

# Industrial Energy Efficiency & Conservation

## Energy Efficiency

Implement technology to get more output from the similar energy input

## Energy Conservation

Optimize facilities, equipment and processes to get the same, or better, output with less energy input.



- National Non-Profit Trade association formed 1953
- Represents all facets of the trade
- Provides education, training, resources and networking opportunities
- Created Insulation Inspection and Appraisal Certification Programs



# Assets That Appreciate vs. Costs That Evaporate

A typical refinery has 20-50 miles of high temperature piping.

If just 1 mile of piping is properly insulated (8" line, 500F), that \$147,576 dollar investment returns \$1,049,265 in energy savings in year 1.

Over ten years, that return is over \$10 million!!



**EVERY DOLLAR INVESTED IN AN INSULATION SYSTEM  
RETURNS \$7-\$16 EACH YEAR – YEAR AFTER YEAR.**

# Summary

Facilities can lose between \$2,400 and \$197,400 per year per 100' of uninsulated/under-insulated pipe



- **Solution:** Proper insulation specification, installation and maintenance
- **Added Benefits:**
  - 88-98% emissions (CO<sub>2</sub>, Nox) reduction (on-site or remote fuel combustion)
    - 100 feet of an 8" pipe at 500F insulated with 1.5" of insulation saves about 514,900 lbs. of CO<sub>2</sub> emissions per year.
  - <1 year payback, perpetual returns
- **Action:** Audit current systems with a Certified Insulation Appraiser, prioritize high-temp/large-diameter pipe