

PROCESS HEATING

A Special Supplement to *Energy Matters*

Process Heating Roadmap to Help U.S. Industries Be Competitive

Process heating is vital to improving industrial productivity, energy efficiency, and global competitiveness. Competitive pressures demand use of process heating technologies with improved performance, lower environmental impact, and greater flexibility. However, few companies have the resources to do the necessary research and development (R&D) to meet these goals. In response to industry's need, the process heating community, led by the Industrial Heating Equipment Association (IHEA) and DOE's Office of Industrial Technologies (OIT), has begun to develop a comprehensive plan for meeting industrial process heating needs. This plan is entitled "Roadmap for Process Heating Technology" and is intended as an industry guide on how to best implement process heating technology.

In November of 1999, thirty-five experts representing equipment manufacturers, end users, energy suppliers, and researchers met to address the issues facing industrial process heating. First, the participants defined key performance parameters and specific targets that are necessary to maintain their competitive position. Second, a list of barriers was identified, and third, specific goals were developed to address the barriers and achieve the set performance targets.

The highly diverse nature of industrial heating applications presented a significant challenge to the participants. In the end, the group agreed on the goals needed to ensure the competitiveness of U.S. industries in process heating over the next two decades.

The top priority R&D goals were:

- Advanced sensors that measure multiple emissions.
- Improved performance of high-temperature materials, including alloy composites.
- Predictive models of the process heating system.
- Improved methods for stabilizing low-emission flames.

- Heating technologies that simultaneously reduce emissions, increase efficiency, and increase heat transfer.

- Low-cost, low- and high-temperature heat recovery.

The top non-R&D goals were:

- Establish R&D and nonresearch priorities based on end-user input.
- Promote rational and consistent policies.
- Develop voluntary conventions and practices for equipment manufacturers.
- Develop incentives for purchase capital equipment utilizing new technologies.
- Expand the number of process heating applications using advanced technology.
- Foster the use of advanced enabling technologies in new process equipment.
- Develop the workforce by providing technical education starting at the elementary school level up through the post secondary level.
- Educate end users about information sources and equipment suppliers.
- Educate the public about industry and environmental issues via public relations activities and the media.

In October of 2000, a process heating steering committee was formed that consists of representatives from major industries and equipment suppliers. The committee created a plan that will help U.S. industries implement and demonstrate the best practices in process heating and to meet the near-term non-R&D goals. These activities will be carried out under OIT's BestPractices program. The R&D goals will be met through appropriate industries' R&D plans.

According to Dr. Arvind Thekdi of CSGI, Inc., who is also secretary of the process heating steering committee, "This cooperative effort will help U.S. industry remain competitive in the face of increasing pressure from the global marketplace."

Watch for process heating information in future issues of *Energy Matters* and learn about OIT's BestPractices activities in process heating. Because process heating savings can be reaped in locations through-out most industrial plants, it's likely that this information could improve your plant's bottom line. Look through this supplement for new ideas on process heating. ●