

Here Are Some Tips on How to Reduce the Cost of Heating Your Home

Even though your furnace has probably already kicked on several times this season, it's never too late to think about how to reduce the cost of heating your home. Since most readers have gas forced air furnaces, as do I, I'll write from that perspective.

Actually, I have a hybrid forced air furnace, which combines an **air source heat pump** with a **gas furnace**. In the summer time, the heat pump functions like your typical central A/C unit, with a compressor mounted outside sending chilled liquid to a chiller unit mounted above the furnace's heat exchanger. The same fan that pushes air across that heat exchanger in the winter pushes air past the heat exchanger and through a chiller unit, producing the cold air that is distributed throughout your home, by way of floor (or ceiling) vents.

Heat pumps reverse that process in heating mode, and that "chiller" becomes hot using heat that is extracted from the outside air. That works fine unless it gets really cold outside, at which point the heat pump goes dormant and the gas furnace comes on. Since most of our winter days are above freezing and we turn down our thermostat when we go to bed, the gas furnace is largely unused, which reduces gas consumption significantly.

Natural gas heat is **less** expensive than typical baseboard electric heating, but **more** expensive than heating with an electric heat pump. Moreover, if you have enough solar PV panels on your home, you can run your heat pump without having to pay the utility company for the electricity. That's my situation — I

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By JIM SMITH,
Realtor®

have enough solar panels to **power** my home, **heat** my home, and **charge** my cars. My gas bill is under \$50 per month even in the coldest months, and much of that is for heating water, not running the gas furnace. As soon as my 15-year-old water heater dies, I plan to replace it with a **heat pump water heater** using electricity from my solar panels. Since a heat pump water heater chills the air around it as it heats the water within, I'm going to put my freezer in the same room so less electricity will be required to keep my food frozen.

Recently I wrote about **mini-splits**, a funny name for a heat pump system common in Europe and Asia, and that is becoming more common here in the United States. Being a heat pump, a mini-split operates only on electricity and is highly efficient. Also, a mini-split's heat mode can operate in temperatures far below the capabilities of heat pumps like the one in my home. Just this week I ordered a 3-head mini-split system to replace the roof-mounted furnace and A/C unit at the office of Golden Real Estate. Since we use gas only for heating, I'll be able to tell Xcel Energy to discontinue gas service to my building, which costs about \$50 per month -- even when **zero** gas is consumed. You read that right: we currently pay the utility company \$600 per year just for the *privilege* of being connected to their natural gas grid.

So much for **appliances**. The highest return on investment when it comes to reducing your energy costs comes from improving your home's **insulation**. I recommend getting an **energy audit**, which uses a "blower door test" to identify the places where your home is losing heat.

If you Google "how does a blower door test work?" you'll learn the following: A fan is installed which sucks air out of your house. The technician conducting the audit then goes through the house looking to see where air is **entering** the house. Those same places are where heat is **leaving** your house.

Our **smartphone app** lists two vendors who perform energy audits. You can download the app for free from the App Store or Google Play by searching "Golden Real Estate." Or go to this website to download it: www.clientlinkt.com/install/243.

There are four areas of interest when insulating your home: the **exterior walls** and **attic** (using blown-in cellulose) and caulking or sealing around **windows**

and along the **rim joist** in your basement or crawl space. The rim joist is where the joists for your first floor rest on your home's foundation. Home builders typically stuff loose fiberglass between those joists, but they don't cover and seal that fiberglass with plastic. Cold air flows easily through that loose fiberglass "insulation."

The company that did the insulation work in my own home is GB3 Energy, which has a video I created on its web page (www.GB3Energy.com) detailing the improvements they performed. (In that video, I also show and explain my home's heat pump system.)

In the 1990s, I owned a 1950s bungalow with minimal insulation in its exterior walls. I hired a vendor to blow cellulose into those exterior walls, and the result surprised me. What it made me realize was that walls radiate their temperature to occupants of that room. The indoor air temperature may be 70 degrees, but if the surface of the walls is cold, you will feel colder than you would in a room with 70-degree air temperature and walls that are not cold. After the insulation was blown into the walls, the bungalow was noticeably more comfortable **and** my gas bill was reduced.

Whatever the age of your home, if it has the typical fiberglass batt insulation in its exterior walls, that insulation has probably settled and has left void areas (without insulation) in your walls. If you have a vendor like GB3 Energy blow cellulose into your exterior walls to fill those void areas, your home will **feel** warmer and your heating costs will go down.

When it comes to improving your gas furnace's efficiency and reducing your gas bill, don't neglect replacing your furnace filter at least twice per season.

You probably turn down your thermostat when you go on vacation, but do you also turn the setting on your gas water heater to "Vacation" — or turn it off completely? Doing so can also save on your gas bill.

There are so many other ways that you can improve the "performance" of your home. If you went on the **Metro Denver Green Homes Tour** on October 7th, you learned several. I recommend ordering a home energy audit — it's roughly a \$200 investment — and learning from it what improvements are likely to have the most positive impact and make the most sense for your home. Also, the technician performing the energy audit can be a fount of knowledge on the subject of energy efficiency, so don't just read their report, chat with them and you'll probably learn a lot that you don't already know.

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Are We at a Tipping Point in the Electrification of Transportation?

Regular readers of my YourHub column know that I am a big proponent of electric vehicles (EVs) and that I write from the perspective of someone who has driven electric since 2012 — probably over 150,000 miles. I can't remember the last time I purchased gasoline — except for the trucks Golden Real Estate offers free to our clients.

Rita and I have owned two Teslas that consume no gas at all, and my Chevrolet Volt gets 2,000 to 3,000 miles on every tank of gas — which holds only 8 gallons.

Perhaps you have viewed the PowerPoint presentation on the topic of electric vs. gas-powered vehicles that I deliver to service clubs and other organizations. If you haven't seen it, there's 35-minute video of the presentation online at www.GasCarsAreObsolete.info.

A decade from now, I suspect we'll look back at 2017 as the tipping point in terms of EVs replacing cars with internal combustion engines (ICEs). This is not only because the prices of new electric vehicles are becoming comparable to those of ICEs, but because several nations have said they will ban the sale of ICE cars — Neth-

erlands, starting in 2025; Norway and India in 2030; and France & the UK in 2040. China had said it, too, will ban the sale of ICE cars but hasn't specified a year. You can be sure that auto manufacturers are scrambling to join the likes of Volvo, Volkswagen and BMW, who have already announced their intention to produce only electrified vehicles in coming years.

EVs have been around long enough that there is a large supply of used ones, many of them priced under \$10,000. That's because the industry is applying similar depreciation rates on EVs as they do on ICE cars, despite the fact that there are far fewer components to fail (often at considerable expense) in an EV than there are in used ICE cars. For example, my 2012 Chevy Volt has over 75,000 miles on it, but the gas engine, which func-

tions solely as a generator, has run less than 10,000 miles — miles that are very light duty when compared with gas or diesel engines which provide all the propulsion for a car. There has been no perceptible loss of battery range in my Volt, and the car is, for all intents and purposes, as sound as when I bought it over 5 years ago. Yet, on the used market it's worth under \$10,000.

If you're not in a position to buy a new EV, I urge you to consider buying a used one. If electric range is an issue for you, I recommend the Volt, as its range-extending engine allows for a total range of 300-400 miles, making it suitable for use as one's only car. As EVs continue to grow in popularity, the value of used ones could increase, so you might want take advantage of current low resale prices before the market corrects itself.

We Bid a Fond Farewell & Best Wishes to Kim Taylor

Kim Taylor has been an integral part of Golden Real Estate for the past four years. She came to us originally as my unlicensed personal assistant, grew into a licensed broker associate and is now qualified to be on her own as an independent broker.

If I were to share all the ways by which she has made me, her fellow agents, and Golden Real Estate better during her time with us, it would require a lot more space than is available here. Always selfless in her approach, Kim has been there, ready to help with every aspect of the operation of Golden Real Estate. And on top of what she's done for



the business, Kim is a wellness coach, who put me personally on the path to working out with a personal trainer, eating right, drinking more water every day and so much more. She is as kind and caring a person as you're likely to meet, and it has been my sincere privilege to have worked so closely with her for these last four years. I will probably miss her more than anyone!

Thank you, Kim, for being the light in our office, and best wishes as you develop your own wellness business in Golden and at your new home on the Western Slope and as you remain active in real estate.



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