Are Woodstoves Now a Bad Idea?

By Greg Dennis

It's exactly 1°F outside as I write this — the kind of day that used to be common in Vermont winters. Windy, bitterly cold, forecasts calling for more of the same. The kind of day that used to be common before the planet got hot.

As compensation for the outside cold I'm sitting by a blazing woodstove filled with good dry wood. But should I be?

We've come a long way in Vermont from the old days of trying to heat a drafty house with an inefficient fireplace. The Seventies brought the first popular generation of woodstoves. Those evolved into more efficient stoves that met cleaner-air standards. Today some Vermont homeowners and institutions such as schools are using advanced wood heat produced by 21st century pellet burners. There's a growing stigma against the all-too-common Vermont practice of outdoor burn piles. The trends are in the right direction.

But many of us, including myself, continue to use our woodstoves. We do so despite increasing alarms from experts that humans need to "stop burning things." That is, stop burning coal – but also other fossil fuels such as petroleum and gas and, yes, ultimately stop burning wood.

Officially, Vermont already relies more heavily on wood heat than any other state, and Montpelier is pushing for even more cutting and burning.

Here's an oxymoron from Mike Snyder, the state commissioner of Forests, Parks and Recreation: "We get a lot from forests, and we're going to save forests, and all the amazing things they do for us, by cutting trees."

Sacrificing trees for warmer rooms diminishes one of our best climate-cooling resources: older trees that sequester large amounts of carbon dioxide. It can take 20 years for a tree to become a significant sequesterer. But when it does, the result is cleaner air and long-term storage of greenhouse gases that would otherwise be dangerously heating the planet.

In other words, think of Vermont and vast stretches of New England, Quebec and Ontario as packed with millions of cooling machines. Not air conditioners. Trees.

But as with so much else when it comes to energy and heat production, the picture is not simple. I've been thinking and writing about wood burning for a couple years now, and the more I do that, the more complicated it seems.

Some parts of the puzzle are becoming clearer. When it comes to burning wood biomass in a plant, it's an unwise and inefficient process to convert trees into electrical energy — as still happens at Burlington's climate menacing, trees-to-electricity McNeil plant. That plant is not alone as a wood polluter in Vermont, either, as *Seven Days*' Kevin McCallum documented.

McNeil Generating Station, Burlington, VT

Moreover, the film "Burned" powerfully demonstrates that cutting down large swaths of trees in the southeastern U.S., then shipping them to Europe for burning -- and claiming they are "clean, renewable energy" — is in fact perpetuating a massive fraud.

Even Middlebury College's advanced heating plant, which more efficiently uses regionally sourced wood chips, has lost some of its luster. Why? The latest science indicates it takes 50-100 years to achieve net-zero carbon emissions from burning wood — a timeframe that's much longer than we have before climate change rages out of control. It's a bad idea at this point in history to pulse large amounts of burned-wood carbon dioxide into the air.

(Which is why the college's efforts to produce electricity from a large solar field are so important. Much of the solution to our energy needs lies in cleaning up the electrical grid with wind and solar, and electrifying pretty much everything.)

Perhaps we shouldn't be burning trees at all. Instead, we should probably be preserving everything we've got and planting billions more trees.

Mary Booth, founder of the Partnership for Policy Integrity, says biomass is the new coal. As she puts it, "Climate science shows that to avoid the most catastrophic warming impacts, the world must cut its carbon emissions in half in the next few years, and be carbon-neutral, balancing emissions with carbon uptake, by 2050. There is no way to achieve this without a vast restoration and expansion of the world's forests."

"Not so fast," reply some New England experts. As we transition away from burning things, heat has to come from somewhere. "From a carbon emission perspective," journalist Dave Mance III writes, "burning wood is always better than burning coal or gas or oil, since none of that fossilized carbon [in fossil fuels] should be in our atmosphere."

Technology matters. Emma Hanson, Vermont's wood energy coordinator, points to a study concluding that switching from oil or propane to locally sourced pellets in a good boiler will reduce greenhouse gas emissions by over 50 percent.

But it's not all about the tech. "My favorite thing to point out when I'm talking about wood heat in Vermont," Hanson says, "is that when Vermonters heat with fossil fuel, 78 cents of every dollar leaves the state. Whereas when we heat with locally sourced wood, the inverse of that is true. So all that money stays right here in our communities, creating jobs for our neighbors, retaining local wealth."

That warm fuzzy feeling, it turns out, isn't just the centuries-old buzz that comes from sitting around a fire. It's like the kind of virtuous glow we feel when we buy local produce at a farmer's market.

Let's turn back to electric heat for a moment. Heat pumps draw from our comparatively clean grid. And they're even cleaner if you get much of your power from solar panels.

But as the recent chilly weather has reminded everyone, heat pumps often don't work as well when temps drop below zero. Supplementing a heat pump with another small electric heating unit is a good option at that point.

When the weather is really frigid, many of us opt to supplementally heat with a woodstove. Which sure beats turning on the oil-burning furnace or cranking up radiant heat that's powered by dirty propane.

Amid all the twists and turns of the debate over wood burning, a couple of things seem clear: The science of forestry and sequestration is still evolving; woodstoves are cleaner than fireplaces; and pellet stoves and boilers using locally sourced wood are far cleaner still.

So what's a chilly Vermonter to do? Weatherization and conservation are the first steps toward cleaner, greener heat. Get a heat pump and maybe stove burning pellets or "bio bricks." And sure, use that woodstove, sparingly, for both its physical and emotional warmth.

Think about your wood source, too. I'm lucky to get wood from my five acres in the form of old dead elms and wild pear trees. Their sequestering days are done. I cut them into burnable pieces with an electric chainsaw. Logs from local wood lots are another good source.

But when it comes to the old days of burning wood in the fireplace or woodstove all day long? That's a climate buster, and we should all just cool it.

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