistance
6. Detailed cost and savings analysis for professional quantification of project value
7. Development of measurement and verification plans
8. Project development for Construction
9. Turnkey project management, implementation, and commissioning of cost savings opportunities

## Results

Solution Dynamics has a very strong and sustained track record of being able to successfully develop and implement cost reduction opportunities for our clients. We excel in identifying opportunities, many of them high value, which other companies typically miss. When reasonable economic criteria are utilized energy cost reductions that range between 5% to 25% of a facilities energy cost.

## Energy Systems Experience

Solution Dynamics is experienced in a wide range of commercial and industrial facilities and energy consuming systems. Typical systems include: Boiler & Steam systems, Chilled water systems, Cooling towers, Compressed air, Lighting, HVAC for plants and offices, Building automation controls, Ammonia refrigeration systems, Variable speed drives, Efficient motors, Co-generation & Combined Heat & Power Systems, Heat recovery, Metering systems, Measurement and Verification protocol, and other types of energy, water, wastewater, industrial gasses and related utility systems.