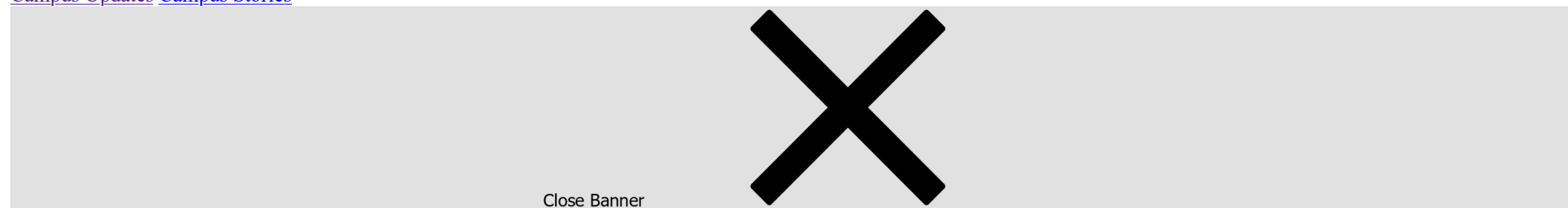


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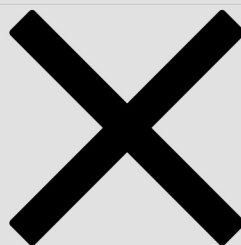
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  - [Arts & Humanities](#)
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  - [Media Contacts](#)
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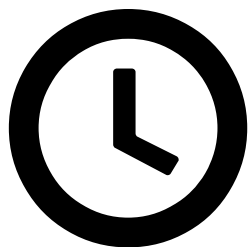
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Feb 19, 2021

## **Carbon Neutral is Not Nature Neutral**

By: Scott Tinker

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It's all the rage for companies, states and countries to make carbon neutral pledges. "Zero carbon" seems to roll off the tongues of kids like "brushing teeth." Fortunately, kids' wise parents know that teeth brushing is only one component of health, along with exercise, diet, sleep and the like. The same goes for carbon neutral.

It is only one component of a healthy planet, along with water, air, land and the like. Should carbon neutral be the singular measure of planetary health, warranting government market interventions and trillions of dollars of taxpayer money? Probably not.

It is understandable why people might have carbon myopia. Political leaders, scientists and media are bombarding them with daily reports that we must reduce carbon emissions immediately to avoid catastrophic climate change and save humans from what President Biden calls the “existential crisis of our time.”

Thoughtful environmentalists who acknowledge that climate change is real, but demonstrate that it is not an existential threat or even our most serious environmental problem are systematically attacked as “deniers.” Or those who see climate change as a major issue—but deeply analyze and provide the data to show that many trends in natural disasters, human health and other impacts are actually improving—are criticized for being “too positive” and “highly biased.”

Carbon Neutral – or net zero carbon – is when carbon emissions from an entity are “balanced out” by reducing its own emissions and/or buying carbon dioxide offset credits. Whether there are enough legitimate emissions credits available to offset the pledges—in the case of China, which emits more than 25% of global CO<sub>2</sub> each year, there clearly are not—or whether the time frame of the pledges will be honored, should be matters of significant and warranted discussion. Instead, for reasons including public adulation, peer respect, political capital, virtue signaling, improved corporate valuation, process efficiency and more, carbon neutral pledging is the phrase that pays.

But what if well-intended attempts to go net zero result in unintended negative consequences to the water, land and air on which all nature depends? To address this possibility requires an objective assessment of the options to actually reduce CO<sub>2</sub> emissions at the scale (billions of tons per year), cost (trillions of dollars) and time frame (a decade or two) required.

Options favored by the left include solar, wind, batteries, biofuels, and efficiency. Options less touted, but arguably as or more scalable in the time frame required include hydrogen, nuclear, geothermal, fuel switching, and CCUS (carbon capture, utilization and storage). Interestingly, with the exception of efficiency, every option has significant negative environmental impacts.

To make enough solar panels, wind turbines, and batteries to replace dispatchable coal, natural gas and nuclear will require non-renewable mining of lithium, cobalt, and other metals.

It will also require manufacturing and landfill disposal of massive and toxic materials. Hydroelectric dams could exacerbate emissions and impact land and water.

To create enough biofuel to replace petroleum will require an inordinate amount of fertilizer, water and energy and could exceed the available land.

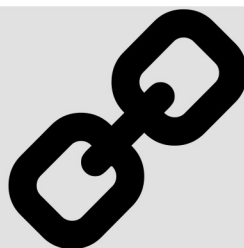
Hydrogen for fuel cells and industrial use requires energy to split methane, water or other molecules and has greenhouse emissions of its own.

Nuclear is a scalable, zero-emissions, high-density option but requires handling of fission products. Geothermal requires drilling and has other impacts. Fuel switching from coal to natural gas has been effective in the U.S., but requires drilling, pipelines and has other emissions.

The reality we face is that humans impact the earth, and we have to do more than brush our teeth to keep the planet and its inhabitants healthy. In our passion to address climate change we must balance the major benefits of energy, like ending global poverty and powering all aspects of modern life, while minimizing environmental impacts of all forms of energy on the atmosphere, land, water and air. Otherwise, carbon neutral could very quickly become nature negative.

*Scott Tinker is an Endowed Professor at The University of Texas at Austin, lectures globally on energy and the environment, and produces international energy documentary films.*

A version of this op-ed appeared in the [San Antonio Express News](#), [Lubbock Avalanche-Journal](#), [Austin American-Statesman](#) and the [Abilene Reporter-News](#).



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**University Communications**

Email: [UTMedia@utexas.edu](mailto:UTMedia@utexas.edu)

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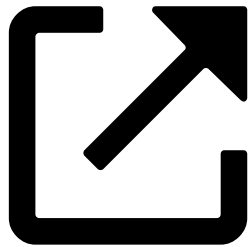
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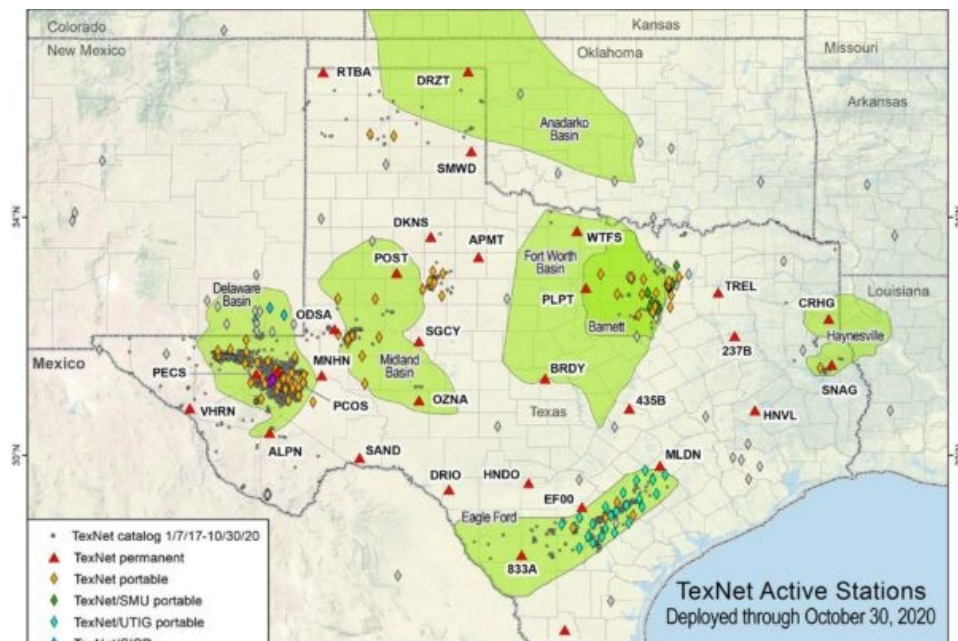


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