

## **Reducing Energy Costs at Industrial Plants in the US**

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We are all acutely aware of the increases that have taken place recently in energy costs. We are all paying more at the pump and will be paying more to heat our homes this winter. However, we should all be aware that U.S. industry is feeling the effects of higher energy costs also and this could lead to higher prices for the things we buy.

ESTD is working, through the DOE EERE BestPractices program, to help mitigate the impacts of energy price increases in industry. The program is focused on reducing energy consumption by increasing energy efficiency and increasing productivity in manufacturing plants. This is accomplished through the use of assessment tools, training and plant assessments to identify cost-effective means for improving energy efficiency. The program encompasses all major energy consuming plant utilities: steam, process heating (fired heaters), pumps, compressed air, fans, and chillers.

The BestPractices efforts are having a substantial impact in industrial energy consumption. For activities conducted in FY 04 the documented annual energy savings are: 12 trillion Btu/yr in natural gas and 580 million kWh per year in electricity. The documented financial savings of \$112 billion per year include energy savings and productivity increases. The most important facet of the program is replication by industry. After exposure to the tools, training, and assessments available through BestPractices industries establish internal energy efficiency programs and conduct them at other corporate facilities without DOE assistance.

An excellent example of this replication effect is Alcoa Aluminum. In 2001 and 2002 Alcoa worked with ORNL to conduct training for energy personnel in the use of the DOE tools and conducted several assessments. As a result of the benefits attained by these efforts they established the Alcoa Energy Efficiency Network. As a result of the assessments performed by Alcoa as part of this effort they have identified savings of over \$60 million per year in plants worldwide. The energy savings identified include 6,500,000 MMCF/yr in natural gas and 60,000 MWh/yr in electricity. The projects identified have favorable payback periods and Alcoa has implemented over \$10 million in savings through project implementation. The ultimate goal is to capture \$100 million per year in savings.

Most recently ESTD BestPractices program manager Tony Wright has been working with the DOE Industrial Technology Program staff to develop a new initiative focused on reducing natural gas consumption in industry. This is a response to the recent upsurge in natural gas prices. A very ambitious training and assessment schedule is being developed. The goal is to work with 200 plants over the next 12 months.



Figure 1 Daryl Cox taking field measurements for a Pump System Assessment Tool analysis at a steel mill.

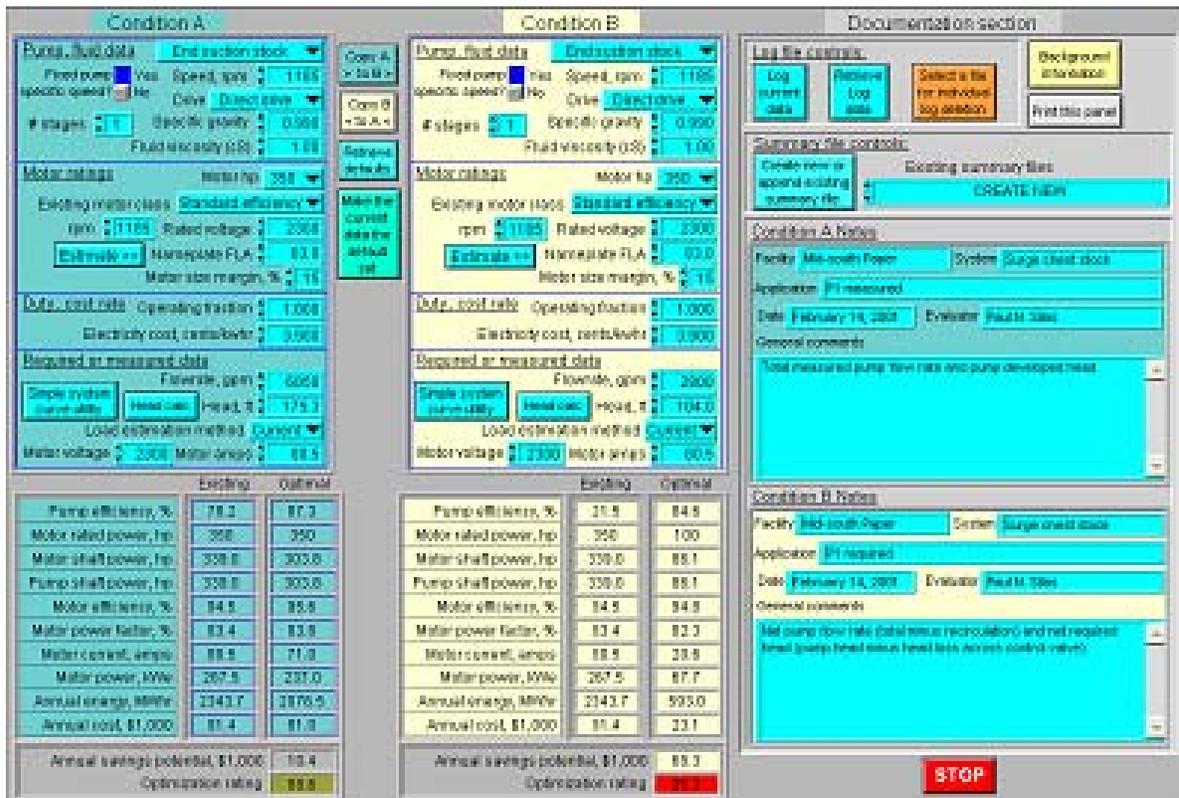


Figure 2 Screen capture of PSAT Assessment of pump system