

The Power of Mechanical Insulation

89,000 new jobs could be generated immediately

By Thomas Haun Feb 25, 2010



When asked what the **International Association of Heat and Frost Insulators and Allied Workers** is doing in the new green movement, we say, “Our Organization and the Union’s symbol, the salamander, have been green for over 100 years.”

Quite frankly, every action performed within the mechanical insulation industry is geared toward energy conservation and efficiency. Regardless of the energy source — oil, gas, coal, nuclear, solar or wind — it ALL needs to be conserved.

Our industry is a very specialized craft within the framework of the **Building and Construction Trades**. We insulate mechanical systems and equipment. Mechanical insulation encompasses all thermal, acoustical, personnel and life safety requirements in industrial and commercial buildings and facilities.

“Why Insulate”?

Many ask, “Why insulate?” There are numerous reasons, including: energy conservation, reduction of polluting emissions, condensation control, mold prevention, minimize corrosion under insulation, work place safety, improve the work environment and process control, reduce facility life-cycle costs, and provide an excellent Return on Investment (ROI). Mechanical insulation pays for itself in a very short time frame!

A computer program developed by the **North American Insulation Manufacturers Association (NAIMA)** several years ago, called **3E Plus**, calculates energy efficiency and savings, utilizing the most efficient insulation methods. Data is compiled demonstrating the energy savings and emissions reductions achieved by installing insulation on any type of mechanical system.

This method of calculation is used on a daily basis by our employers and by the Department of Energy (DOE) when asked to perform mechanical insulation energy assessments. With assessment results in hand, the owner/client has a greater

understanding of the “Power of Mechanical Insulation” in the building or facility. The 3E Plus program may be downloaded at no cost at www.pipeinsulation.org.

An Overlooked Opportunity in the Green Market

Both the Obama Administration and industry officials who are promoting “green” fail to realize the impact of insulating materials. We have found the mechanical insulation industry is a “well kept secret.” Many new green initiatives fail to mention mechanical insulation as an integral part of the “solution” for making America truly energy independent.

Our astonishment led us to look in the mirror and ask ourselves, “Why doesn’t anyone know about the Power of Mechanical Insulation”? The answer is simple: We in the industry — labor, employers, manufacturers and suppliers — have failed to educate and market the available information.

Currently we are working with an industry partner — the **National Insulation Association (NIA)**, which represents contractors, distributors, fabricators and manufacturers — in the development of materials that explain the “Power” of the mechanical insulation industry. NIA has compiled data

received from the Department of Energy (DOE) and from mechanical insulation energy assessments, which document amazing results. Research shows that up to 30% of all mechanical insulation is missing from mechanical systems throughout the United States.

As an example, in one oil refinery alone, the heat loss on bare pipes equates to 5,800 barrels of oil per day! At \$50 per barrel, this oil refinery is losing \$290,000 per day. This is only one refinery! NIA is using DOE data to help explain the “Power” not only in energy conserved but in emissions reduced. Comparisons made by NIA with other energy conservation options showed the following:

A simplistic view
**Insulation, a better option
 than a light bulb?**

Energy Conservation Option	Energy Savings, MMBtu/yr (1)
1 ft of insulation on 350°F pipe	14.4
1 car, 5% increase in mpg	3.7
1 compact florescent light bulb	0.9
1 ft of insulation on 180°F pipe	0.9
1 ft of insulation on 42°F pipe	0.6
1 tree	n/a

*Energy conservation with the use of mechanical insulation - “Low Hanging Fruit” - is simply an **OPPORTUNITY** that should not be overlooked.*

It is an investment that may have few rivals from a return perspective.

(1) Equivalent to energy savings, in Millions of Btu (MMBtu/yr) of primary fuel

National Insulation Association
 Insulation Outlook - January 2009



**Insulation Is
 “Greener” than Trees**

Carbon Reduction Option	Lbs of CO ₂ per Year
1 ft of insulation on 350°F pipe	2,308
1 car, 5% increase in mpg	570
1 compact florescent light bulb	130
1 ft of insulation on 180°F pipe	109
1 ft of insulation on 42°F pipe	88
1 tree	50

89,000 Short-Term New Jobs!

NIA has also compiled data for commercial buildings documenting the jobs potential of energy conservation and emission reductions through the use of mechanical insulation. All data was extrapolated to demonstrate that — if mechanical insulation is repaired and replaced on piping and duct work in industrial facilities and on HVAC equipment in commercial buildings — 89,000 new jobs would be generated in the United States, immediately! It would not take long to have these “shovel-ready” job opportunities in place. Many could start tomorrow.

A Very Good Investment

NIA and the Insulators International are working tirelessly to spread the word. We use the 3E Plus program and mechanical insulation energy assessments to demonstrate the “Power” to the owners/clients. Amazingly, they are slow to have this work done in their buildings or facilities.

When asked “why,” owners frequently comment that, with the tax incentives offered by federal and state governments for solar systems, wind turbines, and other energy efficient items, they are not willing to spend their own money for mechanical insulation repairs or upgrades.

This led our organization to Capitol Hill, where we along with the NIA lobby Congress to add mechanical insulation to their list of tax incentives. After being educated about the “Power,” members of Congress have joined us as knowledgeable allies. We were able to demonstrate the following impressive results through energy assessments:

- **Boise Cascade Paper Mill** in Jackson, AL, replace missing pipe insulation was to cost \$25,000 – with estimated savings of \$80,000 per year and a ROI in 3.2 months.
- **Goodyear** facility in Union City, TN, replace damaged insulation was to cost \$100,000 – with estimated savings of \$402,000 per year and a ROI in 4 months.
- **Eastman Chemical** in Kingsport, TN, replace damaged insulation was to cost \$300,000 – with estimated savings of \$1,000,000 per year and a ROI in 4 months.

Based on data from more than 700 industrial energy assessments, NIA estimates that implementing a comprehensive mechanical insulation maintenance and upgrade program in the commercial and industrial market segments would lead to: energy savings of \$4.8 billion per year; CO2 reductions of 43 million metric tons per year, and the generation of 89,000 new jobs

When meeting with members of Congress, we would state that, “We know mechanical insulation is not sexy, but...” Imagine our surprise when President Obama, speaking on jobs and energy savings at a Home Depot in Virginia several weeks ago, was quoted as saying, “Insulation is sexy”!

A New Era for Mechanical Insulation

Due to our efforts on Capital Hill, two bills have been introduced in the House.

- H.R. 2454: its main focus will be to “educate and motivate commercial and industrial facility managers utilizing mechanical insulation in new and existing facilities.”
- H.R. 4296: it will “amend the Internal Revenue Code of 1986 to provide a tax incentive for the installation and maintenance of mechanical insulation.”

Our union membership is completely dedicated to this effort. They have been asked to write letters of support to federal and state officials. To date, we have delivered over 50,000 letters to members of Congress, asking them to support these two bills. Due to this support, we are receiving tremendous assistance in both houses of Congress. Hopefully, these bills will be passed.

With the beginning of this new process, we have reviewed our Apprenticeship and Journey person Training programs. We have always taught the “how to” and the “why we” install mechanical

insulation. But, until now, we did not have the initiatives to promote the “Power.”

Utilizing the 3E Plus computer program, we are developing an entire new course that locals will present in their Apprenticeship and Journeyman upgrade classes. Upon completion, our members will be able to effectively demonstrate “The Power of Mechanical Insulation.”

We understand that mechanical insulation is not the only solution of energy independence in the United States and Canada. But, it is definitely one piece of the puzzle that should no longer be overlooked.

For further information, please contact: Thomas Haun, Administrator, Insulation Industry International Apprentice and Training Fund, International Association of Heat and Frost Insulators and Allied Workers, 9602 M L King Jr Highway, Lanham, MD 20706, 301-731-9101, thaun@insulators.org