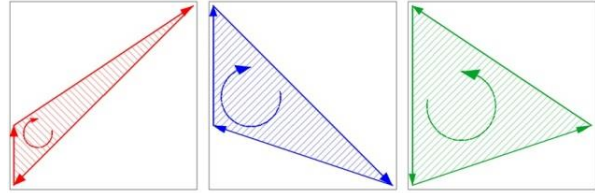


# ThermoLift, Inc.

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## ThermoLift Demonstrates Prototype on October 3<sup>rd</sup>; Attends NREL Innovation Showcase on 6<sup>th</sup>



*Norberto Domingo, Senior Engineer in R&D at ORNL, Jason Woods, Senior Engineer at NREL, and Dave Hamilton, Executive Director at CEBIP, attend prototype demonstration on October 3<sup>rd</sup>*

[ThermoLift](#), with grant funding from the U.S. Department of Energy ([DOE](#)) and the New York State Energy Research and Development Authority ([NYSERDA](#)), demonstrated the performance of its 2<sup>nd</sup>-generation TC-Cycle™ prototype to representatives of Oak Ridge National Laboratory (ORNL) and the National Renewable Energy Laboratory (NREL). The demonstration took place on October 3<sup>rd</sup>, 2016 at ThermoLift's engineering facility in Ann Arbor, Michigan. Later that week, ThermoLift attended the inaugural NREL Innovation Showcase in Beaver Creek, Colorado. As one of the invited Wells Fargo Innovation Incubator ([IN<sup>2</sup>](#)) companies, ThermoLift presented to conference attendees including the IN<sup>2</sup> Wells Fargo Board of Directors, investors, and other industry leaders. ThermoLift exhibits at NREL Innovation Showcase



*ThermoLift exhibits at NREL Innovation Showcase*

The [Innovation Showcase](#) was held on October 6<sup>th</sup>-7<sup>th</sup> in Beaver Creek, Colorado. Organized by NREL to support early stage clean technologies currently working with NREL and other DOE National Laboratories; conference attendees included Wells Fargo IN<sup>2</sup> representatives, investment firms, and industry leaders. "We are excited to work with companies like ThermoLift to advance their technology by offering real-world test conditions at the laboratory in order to optimize their potential for success in the marketplace," said Richard Adams, Director of NREL's Innovation and Entrepreneurship Center.



*2<sup>nd</sup>-Generation TC-Cycle™ prototype in test cell which has reached operational temperatures as low as -10°C*

Both ORNL and NREL came together under one roof to participate in the first public demonstration of the TC-Cycle™ technology. ORNL, as part of ThermoLift's grant program with the DOE, will be benchmarking the TC-Cycle™ system and validating its performance. NREL's focus, as part of funding from the Wells Fargo IN2 Innovation Incubator, will be to use system-level modeling to assist ThermoLift in understanding full-system integration in commercial buildings and assessing user cost savings.

Paul Schwartz, CEO of ThermoLift, commented that “while ThermoLift’s 2<sup>nd</sup>-generation prototype is not ready for production, we see a clear pathway to initial field demonstration in the next 12-18 months.” He added that ThermoLift is “not aware of any other active program across the globe investigating this unique thermodynamic cycle, and that our recently granted patent provides the company with a unique advantage to commercialization.”

Traditional HVAC systems are dominated by vapor compression-driven heat pumps and refrigerant-based air conditioning systems which are electrically driven, suffer performance degradation at low temperatures, and operate with multiple phase changes resulting in efficiency losses. ThermoLift’s patented TC Cycle™ avoids these shortcomings and has the added benefit of being able to maintain high performance (high efficiency) through the full spectrum of partial-load and full-load conditions. This makes TC Cycle™ a favorable HVAC technology in a marketplace that has seen upwards of 20 million heating and cooling systems installed last year alone. ThermoLift has the opportunity to establish itself and capture a significant portion of this multi-billion dollar industry.

ThermoLift is developing a cold-climate, natural gas air conditioner and heat pump technology that combines heating, air conditioning, and water heating into a single appliance. It is anticipated to provide 30-50% reduction in building HVAC costs while having relative reductions in associated greenhouse gas emissions. As a point of reference, the energy consumed to heat and cool buildings makes up 17% of the total energy consumed in the U.S. each year at an annual expense of approximately \$200B.

ThermoLift is headquartered at the Advanced Energy Research and Technology Center ([AERTC](#)) in Stony Brook, New York and receives business development support from Stony Brook University's Clean Energy Business Incubator Program ([CEBIP](#)).