

The E3 Initiative

A Buildings Initiative focused on better energy, emissions and equity

The Department of Energy's Building Technologies Office is developing a national initiative focused on efficient and clean heating and cooling systems in residential and commercial buildings, making it easier to afford and install high performance heat pump solutions.

The E3 Initiative will work closely with stakeholders to develop regional solutions that support both technology innovations and accelerate deployment.

Advantages of Heat Pumps

Space conditioning and water heating consume over 40% of the nation's primary energy. Fossil fuels burned in space and water heating are some of the largest contributors to greenhouse gas emissions. Heat pumps, which extract heat from the air, are an efficient alternative to conventional equipment.

Other advantages include:

- Healthier year-round indoor and outdoor air quality
- Provides both heating and cooling
- Enables temperature control in different areas in the home
- Better humidity control
- Low maintenance and operating costs
- Grid connectivity enables grid optimization and renewable integration



Planned Engagement Activities

The E3 Initiative will provide opportunities for stakeholder engagement across many areas of interest. The initial launch will focus on the following:

Partnering with the Advanced Water Heating Initiative (AWHI) to transform the water heating market and significantly increase sales of high-efficiency, grid-connected Heat Pump Water Heaters (HPWH). HPWHs use a third of the energy of conventional water heaters; saving money and reducing emissions. www.advancedwaterheatinginitiative.org

Implementing the Residential HVAC Smart Diagnostic Tools Campaign to support contractors in commissioning new HVAC systems more efficiently and identifying malfunctions in existing systems through the use of smart diagnostic tools. The Campaign will provide a platform for technical assistance to resources such as best practices and independent testing of smart diagnostic tools.

The Cold Climate Heat Pump Challenge is a collaborative effort with heat pump manufacturers to develop a new technology specification for a high-performance cold climate heat pump, followed by field validation and pilot programs with utilities to address installation challenges and expand market demand.

Additional opportunities for collaboration will be developed in the next year that include reducing the global warming potential of refrigerants used in heat pumps, improving workforce training, and reducing the costs of panel upgrades.

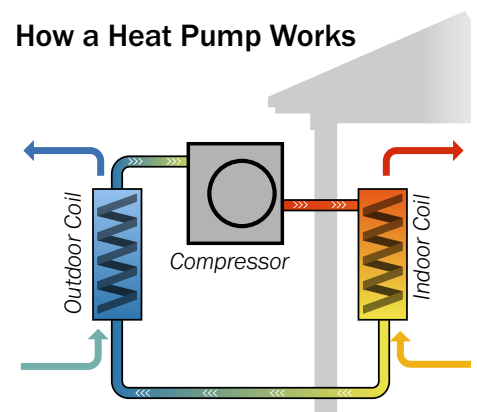
Interest in Participating

DOE's goal is to engage stakeholders, such as utilities, manufacturers, state and local governments, trades, efficiency organizations, and contractors in partnerships to accelerate heat pump adoption rates throughout the U.S. Efforts will concentrate on research activities and deployment strategies to address existing barriers, such as:

- high installation costs
- awareness of consumer benefits
- performance, especially in cold climates
- qualified installers and service personnel
- adequate electrical power for retrofit installations

To participate or learn more, please email us at E3Initiative@ee.doe.gov. ■

How a Heat Pump Works



Outdoor coil absorbs heat from the air, then the compressor concentrates the heat, and finally the indoor coil releases heat into the air.