

20 Tips to Cut Your Energy Costs

Safety Note

When it comes to cutting costs, many organizations focus on productivity, and although it is important, energy cost savings are also achievable yet often overlooked. Best operating practices, along with improved process heating technologies, can lead to significant energy savings at any plant.

Consider the following common losses and avoidable costs to jump start your energy efficiency program:

1. Reduce “No Load” Load

If you're not making parts, or if your building is not occupied, you shouldn't consume anything. No load is the 15-25% of boiler, air, compressor or water system consumption that's there to support leaks/inefficiencies.

2. Negotiate Your Rates

Almost all electric utilities have special deals available; knowledge is power. Know your plant or building's options, create leverage, and make sure you understand all available rate schedules, even experimental ones.

3. Minimize Steam Pressure

Why generate at 150 only to reduce to 30 or 10? Reducing pressure can save in the following ways: better boiler efficiencies; lower piping radiation/convection losses; lower trap losses; lower feed water pump energy.



4. Minimize Air Pressure

Dropping even four psig from a typical industrial plant system can have an impact. Look for things like installing more/bigger receivers, piping changes, and nozzles to reduce open blower-offs.

5. Lighting Opportunities

Conduct a lighting audit and compare with IEEE standards. Then minimize with reflectors or lamp changes. Additionally, consider occupancy and daylight sensors.

6. Re-evaluate and Optimize Your Compressed Air Distribution/Intake Systems

Undertake a compressed air audit. Look to minimize severe drops. Update your piping/equipment drawings. A few pounds of operating pressure saved pays for a lot of piping changes.

7. Zone Out Your Compressed Air

Not all parts of your facility may need compressed air at the same time at the same pressure. Installing solenoid valves to segregate the systems makes it possible to minimize losses and “no load” for off areas.

8. Install Power Factor Correction Capacitors

If your utility bill is on KVA's and has the right rate structure, this is a simple “no brainer” with a payback of usually 6-12 months. Call your utility company and ask.

9. Fix Up Your Building Envelope

Most of a building's heating load (about 75%) is unwanted air moving through. Sealing dock doors and retrofitting windows is a good start. Also try to minimize the operation of exhausts, if possible.

10. Optimize Your Fluid Movement Systems

Make sure pumps/fans are operating with the right motors, sheaves, and impellers. This is a simple, and easy fix. Check design conditions versus actual needs.



11. Motor Efficiencies

Energy efficient motors can save 5-10%, depending on how poorly current systems are operating. This is usually a 1-3 year payback on older, heavily loaded motors. A motor audit is the first step.

12. Insulate All Steam Piping, Valves, and Flanges

Most facilities end up with 20% of their steam piping systems not insulated. It gets worse if you consider valves, flanges and pieces of equipment. Insulation is an effective, though often overlooked, solution.

13. Convert Wet Sprinklers to Dry and Do Not Heat

Many engineers keep temperatures at 45°-50°F so as not to freeze sprinklers. Dry sprinklers, by definition, have no water to freeze. Conversions from wet to dry can result in big savings.

14. Zone-Out Your Steam Systems

Just like compressed air, you probably don't need steam everywhere all the time. At the same time, automatic shutdown/start-up controllers that ride on PRV station pilot lines are not expensive.

15. Convert Electric Space Heat/Process Systems to Gas

So-called cheap, "special rate" electrical power is usually \$.04-\$.05 per KWH. This is still \$11-\$12 per million BTU's. Gas at \$5/MCF and 75% efficiency gives you the same BTU's for about half the cost.

16. Eliminate Boilers and Steam Systems

Today, it makes little sense to burn fuel at 70% efficiency and then lose more energy in the distribution system. Point of use gas technologies such as direct-fired ventilation units and 95% efficient water heaters make more sense.

17. Evaluate, Minimize and Upgrade Exhaust and Ventilation Systems

Don't just throw out air because it smells or contains dust. Consider absorbent media scrubbers for smells and specialty bag houses or socks for particulates.



18. Recover Waste Heat for Space Heating

The waste heat from a 100 hp air compressor can displace about \$10,000 in natural gas space heat over a year. Consider unheated make up air tubes for areas high in heat instead of heated make up air.

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19. Optimize Process Cooling/Millwater Systems

Process cooling water or millwater systems are often an overlooked opportunity. You can easily take advantage of colder winter conditions and save energy. How about variable speed drives on pumps with segmented and controlled distribution systems?

20. Minimize Outside Air to Handlers

Outside air-to-air handlers are expensive. Have you examined and set yours lately? Are they open all night even though no one is present? Have you considered CO₂ demand-based outside air controls?

There are a variety of options you can implement to increase savings and become more energy efficient. Start with the quick fixes and conduct the necessary analysis to consider which systems to optimize next. There is always benefit gained from evaluating processes to identify ways to improve inefficiencies, whether via increased production, revenue or safety.

For more information

Learn more about Honeywell Combustion Safety, contact info@combustionsafety.com, visit www.combustionsafety.com or contact your Honeywell Sales Engineer.

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