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In the July article by Michael Marder, Tadeusz Patzek, and Scott Tinker, I found no reference to greenhouse gases, global warming, fugitive methane emissions, drought, pollution, ocean acidification, coral bleaching, overpopulation, sea-level rise, energy efficiency, energy conservation, nonpolluting energy sources, overfishing, and other concerns that many scientists, technical people, politicians, and citizens are dealing with. There is a growing realization today that we may suffer a catastrophe if we use all the fossil fuels we are able to extract. How do the authors view my concerns?

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[Editor's note: *PHYSICS TODAY* received several letters raising the same concerns as Richard LaRosa's.]

► **Marder, Patzek, and Tinker reply:**

David Cornell points out that we did not discuss wind, solar, and nuclear energy. Our purpose was to spur debate on the involvement of the physics community in research and education into energy by focusing on recent developments in hydrocarbon extraction, not to provide a comprehensive overview of potential solutions to the global energy problem. One of us (Tinker), through the Switch Energy Project (switchenergyproject.com), has provided a broad overview of advantages and disadvantages of various energy sources.

Alfred Cavallo brings up too many points for us to respond to all of them. He asks why we omitted the strong decrease in US petroleum production in the past year. According to the US Energy Information Administration, for the first nine months of each of the past six years US petroleum production has

been 1.5, 1.7, 1.9, 2.3, 2.5, and 2.4 million barrels. There has not been a strong decrease.

Cavallo also presents the virtues of energy-efficient homes. We note that one of us owns a home that runs off solar panels, has only electric appliances, uses only electricity for heating and cooling, and exports many megawatt hours of power each year to the electric grid. He also disconnected the city water supply and uses only rainwater gathered in three large tanks. Another of us invested heavily in home energy efficiency, including additional insulation, radiant barrier, water heaters, and beyond. The third reinsulated his home, gave up his parking permit, and has biked to work every day for more than 15 years. Such conservation measures are needed, but they cannot by themselves solve the problems we raised.

Richard LaRosa asks for our thoughts on the environmental dangers of using fossil fuels. His concerns are valid, and we share them. Yet to stop using fossil fuels precipitously and without a plan

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