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

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

Industrial Assessment Center Program
www.oit.doe.gov/iac

Office of Industrial Productivity and Energy Assessment
oipea-www.rutgers.edu

Energy Information Administration
www.eia.doe.gov

Alliance to Save to Energy
www.ase.org

Gas Technology Institute
www.gri.org

American Gas Association
www.aga.org

DOE/GO-102001-1192
Revised August 2003

Reduce Your Industrial Natural Gas Bill

Ten Timely Tips

Office of Industrial Technologies
Energy Efficiency and Renewable Energy
U.S. Department of Energy

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 billion 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.