



Mechanical insulation is the real superhero

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Readers old enough to remember the 1969 song, “Leaving on a Jet Plane,” by Peter, Paul and Mary may recall the folk ballad was used in commercials for United Airlines in the late 1960s. What many fans of the group may not know is that John Denver actually wrote and first recorded “Leaving on a Jet Plane” in 1966, when he was just 23 years old. And if you want even more trivia, John Denver’s real name was Henry John Deutschendorf, Jr. — he changed his name to reflect the capital of his dearly loved Colorado.

I thought about this song when I was booking a trip to Phoenix from my hometown of Charlotte, North Carolina. But what does this reference to songs and flying have to do with mechanical insulation, you might ask? Let me explain.

When booking my trip online, I came across the opportunity to offset the round-trip carbon emissions by purchasing carbon offsets from a company called Cool Effect. Carbon offsets are tradable rights or certificates linked to activities that lower the amount of CO₂ in the atmosphere. By buying these certificates, an entity can fund projects that fight climate change. In this

way, the certificates offset the buyer’s CO₂ emissions with an equal amount of CO₂ reductions somewhere else. Think of it as a friendly quid pro quo for the skies.

Curious as to how I could reduce my carbon footprint, I clicked on CoolEffect.org where I read, “Reduce what you can, then offset the rest.” They offered me some interesting options to spend money on projects in India, Honduras, Kenya and Colorado to offset my round-trip flight. CoolEffect retires the carbon credit on the proper international registry and has the “responsibility to ensure those carbon credits are devoted to carbon projects that will actually reduce emissions, benefit the communities in which they are based and are effectively cataloged throughout their lifecycle.”

Offsets are a useful tool in the fight against global warming. Many people working in environmental arenas around the world are concerned that offsets are used by companies and countries as a get out of jail free card to avoid lowering their carbon emissions. As stated in a previous column: “To limit global warming to just 1.5°C, the

planet must reduce current GHG emissions by 45% before 2030.

A stepwise approach is no longer an option. The international community is falling far short of the Paris goals.” Offsets are fine, but the reality is the world needs to actually cut emissions. We need a superhero that delivers cuts. That is where mechanical insulation enters the picture.

Why wait for a superhero?

Mechanical insulation provides high impact for reducing energy usage, mainly because it is used at higher temperatures, namely above the boiling level. We often say that the cheapest form of energy is the energy you don’t use in the first place. Insulation works. If properly insulated, boilers, homes and buildings operate on reduced energy loads, which lowers emissions and costs.

In several previous articles in this magazine, I stated that adding two inches of fiberglass pipe insulation to a bare four inches of steel pipe running at 350°F can save 2,309 lbs of CO₂ per linear foot. Using the flight emissions calculator found

at flightfree.org/flight-emissions-calculator for my Charlotte to Phoenix trip shows the round trip would emit one metric ton or 2,204 lbs of CO₂, which means the insulation saves more emissions than needed for my trip.

Adding two feet of insulation to an uninsulated 350°F pipe cuts both energy and emissions. The energy loss drops from 1,462 BTU/hour to 71 BTU/hour — and this is all year long — while also providing burn protection for workers. To help you picture this, one BTU is about the same amount of energy that is released from burning a single match.

From the example above, adding one foot of insulation instead of two inches could offset the emissions of my Phoenix flight, as well as drastically saving BTUs.

“All my bags are packed, I’m ready to go,” per the song mentioned earlier. Together, we can use mechanical insulation to cut global emissions.

For more information, visit insulation.org. •