



Ingersoll Rand Innovates HVAC Portfolio Using Next Generation, Low Global Warming Refrigerant, R-452B

As part of its sustainable business practices, Ingersoll Rand (NYSE:IR), a world leader in creating comfortable, sustainable and efficient environments, is taking action to address climate change – including the unsustainable demand for energy resources and its impact on the environment.

The company is improving the efficiency of its commercial and residential heating, ventilation and air conditioning (HVAC) systems including reducing the greenhouse gas (GHG) potential of refrigerants and energy consumption while using existing product designs.

Ingersoll Rand has been collaborating with refrigerant manufacturers, researchers, national labs and other industry partners to demonstrate a safe, high performance and efficient refrigerant alternative to R-410A. A climate-friendly refrigerant called DR-55 or R-452B (pending ASHRAE number) has been validated as a more efficient alternative to R-410A in small chillers, residential splits and packaged unitary products. R-452B has been tested in existing systems and requires no engineering to perform efficiently even in hot climates like the Middle East and India, and the toughest weather conditions in North America.

“This work is a result of Ingersoll Rand’s commitment to invest \$500 million in product-related research and development over a five-year period to fund the long-term reduction of greenhouse gas emissions,” said Randal Newton, vice president of enterprise engineering for Ingersoll Rand. “Exploration of next generation low global warming potential refrigerants with strong safety, design and sustainability performance is one way that Ingersoll Rand and Trane are delivering on our environmental commitment.”

Ingersoll Rand has patent rights for the use of R-452B in HVAC equipment. The company will make its patents for the application of R-452B in equipment available on a royalty-free basis.

About our Climate Commitment

Ingersoll Rand announced a profound climate commitment in September 2014 – a roadmap to significantly increase energy efficiency and reduce the environmental impact from the company’s operations and product portfolio by 2030 (with milestones at 2020). The Ingersoll Rand Climate Commitment pledged to:

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- Cut the refrigerant GHG footprint of its products by 50% by 2020 and incorporate lower global warming potential (GWP) alternatives across its portfolio by 2030;
- Invest \$500 million in product-related research and development over the next five years to fund the long-term reduction of GHG emissions;
- and reduce company operations-related GHG emissions by 35% by 2020.

This commitment will result in the avoidance of approximately 20,850,000 metric tons of CO₂e globally by 2020, which is equivalent to the energy used by nearly two million homes for one year. Further details of Ingersoll Rand's commitment are now [publicly available](#) on the website.

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About Ingersoll Rand

Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands — including [Club Car®](#), [Ingersoll Rand®](#), [Thermo King®](#) and [Trane®](#) — work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a \$13 billion global business committed to a world of sustainable progress and enduring results. For more information, visit www.ingersollrand.com.

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