

## FSAT Executive Summary

**Overview:** The Fan System Assessment Tool (FSAT) is a free online software tool that helps industrial users quantify energy use and savings opportunities in industrial fan systems. FSAT does not tell users how to achieve identified savings, but is a simple and effective tool that helps users understand how well their fan systems are operating, determine the economic benefit of a system modification, and determine if updating the system is economically viable.

**Data Collection Requirements:** Prior to using the tool, fan and motor specifications and system parameters such as fan diameter, motor horsepower, efficiency, measured flow rate, and fan static pressure need to be collected. In addition, electrical parameters and measurements such as nominal voltage, measured power, and measured voltage are needed for the operation of the tool. The tool also asks for gas properties but gives the user the option to estimate the values using an embedded calculator.

To collect the data required to operate the tool, knowledge of fan and motor properties and measurement methods are required. Knowledge of how to read and operate common measurement tools such as pitot tubes, manometers, flow and pressure gages may also be required. If the required measurement instruments are available, the measurements required to use the tool to analyze one component of the system could take one to six hours depending on the users understanding of the system. An estimated one to two days would be needed to collect the data to analyze a plant.

**Qualifications:** An understanding of fan and motor operating conditions, parameters, and measurement methods are required to operate this tool. A background in fan systems engineering is also recommended.

Training is not required to operate the tool; however, additional information on how to achieve the energy and cost savings identified by the tool can be provided through DOE end-user trainings. Please see the DOE ITP website for more information.

**Usage of the tool:** This is a onetime use tool that requires only spot measurements. Continuous measurements are not required to operate this tool.

**Ease of Use/Software Compatibility:** The tool is downloaded as a zip file which is saved on the user's computer. Only basic knowledge of computers is required to operate the tool. If additional clarification is needed, the user can choose to have an information box pop up when their mouse is placed over entry boxes, buttons, and outputs.

The basis for the tool is LabView 6.0 which will operate on the following PC's:

- 32 or 64-bit computer running Windows 2000, Windows Vista, Windows XP, and Windows 7
- Microsoft Office Suite 2007 and 2010

A common issue that users have encountered occurs during the installation process. When installing the program, users are able to download the program and extract the files, but when they try to use the "FSAT2004setup.exe" program to install the software, it appears to extract itself again and does not

install. If this problem occurs, users are encouraged to email the ITP Tools Help Desk at [ITPToolsHelp@ppc.com](mailto:ITPToolsHelp@ppc.com) to have a zip file containing the tool emailed to them.

**Product roll-out roadmap:** The next update for FSAT will be released by the end of 2012.