Column: No Panaceas in Our Energy Future

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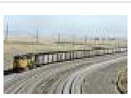
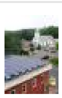
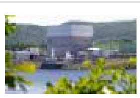
FILE - In this Aug. 22, 2006 file photo, a coal train travels in northeast Wyoming near Gillette. Tough new limits on the amount of heat-trapping emissions new power plants can emit proposed by the Obama administration Friday, Sept. 20, 2013, will likely accelerate a shift away from coal-fired power and toward electricity generated with natural gas, wind, and sunshine. (AP Photo/Nati Harnik, File)

Chuck Wooster
For the Valley News
Sunday, May 4, 2014
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This past winter, my family and I visited Yellowstone National Park. Besides the bison, the golden eagles and the vast, glorious landscape of our largest natural wonder, we saw another: coal.

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The coal wasn't in the park but just outside it, rumbling by, car after car, in the longest train I've ever seen, passing through Montana on its way from the Powder River Basin of Wyoming to the coast of Oregon, to be loaded onto ships headed for China to feed its burgeoning fleet of power plants half a world away. I counted more than 100 cars of coal before the train was swallowed up by a tunnel, and then I stopped counting.

I realized later that I stopped breathing, too, while counting the cars, the sight was so awesome to behold, an extraordinary triumph of engineering and transportation, of economics and capital deployment, and of the human ability to imagine and perform great feats in pursuit of a better life and society.

Chuck Wooster

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At the same time, what better symbol of the end of the world as we know it: If we can't leave that coal in the ground, we have almost no chance of keeping the Earth's climate within its familiar confines. There's enough coal available to power human civilization for many centuries to come, long past the point where the Earth's surface will still be recognizable to ourselves and to our fellow species.

My first serious job out of college was working at a wind power company that was developing electronics for monitoring wind and wind turbine performance. We were all bullish on wind power at that point, in part because wind power was still somewhat theoretical — outside of a few spots in California that had hundreds of turbines and routinely showed up as the backdrop for futuristic car ads, there were almost no wind turbines anywhere in North America. It was easy to be pro-wind. Now it's much harder, as witnessed by the noise, bird, aesthetic and habitat issues that have cropped up around sites like Lowell Mountain in Vermont.

A friend of mine manages tens of thousands of acres of forest in New Hampshire and Vermont, and he's opposed to wind power because, here in the Twin States, our only windy sites are on the high ridge lines that also happen to be rare habitat for some of our most vulnerable species, like Bicknell's thrush and the pine marten. If we put wind towers on all those ridges, we'll lose those species. He'd much rather see us develop our biomass resources, which could provide year-round heating for tens of thousands of homes in our region.

A former Dartmouth professor of mine has done research suggesting that biomass isn't as carbon-neutral as it might otherwise seem. Sure, trees are burned and trees grow back, but logging seems to release a certain amount of carbon that was otherwise stored deep

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in the soil, carbon that could take thousands of years to return to the soil after logging. And anyway, many people are uncomfortable with the very idea of cutting trees on a large scale, even though we've been doing that for centuries here in New Hampshire and Vermont.

A friend of mine who lives nearby is bullish on photovoltaic solar, and it's not hard to see why. Once the panels go in, the energy is silent and solid state and can be generated on otherwise underutilized spaces like flat rooftops and old landfills. Solar panels are becoming as common as dandelions hereabouts, whether in large installations along the highways or in backyard arrays, as the costs and financing of solar have improved. Yet solar, too, is no panacea: It doesn't keep money in the local economy the way biomass does; it will inevitably utilize land that is otherwise useful for farming or housing if we really scale it up; and perhaps most obviously, it doesn't work at night.

This is where the pro-nuclear crowd usually steps in. If we're going to invest heavily in electric cars and electric heating as a way of reducing our dependence on oil and gas, we're going to need many more power plants than we have now, and they're going to need to operate around the clock. Nothing but nuclear power fits this bill if we're talking non-carbon energy sources. Yet uranium mining is no picnic, especially if you live in a western state with a uranium mine. A friend of mine who was born in Japan and who has visited the Fukushima area assures me that even a single visit to that region will make an anti-nuclear activist out of anyone. I believe her.

The hydro folks point out that hydro-electric power is just as reliable as nuclear without nearly the same risk, though another guy I know who has canoed in the James Bay region where Hydro Quebec's dams are located feels the same way about hydro as my other friend feels about nuclear.

Finally, there's the pro-conservation crowd, who point out that the very cheapest and most reliable source of energy is the "nega-watt," which is to say, the energy that we avoid having to generate in the first place by instituting conservation measures. There's much to like about this approach except for the fact that, since much of the energy we use is consumed in the privacy of our houses and cars, there's a fair amount of government regulation and intrusion required to enforce something like "thou shalt insulate your attic to the R-60 energy standard." Siting a new nuclear plant might actually be easier.

So where does this leave us? It turns out that the technical details to solve climate change are the easy part — we already have the tools in hand. If we adopt some version of an "all of the above" strategy, we'll have more than enough energy to meet our needs and maintain ourselves in the lifestyles to which we've become accustomed while keeping the climate habitable for ourselves and our fellow species. Princeton researchers Steve Pacala and Robert Socolow pointed this out more than a decade ago in their Science article, "Stabilization Wedges: Solving the Climate Problem for the Next 50 Years With Current Technologies."

The steps to get there are also relatively straightforward: first, end the subsidies we now lavish on fossil fuel of all kinds (amazingly, we're still funding the problem); second, enact a stiff and progressively stiffer tax on carbon to penalize its use; and third, return all the money from these canceled subsidies and new taxes back to us, the citizens, to deploy as we choose in purchasing the non-carbon energy we prefer. Done.

The greatest challenge we face in solving climate change is our innate tendency to cry "NIMBY" — Not in My Backyard. NIMBY worked well in the early years of the environmental movement when the goal was plugging up pipes that were polluting local neighborhoods. It's become a huge obstacle now that we're trying to clean up the global neighborhood, where there is no other backyard to put stuff. I posed the NIMBY problem to a local energy researcher and investor, and he nicely summarized the solution this way, "We spend too much time focusing on what we're against when we instead need to be spending our energy on what we're for."

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Pretty straightforward. But the time is now, because while we're debating the merits of solar versus wind, or conservation versus biofuel, the coal trains are rumbling through Montana, day after day, around the clock, each day bringing us that much closer to the end of the world that we know and love.

Chuck Wooster is a farmer in Hartford, where he serves on the Selectboard.