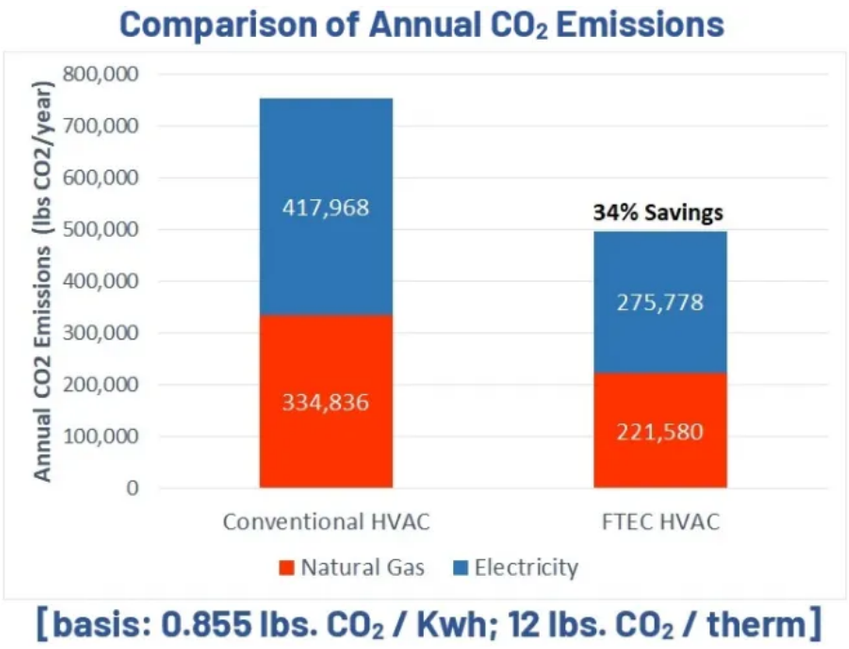
FT Energy Controls, LLC

How to Achieve Zero CO2 Emissions



[basis: 0.855 lbs. CO_2 / Kwh; 12 lbs. CO_2 / therm]

We need to have a new HVAC system for green buildings that can achieve zero CO2 emissions whenever renewable electricity is available. The supply of 100% renewable electricity may not be available until about 2050. We need to be making our buildings more energy efficient so that smaller amounts of renewable electricity are needed and less capacity needs to be built. This paper presents a new type of HVAC system that reduces energy costs by 36%, reduces CO2 emissions by 34% and reduces capital costs by 27% while using the current supplies of electricity and natural gas. The current use of natural gas boilers can be replaced with electric heat pumps as more renewable electricity is available. This will provide an all-electric HVAC system which consists of electric heat pump chillers for cooling and electric heat pump heaters for heating. When this HVAC system is provided with 100% renewable electricity it will provide zero CO2 emissions.

The solutions to the Climate Crisis will require both speed and scale. To accomplish these two goals for buildings will require all new buildings and some existing buildings to have the most energy efficient HVAC systems installed. FT Energy Controls (FTEC) has developed a new HVAC system that makes use of HVAC equipment that is already available at scale and provided by many different manufacturers.

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