

Every winter, I get a vast number of phone calls from members who are struggling with high bills as the temperatures begin to drop lower and lower. Many members' initial questions are, "Why is my bill so high? What can I do about it?" If you have a heat pump, the answer may be simple.

Have you ever noticed the 'emergency heat' setting on your heat pump? That setting, when used incorrectly, leads to surprises that no one wants to find when they open their electric bill. To really understand why the emergency heat setting could be devouring your wallet, you need to know how a heat pump works and how supplemental heat differs from emergency heat.

A heat pump works simply by transferring warm air from one place to another by pulling heat from the outside air (unless you have a ground source heat pump, which transfers heat from the ground or a body of water). When it's operating on the automatic 'heat' setting, as it is intended to run, it costs about 50 cents per hour to operate.

As it gets colder outside, your heat pump doesn't have as much heat to transfer inside and eventually it needs a little help to keep your home warm. This is where supplemental heat enters the picture. Your heat pump is already programmed to tell your supplemental heat source when it needs a little help. When the supplemental heat turns on, it produces hot air to assist your heat pump to satisfy your thermostat setting.

Here's where some people start to get confused. Supplemental heat and emergency heat are practically the same thing. In fact, both supplemental heat and emergency heat come from the same source, typically that's electric resistance heat from your electric furnace, but here's the big difference: With supplemental heat, your heat pump continues to transfer a little heat from the outside and gets a boost from your furnace, and with emergency heat, your heat pump is off.

A typical electric furnace, which has 15,000 Watts of electric resistance heat inside, that provides the supplemental or emergency heat for a heat pump costs about \$1.50 per hour to operate. That is three times what it costs for the heat pump to operate. For example, operating on emergency heat for seven hours will cost you about \$10.50 just to heat your home – not including the cost of heating water, keeping lights on and operating appliances. This is why operating your system on the emergency heat setting can cause your electric bill to be hundreds of dollars more expensive than usual.

This is why using the emergency heat setting when it's not an emergency is costing you big time. Think about moving a heavy piece of furniture. Trying to move it by yourself is difficult and requires a lot of energy, but if you have a friend help, it's a lot easier to move. Emergency heat works in a similar way. When you turn the emergency heat setting on, you are turning your heat pump off and losing the benefit of the high efficiency of the heat pump.

The only time you really need to use the emergency heat setting on your heat pump is if there is something wrong with your heat pump. Say, for instance, your compressor goes out and it could be a few days before you can get it repaired. In this case, you would switch to 'emergency heat' on the thermostat until you can get your heat pump fixed.

Another concern I hear from members that causes them to unnecessarily switch their heat pump over to emergency heat is when they panic because the air coming out of the vents is cool. The air really isn't cool; it just feels that way because the air the heat pump is blowing is cooler than our body temperature. Your heat pump might be blowing air that is 80 to 90 degrees Fahrenheit but that will feel cool if you stand near the vent because your body is much warmer at 98.6 degrees Fahrenheit. This is exactly what your heat pump is designed to do.

While all this may seem long and complicated, the beauty of your heat pump is that it is automatically programmed to operate using supplemental heat. By not using the emergency heat setting on a regular basis, you won't notice a difference in how well your heat pump heats your home, but you will notice a difference in your electric bills.