



SQUEEZING SAVINGS OUT OF AIR COMPRESSORS

NEW VFD COMPRESSORS DELIVER GREATER CAPACITY, PLUS ENERGY SAVINGS

PROJECT-AT-A-GLANCE

Equipment installed

- 55-hp air compressor with VFD
- New dryer with cycling capability

Financial analysis

- \$30,639 project cost
- \$11,170 cash incentive from Energy Trust
- \$3,216 estimated annual energy cost savings

Estimated annual savings

- 44,678 annual kilowatt hours
- 17 tons of carbon dioxide

Compressed air systems are big power users that can take a chunk out of profits, particularly for small industries. Older air compressors, which may be only 80 percent efficient, waste energy and often impair production capacity. New compressors have average efficiencies of 91 to 95 percent, and in systems where demand for air varies throughout the day, compressors equipped with a variable frequency drive, VFD, can cut operating costs even further. Energy Trust of Oregon can help you make the switch to an energy-efficient new compressor by providing technical assistance and offering cash incentives.

Improving performance under pressure

As Imperial Manufacturing expanded its product line, the company faced a dilemma: Either install a second air compressor to run alongside the existing one, or opt for a complete replacement. After working with Energy Trust, the company saw how the latter option penciled out to lower operating costs now and into the future. Imperial Manufacturing, headquartered in Portland, Oregon and a leading manufacturer of walk-in coolers and freezers in the United States, retired its 40-horsepower, hp, air compressor for a new energy-efficient 55-hp model with VFD. The VFD saves additional energy by adjusting the compressor's output according to the need.

When the manufacturing plant is at full output, the new compressor keeps pace with full-capacity compressed air. But during part output, or when personnel are at lunch, the compressor drops down to about one-third speed. "You can tell when it ramps down because it gets significantly quieter," said David Criss, facility manager, Imperial Manufacturing.

Imperial Manufacturing also replaced the dryer on its compressed air system with a new cycling dryer that senses the moisture load and operates only when, and as much as, needed. This saves energy compared to non-cycling dryers, which typically are oversized for much of their operating time.

In combination, the new air compressor and dryer are expected to deliver an estimated \$16,000 in energy cost savings over the next five years.

"We're glad we chose the new-compressor option," said Criss. "The cash incentive that Energy Trust provided made it easier to move forward. Without it, we would have had to operate two compressors in tandem, which would have been costly."

Energy savings are in the bag

The purchase of a new printing press was the final straw for the air compressor at Standard Bag Manufacturing, which manufactures large industrial bags for the flour, animal feed, seed and dairy industries. “Our air compressor was old and an energy hog, and it couldn’t meet the increased demand of the new equipment,” said Ab Saidi, plant manager, Standard Bag Manufacturing. So Saidi started shopping for a new air compressor. When a vendor suggested he contact Energy Trust, Saidi knew he’d found the solution. Energy Trust arranged for an energy engineering analysis to evaluate options, and also offered a cash incentive toward the purchase of an energy-efficient air compressor. Soon, Standard Bag Manufacturing had a new 100-hp air compressor with VFD.

“Our new air compressor has greater capacity, but uses less energy than our old one,” said Saidi. “It’s quieter and produces less heat. Before, we often had to open the doors to stay cool, creating a security issue.”

After its success with the air compressor project, Standard Bag Manufacturing is launching a company-wide sustainability and energy policy. The company also plans to explore other projects with Energy Trust, such as energy-efficient lighting.

“Energy Trust was very helpful and knowledgeable, and our project went quite smoothly.

Ab Saidi, plant manager
Standard Bag Manufacturing



To learn more, visit www.energytrust.org or call **1.866.368.7878**.



PROJECT-AT-A-GLANCE

Equipment installed

- 100-hp air compressor with VFD

Financial analysis

- \$50,000 project cost
- \$15,850 cash incentive from Energy Trust
- \$5,600 estimated annual energy cost savings

Estimated annual savings

- 77,787 annual kWh
- 30 tons of carbon dioxide