

Mechanical Insulation: A Powerful Solution for Improving U.S. Building Energy Efficiency and GHG Reductions on an Industrial Scale

Congress and the new Administration are focused on improving energy efficiency in buildings as never before, and for good reason. Buildings are responsible for 40% of U.S. energy demand and 40% of all greenhouse gas emissions, making efficiency gains in this area crucial if we are to markedly reduce America's energy consumption and effectively combat climate change. At the residential level, insulation is well understood for its efficiency benefits and widely used. However, the same cannot be said in the commercial and industrial sectors, which together consume 2½ times more energy than homes, according to the Energy Information Administration¹.

Commercial and industrial insulation—collectively known as **mechanical insulation**—has the potential to slash building sector energy demand.

The mechanical insulation industry has a long track record of providing large scale and long-term energy efficiency, emissions reductions, cost savings and safety benefits at manufacturing facilities, power plants, refineries, hospitals, universities and government buildings. For facility owners and operators, the savings are swift and last for many years, even though the return on investment from mechanical insulation is typically less than two years (and sometimes as little as six months). Mechanical insulation also improves infrastructure in the public, educational and health care sectors, among others.

Despite all of this, the technology is often underutilized because of policy—there is no standard or incentives encouraging its use—a knowledge base that has eroded and the fact that it is typically hidden behind walls or deep within facilities. This is unfortunate given the large economic, energy and environmental benefits mechanical insulation can provide. The good news is there is an enormous opportunity not only in new construction and retrofit, but in the maintenance sector. Mechanical insulation opportunities can be easily identified, with potential energy savings and emissions reduction determined with proven software technology, and implemented in weeks, making projects truly shovel-ready.

Using government data, the National Insulation Association (NIA) estimates that maintenance of insulation at industrial facilities alone can generate more than \$3.6 billion in energy savings per year (as much as President Obama intends to achieve at government buildings using all technologies), reduce 83 billion pounds of carbon dioxide and other greenhouse gas emissions, and create more than 27,000 jobs annually².

NIA and the International Association of Heat and Frost Insulators and Allied Workers (International) urge Congress and the Administration to consider supporting mechanical insulation by:

¹ Cf. *Annual Energy Outlook 2009*, U.S. Energy Information Administration, December 2008 (www.eia.doe.gov/oiaf/aeo/excel/aeotab_2.xls)

² NIA is working with the Department of Energy and Oak Ridge National Laboratory to calculate a portion of these statistics. A final report should be available by April 30, 2009.

- ❑ Establishing a national green building standard that stimulates improved energy efficiency in buildings, recognizes the important role of mechanical insulation in the commercial and industrial sectors, and encourages its adoption for all of the aforementioned benefits;
- ❑ Enacting a federal Energy Efficiency Resource Standard, which would create a market-based system to foster electricity and natural gas reductions by utilities and end users, and credit cost-effective energy efficiency solutions like mechanical insulation;
- ❑ Creating tax incentives for mechanical insulation installation, upgrade or maintenance projects, or extending existing building energy efficiency incentives to mechanical insulation;
- ❑ Funding a \$3.5 million program to educate and empower governments, corporations and manufacturers to take action on energy efficiency and the benefits of commercial and industrial insulation, similar to the public energy education campaigns Congress has authorized in recent years;
- ❑ Providing funding and incentives to colleges of engineering, technical schools and apprenticeship training courses to increase the knowledge base and level of training for skilled workers to incorporate insulation into building and plant-manufacturing facility designs, and for workers to learn how to install and retrofit facilities with mechanical insulation; and
- ❑ Supporting the continued work of the Energy Department's *Save Energy Now* program, which conducts energy audits at industrial facilities, and expanding it to the commercial sector. Commercial buildings account for 25% of total U.S. energy demand.

NIA and the International are committed to working with Congress, the Administration and DOE, and stakeholder groups on these and other initiatives that will lead to greater energy efficiency nationwide.

Industry has formed alliances with engineering and other industry trade organizations and has offered to work with the DOE to bring together a coalition of these various industry segments to help develop, implement and provide educational awareness programs and support for these programs and for the betterment of America.

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