

The transition to environmental sustainability is underway, but it won't be easy

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Transitions are never easy. Sometimes they are underway, and we are

unaware of them. When New York City transitioned away from a manufacturing to a service economy, we lost a million people and 500,000 manufacturing jobs. Landlords lost their buildings to the city because they couldn't or wouldn't pay property tax, and some burned down their buildings to collect insurance. People predicted the end of New York City.

Few people understood that we were in the midst of a technology-forced transition from a manufacturing economy to one built on services. At the transition's low point, over 2,000 homicides took place in a single year. Our [public spaces](#) were run down, and drugs and crime were everywhere. By the turn of the 21st century, the economic transition was widely understood. Finance, media, health care, tech business, education, and tourism had replaced manufacturing. We no longer manufactured clothing in New York City, but instead, we designed and marketed it here. New York City was widely recognized as one of the world's premier global cities.

The transition to a renewable resource-based economy has begun in the developed world, but when moving from one economic paradigm to the next, the people benefiting from the status quo will resist change and, at times, be successful in delaying the future. But in the end, technology influences economic life; economic life influences culture and social life, and eventually, all of that influences politics. The change that technology has brought to our world has accelerated the rate of transition but not its ultimate trajectory. A planet of over eight billion people consuming at the rate we consume will eventually make the one-time use of the planet's resources too expensive and destructive to maintain. The transition to environmental sustainability is underway, but the transition will be anything but smooth and easy.

In the *New York Times* last week, [David Gelles](#) reported that "in the fight against global warming, the [federal government](#) is pumping a record

\$370 billion into [clean energy](#), President Biden wants the nation's electricity to be 100 percent carbon-free by 2035, and many states and utilities plan to ramp up wind and [solar power](#). But while policymakers may set lofty goals, the future of the American power grid is in fact being determined in town halls, county courthouses and community buildings across the country. The only way Mr. Biden's ambitious goals will be met is if rural communities, which have large tracts of land necessary for commercial wind and solar farms, can be persuaded to embrace [renewable energy projects](#). Lots of them."

It may well be that some communities will resist siting wind and solar installations, and others will resist siting transmission lines. But as Gelles reports in his piece, some [rural communities](#) are attracted to the economic benefits of renewable energy and favor siting, while others do not wish to disturb the rural setting they treasure. No one should be surprised that this is going on, and it does not mean that the transition to renewable energy will fail. The Koch Brothers can and will pay for renewable energy opponents to organize against solar and wind; disinformation peddlers can lie all they want, but [fossil fuels](#) are going to be replaced—it's just a question of when.

What amazes me about some of the journalism about the [renewable energy](#) transition is that the probability of technological innovation and breakthrough is not discussed: Gelles insists that "the only way" Biden's carbon reduction goals can be met is if rural areas can be convinced to site thousands of wind power and solar farms. That assumes we won't see breakthroughs in solar, wind, battery, and possibly nuclear fusion technologies over the next decade. Perhaps home energy systems will replace the grid for most people, reducing the need for thousands of solar and wind farms. The *New York Times* report also assumes that we can't site some of these facilities in suburban and even urban areas. Solar arrays could be built on top of parking lots. Lots of malls are struggling—maybe they'd go for solar or wind installations on their roofs or parking

fields. There are many ways to reach our 2035 goals. Rural siting is not the only way to decarbonize. And if we don't get to zero carbon until 2040 or we can't get below 10% carbon until 2050, I think we'll still deserve a pat on the back for accomplishing a successful transition.

The story on rural siting in the Times was far from the only news coverage of the transition to environmental sustainability. In the Wall Street Journal on January 1, 2023, two front-page stories were entitled: "Shift to EVs Triggers Biggest Auto-Factory Building Boom in Decades" and "Soaring Costs Threaten U.S. Offshore-Wind Buildout." The first piece focused on the billions of dollars in new auto manufacturing capacity largely invested in the American south, and the second on the inflationary and supply chain issues delaying, although probably not ending, off-shore wind construction. Economic [transitions](#) are complex and difficult, and we should expect to see more examples of two steps forward followed by one step back. But who would have predicted the amount of private capital now being invested in electric vehicles?

It's important that we understand what public policy can do and the way policy initiatives actually work. Public policy does not solve problems—it makes them less bad. Public policy is remedial, serial, and incremental. It takes many steps in an effort to remedy the problem at hand. Each step teaches us something that informs the next step that we take. Homicides in New York City provide a textbook case of the impact of public policy. At its peak in 1990, we saw 2,245 homicides in New York City. At its low point in 2017, homicides had declined to 192. In 2021 homicides rose to 488, but this past year (2022), they again declined to 418. But even in 2017, all the policing and societal advances over three decades did not achieve perfect public safety. Almost two hundred families suffered the loss of a loved one. I dwell on this to make the point that our goal must be progress, not perfection. New York City's success in reducing homicides was not a smooth and easy process, and it

was far from cost-free. The decarbonization goals set by the government and the public funds being invested are designed to stimulate private investment and action. How quickly that takes place is impossible to predict, but the funding and the targets are already influencing private-sector investment.

Moreover, the \$370 billion dollars the feds are injecting into the green economy virtually guarantees that technologies not quite ready for the commercial market will get there sooner because the federal thumb is tilting the benefit-cost scale. Predicting the energy future based on the exclusive use of current technology is bound to result in inaccurate predictions. However, believing that we can run our economy without a generation-long transition from fossil fuels is equally ridiculous. The reality of climate change requires government intervention to accelerate the transition, but there are inherent limits to the speed of such a massive transition. It takes a while for capital to be deployed. Organizations that know how to operate one technology need to learn how to operate new technologies. Finally, the people benefiting from the current system will resist change wherever they can. In sum, we will continue to use fossil fuels for longer than we might like.

Fortunately, reality has a way of correcting ideological delusion. Fossil fuels are finite, and as Russia recently demonstrated and as OPEC taught us half a century ago, these vital resources can be withheld for political purposes. Fortunately, the sun is free, reaches the entire planet, and getting power from it is getting cheaper and more reliable. On a more crowded planet, corporate profits can be impacted by environmental risks, and so investors are insisting that those risks be measured and reported. The ideological right may consider all this left-wing ideology, but it's the reality of the more crowded and environmentally threatened world we live in.

The transition to [environmental sustainability](#) is necessary if we are to

maintain and build the high throughput economy needed to maintain political stability in an economically interconnected and interdependent world. But this transition will change the material basis of the world economy. Energy is the first resource to go renewable due to the challenge of climate change. But others will follow. The transition has begun, and its pace will be influenced by technology, capital, and public policy.

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