

# INTRODUCTION

*“Essentially the entire developed part of the world is currently embarked on a crash program to eliminate fossil fuels from the energy system of the economy.”*

—FRANCIS MENTON (2022)<sup>1</sup>

An engineer who attended one of my recent presentations told me his wife had returned her electric vehicle (EV) to Tesla, the manufacturer. Her EV would not charge during the cold Cleveland winter of January 2022. Also in January, more than 100 insurance companies sued Texas electrical grid operator ERCOT because of the grid failure that happened in February 2021 due to the cold weather. The failure resulted in hundreds of deaths and tens of billions of dollars in damages. Former Swiss Environmental Minister Simonetta Sommaruga, seeking ways to reduce energy use, recently advised people to “shower together.”<sup>2</sup> These examples point to growing problems with the world’s rush to transition to renewable energy.

Over the last three decades, society has become convinced that a global energy transition is needed. The United Nations, the International Energy Agency, environmental groups, political leaders, and climate scientists warn that coal, oil, and natural gas, also known as hydrocarbon energy sources, must be eliminated. Instead, renewable sources, including wind, solar, biofuels, and hydrogen fuels, must be adopted. Carbon dioxide (CO<sub>2</sub>) was branded a pollutant, with hydrocarbons to be eliminated or CO<sub>2</sub> emissions captured.

Political leaders claim that, without an energy transition, humanity is heading for climate change catastrophe. Melting icecaps, rising oceans, flooding coastal cities, stronger hurricanes and storms, droughts and floods, species extinction, and other disasters await us. They say we have only a few years to change course before the coming climate apocalypse.



Today, the world invests over \$500 billion a year on renewable energy systems and EVs.<sup>4</sup> Thousands of climate change laws across more than 100 nations include feed-in tariffs, subsidies and mandates, laws to reduce energy demand, and statutes to force a transportation transition. Gas stoves and the sale of gasoline

and diesel cars are now banned in several nations and cities. Carbon trading markets force businesses to price the emissions of CO<sub>2</sub> from industrial processes.

“Net Zero” has become the new badge of honor for climate compliance. Companies rush to demonstrate their allegiance to green ideology, with plans to reduce emissions, switch to carbon-free electricity, and achieve Net Zero. Utility companies bow to public pressure at the expense of ratepayers, building intermittent wind and solar arrays, while closing reliable coal and nuclear plants. Car companies extol the benefits of EVs, pledging to become 100 percent electric by a future date.

Over the last 20 years, the world has spent almost \$5 trillion to promote wind, solar, biofuels, and electric vehicles but with surprisingly little to show for it.<sup>5</sup> Coal, oil, and natural gas continue to provide about 80 percent of the world’s total energy supply, the same energy share as in the 1990s. Fuel from petroleum continues to power more than 90 percent of land vehicles and more than 99 percent of aircraft and ships. Heavy industries, such as cement, chemicals, fertilizer, plastics, and steel, remain overwhelmingly powered by natural gas or coal. For every year to date, the growth in energy output from renewable sources has been less than the incremental growth in world energy consumption.

Renewable energy suffers from a number of serious weaknesses, which emerge as penetration increases. With nuclear power out of favor, wind and solar are the only possible sources to replace hydrocarbon-generated electricity. But wind and solar are intermittent generators, requiring dispatchable power sources, such as natural gas, as backup to assure

power reliability. Their arrays require vast amounts of land and thousands of miles of new transmission lines, which face rising local opposition. Wind and solar deployments boost required system capacity, hike electricity prices, and increase the risk of system blackouts.



Green advocates call for all vehicles to

transition to biofuels or electric drive. But biofuels are expensive and don't really reduce CO<sub>2</sub> emissions. EVs will penetrate car markets but face cost, charging, and consumer-preference barriers that will slow market acceptance.

Heavy industry poses the toughest problem for any green-energy transition. Leaders propose carbon capture and storage (CCS) and hydrogen fuel to replace coal and natural gas fuels in industry. But CCS is expensive, and the huge volumes of carbon dioxide to be stored defeat any rational capture plans. Expensive hydrogen fuel requires enormous investment in hydrogen electrolyzers and an incredible amount of additional renewable energy capacity to power them.

Finally, a transition to renewables requires vast amounts of cobalt, copper, lithium, nickel, and other special materials, requiring a huge expansion in world mining, along with generating mountains of waste from used wind turbine blades, solar panels, and batteries. Mining requirements, metal shortages, and growing waste will raise the costs of electric vehicles and other renewables, stimulating opposition and slowing market penetration. The larger the renewable penetration, the larger mining and waste factors will become.

Green energy is headed for a breakdown. The 2022 world energy crisis may be just the first of several transnational energy shocks that demonstrate the futility of a renewable future. Europe's dependence on wind, solar, and imported natural gas, combined with Russia's invasion of Ukraine, resulted in a step-function drop in living standards and the severe destruction of industry on the continent. Energy shortages and astronomical costs may plague Europe for a decade. Green-minded states in the US and provinces in Australia may be next for power system failures and escalating costs as renewable energy is deployed.

But an even larger specter looms over green energy. The fear of human-caused climate change, the reason for the demanded energy transition, is a foundation based on faulty science and misguided societal acceptance. Natural forces dominate Earth's climate, not industrial emissions. These forces may cause Earth to cool over the next two decades,



extinguishing climate mania and removing the reason for endless mandates and spending to promote a renewable energy transition.

This book provides a minority point of view, but a view based on energy reality. We encourage readers to wade into it with an open mind. Chapter 1 discusses the Hydrocarbon Revolution, which brought energy abundance to developed nations, and also the situation in developing countries that still lack hydrocarbon energy. Chapter 2 covers the rise of renewable energy, which was driven by world oil crises, the need for cleaner air, and finally fears about human-caused climate change. Chapter 3 provides scientific evidence to show that the theory of man-made global warming is unfounded, that natural forces dominate Earth's temperatures, and that CO<sub>2</sub> is not a pollutant. Chapter 4 discusses the war on hydrocarbon energy. Chapter 5 discusses efforts to convert always-on electrical systems to intermittent wind and solar, with resultant rising electricity prices and system blackouts. Chapter 6 discusses programs to ban household use of natural gas and fears about small particle pollution. Chapter 7 covers the history and rise of EVs and their pros and cons compared to gasoline- and diesel-powered vehicles. Chapter 8 covers ships, planes, and trains, and alternative fuels. Chapter 9 discusses programs to try to decarbonize heavy industry using carbon capture and hydrogen. Chapter 10 covers the 2022 world energy crisis and discusses trends against further renewable growth. Chapter 11 predicts a renewable failure and proposes better pathways for the future.

Along the way we'll have some fun. This book is filled with sidebars about crazy energy schemes to help save the planet. From topping off gas tanks with beer-based vehicle fuel, to wearing carbon-dioxide-sucking T-shirts, to donning dresses that charge your smart phone, people think they are helping to solve the energy crisis. Green transportation is in, including dirigibles, wind-blown catamarans, charging stations powered by waste-fryer oil, and buses that run on human poo. All of the sidebars are actual articles and quotes from the media except "College Courses We Expect to See," which are spoofs.

But energy is serious business. Five-thousand-pound energy bills in the United Kingdom are no laughing matter. Unfortunately, citizens, businesses, and world leaders will learn a painful economic lesson. The drive to replace low-cost, always-on hydrocarbons with low-density, unreliable renewable sources is bound to come to a bitter end.

This book takes a look at the current worldwide push for green energy and the shortcomings of that energy. It predicts a coming green breakdown, the cracks of which are already apparent. Policy makers, business and industry leaders, and everyday citizens can learn from this realistic look at the future of energy.