

“Stand Up for Nuclear”

Energy Density, Climate Policy, Development

By G. Tracy Mehan III

A recent front-page headline in the *New York Times* stated, “Disastrous Wave of Climate Events Slams California. Scientists Fear Fires Are Just the Start.” Journalists Thomas Fuller and Christopher Flavelle, report that “multiple mega fires [are] burning more than three million acres.” They continue, “If climate change was a somewhat abstract notion a decade ago, it is all too real for Californians.”

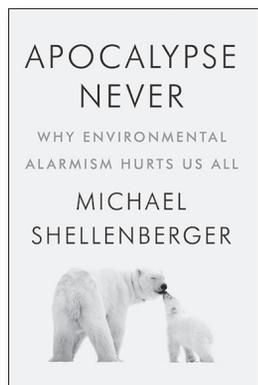
These are certainly disastrous events; but Michael Shellenberger, author of *Apocalypse Never: Why Environmental Alarmism Hurts Us All*, demurs as to any linkage between the catastrophic fires in the Golden State and a changing climate. Actually, he rejects the notion entirely.

Shellenberger cites Jon Keeley, a U.S. Geological Survey scientist in California who has researched the topic for forty years: “We’ve looked at the history of climate and fire throughout the whole state, and through much of the state, particularly the western half of the state, we don’t see any relationship between past climates and the amount of the area burned in any given year.” Keeley and other colleagues modeled 37 different regions in the United States and found that “humans may not only influence fire regime but their presence can actually override, or swamp out, the effects of climate.” Indeed, the only statistically significant factors for the frequency and severity of fires, on an annual basis, were population and proximity to development.

Among the many interesting, controversial arguments Shellenberger makes are these: humans are not caus-

ing a “sixth mass extinction,” the Amazon is not “the lungs of the world,” the amount of land we use for meat — our biggest use of land — has declined by an area nearly as large as Alaska, carbon emissions are declining in most rich nations, food surpluses exist and will continue to rise as the world gets hotter, and habitat loss and the direct killing of animals are bigger threats to species than climate change.

A stunning data point, cited by Shellenberger, drawn from the International Disaster Database, Universitè



Apocalypse Never.
Why Environmental Alarmism Hurts Us All.
By Michael Shellenberger.
Harper; 413 pages; \$29.99.

Catholique de Louvain in Brussels, documents, at footnote 28 on p. 292, a 92 percent decline in the decadal death toll from natural disasters since its peak in the 1920s, a period when the global population nearly quadrupled!

Michael Shellenberger has been the enfant terrible of the environmental movement for nearly fifteen years. With Ted Nordhaus he famously declared “the death of environmentalism.” They co-founded the Breakthrough Institute, an “ecomodernist think tank” focusing on the limits of carbon taxes and regulation, arguing for major public and private investments in clean-energy R&D and infrastructure designed to foster

economic opportunity. They severely criticized the failed Waxman-Markey cap-and-trade bill. “We have become convinced that modern environmentalism, with all of its unexamined assumptions, outdated concepts, and exhausted strategies, must die so that something new can live,” they declared.

According to Shellenberger and Nordhaus, environmental organizations spent 40-plus years defining themselves against “conservative values” such as cost-benefit accounting, smaller government, less regulation, and even free trade, then still a conservative if not populist position. Environmentalists tended to see these values as a distraction from their issues. The time had come to start framing policy proposals around core American values, they maintained.

A former vegetarian and a supporter of the Rainforest Action Network at 16, Shellenberger started his own operation, Environmental Progress, focused on promoting nuclear energy. He continues to provoke, recently writing articles for *Forbes*, including one apologizing for being part of the “climate scare” while still arguing for carbon reductions and economic development by means of nuclear power over renewables which he once promoted during the Obama years. “On behalf of

environmentalists everywhere, I would like to formally apologize for the climate scare we created over the last 30 years,” wrote Shellenberger. “Climate change is happening. It’s just not the end of the world. It’s not even our most serious environmental problem.”

Provocateur though he be, Shellenberger has written an interesting book, thoroughly researched. In *Apocalypse Never* he offers a kind of “unified field theory” of international economic development and environmental amelioration grounded largely, but not solely, on the high energy density of nuclear power. True, he has entirely too much fun skewering some environmental-

In the Literature

ists and other sacred cows. He does so, however, from consistent, foundational view as to the necessity of linking environmental protection and economic development, especially in places such as Congo, Indonesia, Brazil, and other parts of the world.

Shellenberger describes renewables, solar for instance, as “energy-dilute fuels.” Thus, solar farms require large amounts of land with resulting negative environmental impacts. For instance, California’s Ivanpah solar farm requires 450 times more land than its last operating nuclear plant, Diablo Canyon. The solar farm had to hire biologists to pull threatened desert tortoises from their burrows, put them in pickup trucks, and take them to pens where many died.

“The maximum efficiency of wind turbines is 59.3 percent, something scientists have known for more than one hundred years,” argues Shellenberger. “The achievable power density of a solar farm is up to 50 watts of electricity per square meter. By contrast, the power density of natural gas and nuclear plants ranges from 2,000 to 6,000 watts per square meter.” Solar panels and wind turbines also require 16 times more materials, and generate 300 times more waste than nuclear plants, including toxic materials.

“Today, humankind relies upon fuels that are up to one thousand times more power-dense than the buildings, factories, and cities they power,” notes the author. “The low power densities of renewables are thus a problem not only for protecting the natural environment but also for maintaining human civilization.” Further, “Human civilization would have to occupy one hundred to one thousand times more space if it were to rely solely on renewables.”

France spends little more than half as much for electricity that produces one-tenth of the carbon emissions of German electricity since the latter’s phase out of nuclear and embrace of renewables, claims the author.

“Had Germany invested \$580 billion into new nuclear power plants instead of renewables like solar and wind farms, it would be generating 100 percent of its electricity from zero-emission sources and have sufficient zero-carbon electricity to power all of its cars and light trucks as well.” Instead, renewables contributed to a 50 percent increase in electricity prices since 2007. Says Shellenberger, “In 2019, German electricity prices were 45 percent higher than the European average.”

Vermont not only failed to reduce emissions by 25 percent by relying on renewables, but its emissions rose 16 percent between 1990 and 2015, “in part due to the closure of the state’s nuclear plant, and in part due to the inadequacy of renewables,” writes Shellenberger.

According to the Czech-Canadian academic Vaclav Smil, author of *Power Density: A Key to Understanding Energy Sources and Uses* (MIT Press, 2015), an author Shellenberger cites at length, “This power density gap between fossil and renewable energies leaves nuclear electricity generation as the only commercially proven non-fossil high-power-density alternative.”

Since the United States consumes almost 50 percent of its electricity during the cold months, storage of energy becomes a significant and costly challenge as does the perennial problem of intermittency.

“Just as the far higher densities of coal made the industrial revolution possible, the far lower power densities of solar and wind would make today’s high-energy, urbanized, industrial civilization impossible,” claims Michael Shellenberger.

This energy intensity gap results in problems such as the loss of forests to produce wood-burning biomass. If just 10 percent of U.S. electricity were to come from this source, it would require an area of forest land the size of Texas. If the nation were to replace all of its gaso-

line with corn ethanol, it would need an area 50 percent larger than all of the current U.S. cropland.

“Power density determines environmental impacts. As such, coal is good when it replaces wood and bad when it replaces natural gas or nuclear. Natural gas is good when it replaces coal and bad when it replaces uranium,” observes Shellenberger. “Only nuclear energy can power our high-energy human civilization while reducing humankind’s environmental footprint.”

Starting from a commitment to humanism, he sees energy intensity as essential for economic development beyond affluent Europe and North America. “Environmental humanism will eventually triumph over apocalyptic environmentalism, I believe, because the vast majority of people in the world want both prosperity and nature, not nature without prosperity,” writes Shellenberger.

Moreover, “The evidence shows that an organic, low-energy, and renewable-powered world would be worse, not better, for most people and for the natural environment.”

Shellenberger discounts a climate apocalypse, but supports nuclear as the primary solution for reconciling economic growth with environmental protection. Many environmentalists envision an apocalypse but discount nuclear energy. It is nothing if not an ironic turn of events.

Shellenberger and his colleagues started organizing pronuclear demonstrations in 30 cities around the world in 2019. Evidently, the cry of “Stand-up for Nuclear” is resonating in Germany. He was even invited to testify before Congress. Maybe nuclear power is not a lost cause. It should get a second look from the body politic.

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**Environmentalism’s
enfant terrible is
out with a new book
promoting nuclear**