

USDOE Study Confirms Benefits of Compressed Air Challenge Training

In May 2004 the US Department of Energy and Xenergy completed a rigorous assessment of the actual impact of the CAC “Fundamentals” and “Advanced” technical training programs. Extensive interviews of 200 industrial end-users and compressed air professionals confirmed clear energy efficiency, reliability, and commercial benefits of both workshops.

Remind me: Exactly what is CAC training?

The Fundamentals session is a one-day technical workshop which serves as an in-depth introduction to efficient compressed air system operation and management. It is oriented to the needs and technical background of plant personnel and compressed air system vendors. The Advanced workshop is designed to provide facility engineers, maintenance supervisors, equipment distributors and other key personnel with the most up-to-date, in-depth technical information on how to troubleshoot and implement improvements to industrial compressed air systems.

Key findings of the USDOE Evaluation include the following:

> **Training attendees found the CAC sessions to be both useful and of high quality.** High percentages of both end-users and compressed air professionals reported a strong positive impression of the training sessions. According to the study, the CAC training has been very effective in providing high quality technical information to plant managers and technical staff. This training also benefited compressed air system equipment distributors and consulting engineers. Moreover, the training sessions was positively rated by the substantial number of government officials, engineering faculty, and utility energy efficiency program operators who attended the CAC trainings.

> **A very high portion of end-users reported using materials directly from the training to make efficiency improvements to their compressed air systems.** In fact, 76% percent of the sample end-user representatives reported that they had made significant capital and/or operating improvements to their compressed air system since attending the CAC training. Two-thirds of end-users who made such improvements reported that they had used materials and knowledge gained from the training to guide the improvements they made. The most common capital improvements made were the replacement of current compressors with more efficient models (18%), reconfiguring system piping (10%), and adding air storage capacity (8%). In addition, about half of end-user attendees said they had implemented changes to their compressed air system maintenance procedures following CAC training.

> **End-users who implemented compressed air system efficiency measures achieved high levels of energy savings.** Using a conservative approach to the savings analysis, XENERGY estimated that attendees who implemented compressed air system efficiency measures after completing the training saved, on average, 149 megawatt hours (MWh) per year, or roughly 7.5% of pre-project system energy. As a point of reference, compressed air system efficiency experts find that, for the typical compressed air system, 30% of system energy usage can be saved through cost-effective measures.

> **The CAC training is highly cost-effective for businesses and attendees.** At current national industrial electricity rates, the average value of savings achieved by program participants who implemented measures was \$7,428. With a typical “Fundamentals” tuition of \$299, this results in a simple payback of less than a month.

> **CAC Training materials are highly useful to compressed air professionals.** The majority (85%) of vendor participants have used CAC training workshop materials or information when they evaluate customer compressed air systems. Among this group, 18% of respondents used them in “all” evaluations, and 40% used them in “many” evaluations. A similarly high percentage of vendors (64%) claimed that they have used the CAC workshop materials in diagnosing their customers’ compressed air system operating problems.

> **End-users who implemented compressed air system efficiency measures experienced significant non-energy benefits.** A full 76% of end-users who implemented system efficiency measures reported experiencing benefits such as: reduced downtime, reduced moisture and contamination in the system air, more consistent system pressure, and restored delivery of adequate pressure to all system components. Some attendees were emphatic that the CAC training resulted in “saved time and money in all aspects of production” and freed up “sufficient air capacity to make quality products that we were previously incapable of producing.” Other benefits reported included improved consistency of pressure in the system, and restoration of usable pressure to all areas of the plant.

Interested in Further Information?

Clearly, the CAC workshops have been highly successful and effective. For the entire USDOE report, visit the CAC website at www.compressedairchallenge.org. For information on scheduling or hosting a CAC workshop please contact the CAC Training Coordinator at training@compressedairchallenge.org.