

Mechanical Systems Overview

Natural Gas and Electric Heat Pumps – This traditional type of heating and cooling will work very well in most homes that have access to natural gas or propane. 65% of the homes in the DC area are currently heated by natural gas. (SEER Ratings 14 to 21) According to industry standards gas systems are project a life expectancy of 12 to 15 years and the electric heat pump side of the system being less.

Electric Heaters – Heat Pumps – Cooling – This system of using the outside air to exchange heating and cooling is another primary source of mechanical systems used in the DC area. With only 24% relying on only electric heating but more than 85% are using electric heat pumps to cool their homes. (SEER Ratings 19 to 22) According to industry standards these systems are project a life expectancy of 10 to 12 years.



Mini Split Heating & Cooling – This ductless system has dominated most of the world in the past 10 years. Almost all of the heating and cooling systems in Asia are ductless, a majority of the systems in Europe are already ductless, but in the United States it is projected that only 5% of the total market has embraced this highly efficient alternative for their homes.



Mini Split interior and exterior heating and cooling system. Used for zoned heating and cooling in specific spaces in the home.

<http://energy.gov/energysaver/articles/ductless-mini-split-heat-pumps>

Higher Energy Costs & Life Style – Are the reasons that the mini split alternatives have been slow to come to this country. While the mini split market is emerging the US it quickly growing due to increased costs and the increased demand for energy efficient systems by the general public. (SEER Ratings of 22 to 28) According to industry standards these systems are project a life expectancy of 12 to 15 years.



Geothermal – Is the most energy efficient heating and cooling system in the market today. It has been a proven alternative energy system in the US since the late 1940's. It is estimated that there are more than 50,000 geothermal systems now in operation throughout the country. These systems are considered alternative energy methods because generate their energy for a home or business through the earth where there is a constant temperature of (57%) in our area. Geothermal systems are currently more expensive than the above alternatives, but carry a 30% Federal Tax Credit until 2016 and in many markets local incentives are also available from States and Communities. As a result most geothermal systems can see a payback between 3 and 7 years. (SEER Ratings for Geothermal 30 – 60) According to industry standards has a life expectancy of its equipment of 25 to 30 years and its wells having a 50 to 100 year life expectancy. That is more than double all the other systems in the market today.

Free Hot Water (40%) – The excess heat that is generated with geothermal will provide free hot water for the home. The system is able to dump that excess heat into the home hot water system at no cost thus reducing the cost of hot water heating. Traditional gas hot water systems can be incorporated into the design to provide the additional hot water for the family use.

Tax Credit – (Expires in 2016) As a means of making geothermal affordable along with the 30% Federal Tax Credit that can be applied to the drilling and mechanical equipment installed in the house. For example if the geothermal system cost \$30,000.00 the tax incentive from the Federal Government would allow you to take \$9,000.00 off your taxes next year or the year after that. This would bring the system cost down to \$21,000.00 which could be within a few thousand dollars of a traditional gas and electric system The difference is that the alternative energy system would also be 50% more energy or more.



Save up to **70%** on your utility bills and receive a **30%** Federal Tax Credit

