

Energy-Saving Building HVAC Systems

Applicant	Project Title	Location	DOE Budgeted Amount	Project Summary
High Performance Air Source Cold Climate Heat Pumps				
United Technologies Research Center	High Performance Commercial Cold Climate Heat Pump (CCCHP)	East Hartford, Connecticut	Up to \$1.5 Million	This project will develop and demonstrate a high-performance cold climate commercial heat pump system. The system will reduce annual electricity use for commercial building space heating in cold climates by at least 25 percent.
Alternative Space-Heating Systems				
Unico, Inc.	Residential Cold Climate Heat Pump with Variable Speed Boosted Compression	St. Louis, Missouri	Up to \$2 Million	This project will develop a residential, air-source cold climate heat pump (CCHP) that can maintain capacity and efficiency even at very low temperatures.
Stone Mountain Technologies, Inc	Low-Cost Gas Heat Pump for Building Space Heating	Unicoi, Tennessee	Up to \$1.5 Million	This project will develop a low-cost, gas-fired absorption air-source heat pump for high efficiency space heating to reduce heating costs by 30-45 percent compared to conventional gas furnace and boiler technologies
Next Generation Heat Exchangers for Electric Vapor-Compression Heat Pumps and Air Conditioners				

University of Maryland	Miniaturized Air-to-Refrigerant Heat Exchangers	College Park, Maryland	Up to \$1.5 Million	This project will design and build prototypes of miniaturized air-to-refrigerant heat exchangers with 10kW capacity with at least 20 percent less volume and 20 percent less material compared to traditional designs.
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Energy-Saving Building Envelope Solutions

Applicant	Project Title	Location	DOE Budgeted Amount	Project Summary
Advanced Roofing/Attic Solutions				
University of Idaho	Energy Efficient Integrated FRP-confined Sandwich Roof System	Moscow, Idaho	Up to \$1.5 Million	This project will use a model home to develop and demonstrate an innovative sandwich roof system that uses foam material to significantly improve building thermal efficiency and can help reduce construction costs by 25 percent.
Highly Insulating Windows				
Lawrence Berkeley National Laboratory	Highly Insulating Residential Windows Using Smart Automated Shading	Berkeley, California	Up to \$1.5 Million	This project will develop a cost-effective, easy-to-install window that can be programmed to automatically adjust to weather and climate conditions. This window technology will use a smart automated shading system to efficiently capture the sun's heat in the winter and keep buildings cooler in the summer.