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Did you know...

...that a garden hose left attached to an outside faucet all winter can cause your water line or your outside faucet to freeze and split and result in an repair job?

It's simple to avoid this headache: disconnect your house for the season now!

THROUGH MY EYES

I have a lot of questions about our national and state-level rush toward an all renewable energy future. We need to be good stewards of the environment, but there are a lot of things that in my view don't add up or don't seem like they have been completely thought out. Here are a couple examples to consider:

Regarding the magnitude of the task:

The chart on the top of page 3 lists the sources of electricity in the United States. For all the talk about wind & solar - and the money spent for them - are you as surprised as I am that they account for a mere 12% of US electric generation? Yet we are told that wind & solar will replace fossil fuels. By the current electric mix,

"Wherever you see a 'Vincent's Van Go' you know the job will be a work of art."



Here is our call taker Amy holding some custom cookies that a supplier made for us. Our logo, ice cubes for cooling, and a flame for heating. Very clever!

Continued Page 3

What They Won't Tell You About New Energy Saving Appliances – Part 2

There are many rebate programs from utilities and tax credits promoting energy efficiency for HVAC systems. The entire focus of these programs is on the energy savings obtained by replacing the 'box': the furnace, boiler, air conditioner, or heat pump.

An example of the message of these programs is that by upgrading to a 96% efficient furnace that you can expect \$.96 - 96 cents - of heating for every

dollar spent on natural gas.

What if I told you that the delivery system - *the duct system* - in a typical house - new or old - is only 56% efficient in delivering a furnace or air conditioner's rated output regardless of how efficient the HVAC equipment is?

This means that for a furnace rated at 100,000 BTUs of heat per hour, only 56,000 BTUs will be delivered. The furnace makes 100,000 BTUs, but due to duct

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Appliances - Part 2... (Continued from Pg.1)

work problems, only 56,000 BTUs get to where heat is needed.

Now let's say this is a 96% AFUE efficient furnace. The homeowner in this example is only getting the equivalent of \$.53 – 53 cents – of actual heating for every dollar spent on heating their home – much less than the \$.96 they thought they were getting.

(.96 AFUE efficiency X .56 of the rated output = \$.53 per dollar spent).

Equipment Efficiency vs. System Efficiency

There is a difference between equipment efficiency in **making the heat** vs. system efficiency in **delivering the heat**. But as the above example reveals, the impact that the duct system has on saving energy is huge.

The 56% delivered efficiency rate cited above comes from the National Comfort Institute - NCI. This statistic is what has been revealed from years of data collected from heating & cooling systems across the United States.

According to NCI, we should focus less on the equipment efficiency rating and more on the System Efficiency Rating. An *HSER™* (Heating System Efficiency Rating) or *CSER™*

(*Cooling System Efficiency Rating*) measures your entire system and the construction of your home.

For more info: https://www.myhomecomfort.org/understanding_your_hvac_system

The Important Takeaway

I don't want you to conclude that upgrading your equipment isn't important. In the above situation, an 80% AFUE furnace would only yield \$.45 of useable heat per dollar spent. There is a savings – but not as much as was expected. The idea to take away is that replacing the 'box' isn't the only factor in saving money on your heating or cooling bill – fixing the delivery system – the duct work - is also important to saving energy and that it may even have a greater impact on your savings.

What Are the Causes of Poor Duct Work Efficiency?

There is not just one factor that reduces duct system efficiency – typically there are a combination of issues:

- undersized return air duct work and supply air duct work.
- friction loss due to poor duct work design & bad workmanship
- duct leakage

- uninsulated duct work
- uninsulated or under-insulated homes
- restrictive supply and return air grills
- restrictive filters & dirty, unmaintained equipment - all are related to airflow – a topic you read about in this column last month.

Improving System Efficiency

If your duct work is shortchanging you on your expected energy savings you don't have to live with these issues - they can be fixed. And doing so will also make your system perform better, help your equipment to last longer, and make your home more comfortable.

Coming up with a plan to fix your system requires a system analysis to determine what issues need fixing.

If you are interested in exploring having your duct system improved, a good first step is to have your system airflow checked. We do this using a procedure called a 'static pressure test'. This is the HVAC system equivalent of having your blood pressure checked by your doctor.

SEE THE ENCLOSED STATIC PRESSURE & AIRFLOW INSERT FOR DETAILS.

– Daniel Squires

Through My Eyes (Continued from Pg. 1)

Sources of Electricity in 2021

Fossil Fuels: Coal 21.8% Natural Gas 38.3% Petrol .5% **Total 60.6%**

Nuclear: 18.9%

Renewables: Wind 9.2% Solar 2.8% (**combined 12%**) Hydro 6.3% Biomass 1.3% Geothermal .4% **Total 20%**

Source: US Energy Information Administration (EIA)
<https://www.eia.gov/tools/faqs/faq.php?id=427&t=3>

this means that wind & solar will have to grow by 500%! (Where will they put all these wind turbines and solar panels?) And this doesn't even account for the additional power needed as the demand for electricity grows.

Regarding reliability: In 2021, Texas (at 21.3%) was much further down the renewable path than Michigan (at 6.6%) in terms of wind & solar electric generation. However, the week of Valentine's Day (2021) the temperature in Texas dropped below zero. Over five days, more than 10 million Texans lost power for days during what turned out to be the coldest winter storm in half a century.

During the storm electricity generated from renewables dropped from 21% to 8% - at one point reaching a deadly low of just 1.5%. The electric reliability council of Texas - ERCOT - later reported the entire state of Texas was just four minutes away from total grid collapse. Why? Solar panels can't capture sunlight and wind turbines don't spin when covered in snow and ice - or when the wind doesn't blow.

At least 246 people died and over \$195 billion of property and economic damage occurred. Texas's **reliable power sources** of fossil fuels (69.3%) and nuclear power (8.7%) were not enough to offset the loss of electricity expected from wind & solar.

For me, this is troubling. Wouldn't this be reason to pause and consider the wisdom of this 'all renewable' course? Nope. In the year since the Texas tragedy the trend toward replacing fossil fuels with renewables marches on unabated.

On Aug. 16, 2022, the EIA predicted that nationally renewables will be up an additional 2% to 22% this year and up to 24% in 2023. Texas is now up by 10% - to 32% renewables. For both the United States and Texas most of these increases in renewable energy are due to additional wind & solar capacity.

Would more batteries - to better store the energy from wind & solar - have prevented the tragedy in Texas last year? I don't think so, but due to space I'll have to save my reasons until next month.

Why I Am Raising These Questions

The next step in this march toward an all renewable future is the elimination of reliable gas fired furnaces and boilers. It's already happening in some California cities and, closer to home, organizers in Ann Arbor are calling for a ban there. Should we bet our safety and comfort on wind & solar? I'll share my concerns about this in the November issue.

- Daniel Squires 

What Our Clients Are Saying...

"Really great service! I am really happy with the services and the personnel of VHP. Nathan does an outstanding job as well as the other two techs who did the installation."
 - Renna Flaig, Port Huron

Car Brands 2: Hyundai to Opal

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Q	M	I	Q	T	W	U	R	L	D	N	Z	Z	O	H	M	I	T	R	Q	X	A	Lotus
K	C	B	M	U	S	J	Y	U	Z	H	Y	R	U	C	R	E	M	I	I	J	K	Maserati
I	S	S	P	Z	N	T	Q	A	E	K	M	L	E	J	L	Y	I	Z	K	D	J	Mazda
A	U	E	T	A	I	G	Z	Q	N	N	K	T	A	N	A	I	O	O	F	P	Y	MercedesBenz
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Humor Section

Two hunters are out in the woods when one of them collapses. He's not breathing and his eyes are glazed. The other guy whips out his cell phone and calls 911. "I think my friend is dead!" he yells. "What can I do?" The operator says, "Calm down. First, let's make sure he's dead."

There's silence. Then a shot.

Back on the phone, the guy says, "Okay, now what?"



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