

The U.S. Department of Energy is committed to helping industries lower their energy bills.

DOE's Best Practices program offers companies

- training
- software tools
- plant-wide assessments
- tip sheets
- technology showcases

to help them cut costs, save energy, and reduce waste with today's technology.

**Contact our Clearinghouse at 1-800-862-2086 or visit our website at [www.oit.doe.gov/bestpractices](http://www.oit.doe.gov/bestpractices)**



## **Discover additional tips on how your company can reduce its natural gas bills by contacting:**

Industrial Assessment Center Program  
[www.oit.doe.gov/iac](http://www.oit.doe.gov/iac)

Office of Industrial Productivity and Energy Assessment  
[oipea-www.rutgers.edu](http://oipea-www.rutgers.edu)  
732-445-5540  
[oipea@camp.rutgers.edu](mailto:oipea@camp.rutgers.edu)

Office of Industrial Technologies Clearinghouse  
[www.oit.doe.gov/clearinghouse](http://www.oit.doe.gov/clearinghouse)  
1-800-862-2086

Energy Information Administration  
[www.eia.doe.gov](http://www.eia.doe.gov)

Alliance to Save to Energy  
[www.ase.org](http://www.ase.org)

Gas Technology Institute  
[www.gri.org](http://www.gri.org)

American Gas Association  
[www.aga.org](http://www.aga.org)

# **Reduce Your Industrial Natural Gas Bill**

## **Ten Timely Tips**

While companies recognize the value of natural gas as a versatile, clean-burning fuel, prices are expected to rise this winter.

# **Don't let natural gas prices burn your company!**

Discover how to conserve natural gas and keep your energy bills to a minimum.



# 10 Tips for Saving Natural Gas

**Think saving energy this winter will require costly new equipment? Think again.**

Cutting your natural gas bill can be as simple as adjusting a dial.

Get started with some of these simple, low-cost steps, and be sure to encourage active worker involvement. You may also want to consider additional measures, such as a plant-wide assessment available through the U.S. Department of Energy's Best Practices program.

## Equipment Maintenance

- **Inspect and recalibrate thermocouples** in furnaces to obtain more accurate zone temperature measurements and help increase furnace efficiency.
- **Install removable insulation** on uninsulated valves, pipes, and fittings to reduce losses in the process heat distribution system.

**Potential energy savings of 2-5%**

- **Inspect steam distribution systems for leaks and repair where necessary.** Possible sources of unnoticed leaks include piping, valves, process equipment, steam traps, flanges, and seals.

**Potential energy savings of up to 5%**

- **Regularly clean strainers** upstream of steam traps to prevent particle accumulation. Excessive deposition can hasten the need for repair or replacement.

**Potential boiler efficiency gains of 10-15%**

## Facility Issues

- **Measure and manage ventilation** in the plant. Use an economizer to optimize outside air use. Replace warped or worn outside air dampers.
- **Reexamine your gas contract.** Consider renegotiating terms to gain lower rates with utilities.

## Operations

- **Minimize surplus combustion air** by tuning damper settings on boiler draft fans, installing over-fire draft control systems, sealing doors, etc. Excess air in the combustion chamber contributes to heat loss via flue gas escape.

**Potential gain in furnace efficiency of 1% when air and oxygen content are reduced by 15% and 1.5%, respectively**

- **Lower the water temperature in boilers** to reduce short-cycle loss as well as convective and radiant heat loss.

**Potential boiler efficiency gains of 1% when the stack gas temperature is decreased by 40°F**

- **Prevent scale accumulation** by ensuring water treatment systems are operating effectively. Scale build-up in boiler feedwater tubes inhibits both throughput and heat transfer.

**Potential gains in boiler efficiency of 10-12%**

- **Rework schedule** of processing operations (e.g., lessen the frequency of mixed and/or partial loads) to reduce delays and reheat requirements.

**Real savings could be just one step away . . .**

After formalizing steam trap inspections, Velsicol Chemical Corporation reduced annual energy use at its Chestertown, MD, plant by 27.3 trillion Btu—a 17% decrease. The project paid for itself in 2.5 months and achieved yearly financial savings of \$80,000.

The Chestertown facility has two boilers with over 300 steam traps and annually produces 25,000 tons of chemicals.