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## Mechanical Insulation

Saving Energy, Protecting the Environment, and Creating Jobs

### **Commercial and Industrial Market Segments**

***Maintenance – Retrofit – New Construction***

Federal stimulus monies are being made available to create “shovel ready” jobs to stimulate the economy and make our country energy independent and create climate change. Mechanical insulation is a proven technology that can be implemented in weeks versus years and addresses each of those objectives. Considering the “use it or lose it” provision of the stimulus package to identify and implement initiatives and that mechanical insulation typically provides a double digit return on investment, mechanical insulation is an opportunity that should be implemented sooner rather than later.

#### ***Defining Mechanical Insulation:***

MECHANICAL INSULATION is defined to encompass all thermal, acoustical, and personnel safety requirements for mechanical piping and equipment, hot and cold, and heating, ventilating and air conditioning (HVAC) applications in the COMMERCIAL MARKET, which encompasses education, health care, institutional, retail and wholesale, office, food processing, light manufacturing, and similar type facilities, and the INDUSTRIAL MARKET, which includes power (utilities), petrochemical, chemical, pulp & paper, refining, gas processing, brewery, manufacturing, and similar type facilities.

#### ***Energy Efficiency – Conservation & Climate Change Initiatives:***

*(The cost data included herein is being provided only as a guide - NIA or the International make no representation as to the scope of the estimates)*

### **Educate Users – Assess the Opportunity – Allocate Funding**

#### **Educate:**

1. Provide awareness and educational forums for government and private industry as to the benefits and value of mechanical insulation and of employing different performance and financial modeling and higher standards related to the design, installation and maintenance of mechanical insulation systems.
2. Examine and implement current federal, state, or local governmental specifications—standards for mechanical insulation for piping and heating, ventilating, and air conditioning (HVAC) duct applications to provide thermal performance/energy efficiency that exceeds ASHRAE 90.1 2007 recommendations by a targeted 30% energy efficiency across all ranges of applicable service temperatures.

**Assess:**

1. Perform mechanical insulation energy assessments in all governmental facilities and provide support to private industry for similar assessments
2. Provide processes whereby all governmental facility assessments are to be reviewed within 60 days of completion and the development of implementation action plans for the applicable improvements.

**Allocate:**

- a. Implement the repair, replacement, or upgrade of mechanical insulation in governmental facilities identified in the assessment process
- b. Provide incentives, grants, or similar methods for private industry to implement the repair, replacement or upgrade of mechanical insulation identified in the assessment process.

***Areas of Opportunity:*****New Construction:**

1. Have the current mechanical insulation specifications examined from the perspective of energy conservation and efficiency to ensure they exceed the requirements established by ASHRAE 90.1 2007 by a target of 30%
2. Hold to the specification—do not allow a change in a specification that does not provide the additional thermal efficiency that is established with the increase over ASHRAE 90.1 2007 requirements and/or meet the intent of the overall specification.
3. Select an experienced and qualified insulation contractor for the project and provide ongoing oversight for specification compliance and potential thermal leaks and similar occurrences.

**Maintenance:**

Insulation systems, like all mechanical systems, require periodic inspection and maintenance. The fact is that most insulation systems are frequently ignored after initial installation. There are risks associated with not maintaining a mechanical insulation system in a timely and effective manner. Those risks, including the severity of those risks, will vary depending upon the use and service temperature of the operating system on which the insulation is installed; the surrounding environment; ambient conditions; the extent of any damage to the insulation system; the insulation system design; quality of the installation; the timeline of correcting any damage and other occurrences that may be unique to the area in question. It has been estimated that on average 10%–30% of all mechanical insulation systems within a few years of installation is “missing or damaged.”

The opportunity in this area has been defined as “low hanging fruit.” In most cases, energy savings and emissions reduction potential can be easily identified with proven software technology, and projects can be implemented in weeks, making projects truly “shovel-ready.”

At a minimum all damaged or missing areas should be returned to the intent of the original specification and in all areas where feasible and practical the principles discussed under New Construction should be applied.

**Retrofitting Existing Facilities:**

The same principles established with New Construction should be observed in retrofitting existing facilities. The opportunity to upgrade and/or perform maintenance on the current insulation system should be carefully

examined and processes implemented and executed with the same degree of specification clarity and inspection as New Construction opportunities.

### ***Resources:***

Contact the International Association of Heat and Frost Insulators and Allied Workers for more information and resources on the many energy efficiency – conservation, greenhouse gas emissions, and job creation opportunities in maintenance, retrofit and new construction with mechanical insulation in the commercial and industrial market segments.

- Insulation Energy Appraisers: Detailed listing of “Certified” insulation energy appraisers can be obtained at [www.insulators.org](http://www.insulators.org)
- International Association of Heat and Frost Insulators and Allied Workers, [www.insulators.org](http://www.insulators.org)
- National Union Insulation Contractors Association, [www.insulationleaders.com](http://www.insulationleaders.com)

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## **International Association of Heat and Frost Insulators and Allied Workers**

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