



Think about Mechanical Insulation First

NIA is always finding new ways to communicate the value of mechanical insulation, and this month the association branched out into the world of podcasts. NIA Past President Kenny Freeman, host of *The Freeman Report*, invited NIA Executive Vice President/Chief Executive Officer Michele Jones to join him in a discussion of how our industry can play a vital role in the reduction of CO₂ and greenhouse gas (GHG) emissions. Because *The Freeman Report* (available at www.buzzsprout.com/1188866/10911974) operates outside the specific realm of our industry, Michele's appearance offered an opportunity to reach a new audience with our message.

Beginning with the observation that insulation goes well beyond the colorful stuff people think of in residential applications, Kenny and Michele introduced those who may be new to the subject to what mechanical insulation is and what it does. Michele explained there are two ways to reduce CO₂, "either you prevent it from getting in the air, or you're going to take it out of the air," and mechanical insulation is especially good at accomplishing the former. (For more on how mechanical insulation keeps carbon from entering the atmosphere, see Dave Cox's article on page 8.) Then they discussed the impact of Delta T and the impact that insulation can have in higher temperature applications, particularly in the industrial segment.

Listening to the podcast, you can hear how NIA itself is making an impact, serving an important role as subject matter expert to government and industry. The U.S. Department of Energy (DOE) is looking to use the \$62 billion in clean energy investment funding it received as part of the Bipartisan Infrastructure Law and Energy Act of 2020; and NIA is right there, helping the agency focus its efforts. Michele detailed activities including NIA's attendance at the DOE's Better Buildings, Better Plants summit; meeting with key DOE leaders to highlight insulation's role in decarbonization and how DOE and NIA can work together; becoming a Better Climate Challenge Ally; serving on the DOE's

Better Climate Challenge Working Group on Portfolio-Level GHG Emissions Reduction Planning; working with Industrial Assessment Centers (IACs) across the country, run primarily through universities, to develop training courses for engineering students to learn how to perform energy assessments; and responding to a recent DOE Request for Information to highlight the importance of improving and enforcing consistent building codes addressing energy efficiency across the nation, emphasizing the need for increased insulation on mechanical systems like boiler rooms, hot and cold water pipes, and ductwork. NIA has also partnered with eight other insulation stakeholder organizations to form the Insulation Industry Advisory Council, which recently released the "U.S. Insulation Industry Building Decarbonization Statement of Policy Principles" to help guide strategies for carbon emission reduction and energy efficiency in buildings. In short, NIA is helping the DOE and companies looking to reduce their carbon footprint see how prioritizing mechanical insulation as part of an overall solution will help them reach their goals. As Michele observes, "What we're trying to do is to get them to understand that they need to *think about mechanical insulation first.*"

Until now, getting that front position has been a struggle, whether our projects were competing against maintenance for funding or fighting for attention against newer, splashier green technologies. Kenny notes part of the challenge is "people can see the light bulbs..." but most people never step foot in an industrial facility, or even the boiler room of the building where they work. And, as Michele observes, if a light bulb goes out, everyone notices the darkness; but if insulation is removed for maintenance work and then not replaced, not many people see that, and it often gets overlooked. She also noted there has historically been a holistic, rather than prescriptive, approach to energy savings. But with pressure to achieve decarbonization, "now, the government is saying... 'Look at every single thing you can do to reduce your carbon footprint. Everything.'" That is helping our industry get recognized. Michele voiced another selling point: "You don't have to invent us, we're already here. Insulation has been here forever, and it works."

I serve on NIA's Environmental, Social, and Governance Committee with Kenny—along with Dave Cox, Rick Sutphin, Jon Perry, and others. On the podcast, Kenny described some of our research looking into how we can get our message out. He runs through a simple scenario using one of the energy calculators available on NIA's website (<https://insulation.org/training-tools/designguide/simple-calculators/energy-calculator-for-horizontal-piping/>).

Scenario: Take one 3-inch valve, a foot long, running at 350°F, with an ambient temperature of 75°F. Apply 2 inches of mineral wool insulation and aluminum jacketing. Estimate the cost of natural gas fuel at \$8 per million cubic foot.

Results: Table 1 shows the difference between the uninsulated and the insulated states.

Table 1.

| Measurement | Uninsulated | Insulated |
|---------------------------|-----------------------|-----------------------|
| Heat Loss | 2,283 BTUs/hour | 93 BTUs/hour |
| Cost of Fuel | \$184.97/year | \$7.55/year |
| CO ₂ Emissions | 1.26 metric tons/year | 0.05 metric tons/year |

The results are even more dramatic when you think of how small the scenario sample is compared to the hundreds or thousands (or more) of uninsulated valves, and miles of uninsulated pipe, throughout the country. Kenny observes, "We're talking astronomical numbers!" And while the energy, fuel, money, and emissions savings are critical, there are so many other benefits to be gained, including personnel safety, noise control, process efficiency, and more.

A key point raised on the podcast is how the narrative is changing. When we used to run calculations like the scenario above, the emphasis was on return on investment (ROI) in terms of how much money the insulation would save the customer and how quickly they would get their cost back. Michele noted, "ROI, even at the DOE level, is being viewed differently now. The calculation is changing. They're bringing in all the other ancillary benefits that a product can do when reducing carbon emissions. So it's not just are you saving me money by becoming more energy efficient." Kenny described a client of his who hedged for years at the prospect of an energy audit, but when he mentioned how he could also help reduce their carbon emissions, "all of a sudden, the Environmental Manager sits up and goes, 'let's talk about that.'" This is where NIA's education and certification

programs can help advance the dialog, as certified insulation appraisers can prepare a report documenting not just energy efficiency and dollar savings, but also CO₂ savings.

Last month's *Insulation Outlook* gave several examples of how Kenny's experience is growing more common, as companies chasing carbon reduction goals are recognizing that mechanical insulation can be a key part of their strategy. Dave Cox reported on the staggering results one NIA member company achieved for a customer: Analysis showed that upgrading the mechanical insulation on just one of their plants—*just one*—saved approximately 4.5 million pounds of CO₂ per year, while reducing operating energy costs from \$102,000 to \$8,000. The CO₂ savings at that one plant equates to the carbon sequestration of 4,244 acres of mature U.S. forests in a year. On *The Freeman Report*, Michele shared a statistic looking at the bigger picture: Insulation in industrial operations in 1 year saves 211 trillion pounds of CO₂ annually. To make that huge number relatable, she ran it through the GHG Equivalencies Calculator on the DOE website (www.epa.gov/energy/greenhouse-gas-equivalencies-calculator), summarizing, "That is the equivalent of 41 million acres of trees, to remove that same amount of CO₂ from the atmosphere..." She concludes, "If you think our industry is small, it is. But the punch it can give is enormous."

We are gaining traction, but to really make a difference, it cannot be just NIA leadership in Washington, DC; Kenny Freeman on a podcast; or your President writing his thoughts here in a monthly Industry Message. Real *Progress through Unity* will take all our NIA member companies putting out the same message. Right now, organizations are looking for what they can do to meet carbon reduction goals, and we can help them. If we all spread that message—as we now see many NIA members doing, sharing success stories like the ones cited in this magazine on their websites—we will make a difference.

It is our time.

Joe Leo
President
National Insulation Association