

Compressed air tip sheet

Understand the true cost of compressed air and how the PPL Electric Business Energy Efficiency Program can help you save.



Compressed air costs and your facility

Compressed air is a necessary and costly source of energy in an industrial facility. Most systems only function at 10%-15% efficiency, although compressed air is used to run anything from basic tools to complex equipment. The U.S. Department of Energy conducted a survey and found that 10% of a facility's electricity is used to generate compressed air. In some cases, that figure can be 30% or higher.

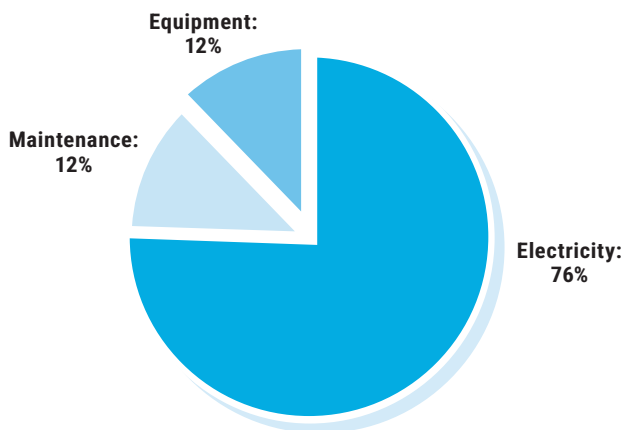
Calculating your costs

Although compressed air is generated on-site and contributes to a facility's overall consumption, generation costs are usually unknown. Here are some tips for calculating the cost of compressed air in your building; you can use the following formula:

$$\text{Cost (\$)} = \frac{(\text{bhp}) \times (0.746) \times (\# \text{ of operating hours}) \times (\$/\text{kWh}) \times (\% \text{ time}) (\% \text{ full-load bhp})}{\text{Motor Efficiency}}$$

Average compressed air costs over 10 years

This model assumes a 75-hp compressor is used for two shifts a day, five days a week. The aggregate electric rate is \$0.05/kWh over 10 years of equipment life.



Benefits of energy-efficient compressed air

- Annual energy savings
- Reduced maintenance costs
- Improved air quality

Tips for efficiency

- Monitor the compressor operating hours and load duty cycle periodically to calculate the cost of compressed air for your plant.
- Operate and maintain your compressed air system with a systems approach.
- Eliminate waste, inappropriate use and leak fixes with a compressed air management policy for your entire plant.



Incentives and support from PPL Electric Utilities

The PPL Electric Business Energy Efficiency Program can help you save with incentives on compressed air equipment, allowing you to:

- Reduce energy costs
- Lower maintenance costs
- Increase reliability
- Reduce your carbon footprint

Frequently asked questions

What is the cost of energy to increase pressure?

For every 2 psi in compressor discharge pressure, compressor energy use can be reduced by 1%. For example, reducing pressure by 10% can lead to 5% savings in energy.

What is the cost of a leak?

In a recent example within a steel plant, 625 leaks were identified with an average leak size of 5 cfm. The repair cost was a little over \$68,000, and the actual recoverable energy reduction was \$333,158 a year.

What are the two sides of a compressed air system?

Supply side and demand side. The supply side contains components that include air filters, air dryers, compressors and storage. The demand side components include, but are not limited to, air leaks, artificial demand and strategic placement of storage tanks.

See if you qualify for incentives

If your facility is ready for annual energy savings, reduced maintenance costs and improved air quality, visit ppl electric.com/BusinessRebates.

How to participate:

Work with a qualified contractor to get started, or reach out to us – we're here to help.

PPLbusiness@clearesult.com

References

Compressed Air Challenge® (CAC):

The Compressed Air System Best Practices Manual, Guidelines for Selecting a Compressed Air System Service Provider

DOE's Industrial Technologies Program and CAC:

Improving Compressed Air System Performance: A Sourcebook for Industry



For more information and incentive details, scan the QR code or visit ppl electric.com/BusinessRebates.