

# Fuel Switching

Replacing old, inefficient heating, ventilation, and cooling (HVAC) systems is an effective strategy for improving indoor comfort and reducing greenhouse gas (GHG) emissions from buildings. By replacing fossil-fuel based heating equipment with modern, high-efficiency electric systems, or using low-Global Warming Potential (GWP) refrigerants for cooling, property owners can save energy, reduce on-site GHG emissions and support New Jersey's clean energy goals.

## Why Switch to an Electric HVAC System?

Traditional fossil-fuel based systems—like those powered by heating oil or natural gas—burn fuel on-site, releasing carbon dioxide and other GHGs into the atmosphere. These gases trap heat and can contribute to environmental issues by accelerating global warming. Burning fossil fuels also creates air pollution that negatively impacts human health. One major pollutant is particulate matter, a mix of solid and liquid particles suspended in the air. The smallest forms of particulate matter, often produced when fossil fuels are burned, can be inhaled deep into the lungs and are linked to serious health issues.

Switching to high performance electric HVAC systems—such as air-source heat pumps and geothermal— offers an energy efficient alternative to traditional heating and cooling, reducing energy demand and eliminating harmful emissions associated with on-site fuel combustion. This process, known as fuel switching, is a critical step towards decarbonizing the building sector and improving both environmental and public health outcomes. The environmental, health, and energy benefits of fuel switching are even greater when HVAC upgrades are paired with on-site zero-carbon energy sources, such as solar power.



# Refrigerant Replacement

## What About Refrigerants?

Air conditioners use chemicals called refrigerants to cool indoor spaces. As the refrigerant changes phase, it absorbs heat from indoor air and transfers it outside, lowering the temperature inside a building. Many commercial cooling systems use high-GWP refrigerants like hydrofluorocarbons (HFCs) for indoor cooling, which are potent GHGs. When these refrigerants leak during operation or maintenance of cooling systems, they release gases with thousands of times the GWP of carbon dioxide into the atmosphere, amplifying the greenhouse effect. Refrigerant switching replaces high-GWP cooling systems with alternative low-GWP or natural refrigerants, reducing potential harmful emissions.

## NJ Cool: Supporting Building Decarbonization

The NJEDA's NJ Cool program assists eligible building owners who are upgrading HVAC systems to more energy efficient systems by covering up to \$1,000,000 in eligible project costs associated with both fuel and/or low-GWP refrigerant switching. These upgrades help decarbonize buildings by lowering on-site GHG emissions and improve indoor air quality. By switching to zero-carbon heating sources and commissioning low-GWP cooling systems, building owners can help create a more sustainable, healthier, and stronger economic future for New Jersey.

# For More Information



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