What would decarbonization actually cost? — Part II

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Consider other consequences of decarbonization.

All current production of fossil fuels would have to be phased out. The fuel-producing jurisdictions and countries, faced with economic disaster, might "push back" a bit. Further, as the imposition of regulatory restraints on fossil fuel consumption would undoubtedly cause the price of existing production to decline sharply, governments would have to centrally plan (i.e. totally control) virtually all parts of the energy economies in all the countries of the world.

It would be necessary to replace most of the world's existing industrial and transportation infrastructure that now depends on fossil fuels; the costs of this would be in the many trillions of dollars.

Without crude oil, the world's 50,000 merchant ships and 50,000 jets that are needed to keep the eight billion in this world healthy, would be grounded.

It would require the electrification of all parts of the global economy. Currently, electricity supplies only about 20 % of the world's energy needs.[2] The needed additions to transmission and distribution infrastructure to take those totals to 100% would be many times what has been accomplished over the past century – all done in 28 years.

The technological constraints are enormous. To take one example, electricity supply must be reliable, and wind and solar energy are intermittent (i.e. they produce only when the wind blows or the sun shines, not when electricity is needed). Bulk electricity storage is extraordinarily expensive and extremely limited in capacity. "Big batteries" typically only offer minutes of power generation back-up when in reality, a reliable power grid would need days or weeks of back-up power. Recent estimates for utility scale storage show combined renewables/storage costs to completely electrify an OECD country would be many times the current gross domestic product of those countries.[3]

Where is the accountability for delivering electricity, on a continuous uninterruptible basis, something near the nameplate rating that was permitted for any wind turbine or solar panel site?

Globally, farmers would not be able to obtain the supplies, fertilizers or pesticides they need to plant their crops and it is questionable whether they would have modern farm machinery. Food production would drop sharply in all parts of the world, as agricultural practices went back to what they were at the end of the 19th century. Billions of people would starve.

Without natural gas and coal, there would be a shortage of electricity generation capacity and fuel for residential and commercial heating. Almost all parts of the world would experience

blackouts and brownouts. This would make modern manufacturing possible in only some countries, like China, and that would have enormous strategic and security implications. Air-conditioning would become a luxury enjoyed by only those with higher incomes.

Because of the shortages of so many things, prices of goods would rise significantly, even as incomes fell. People would not be able to get most of the goods and services on which they now depend. Older people would be most vulnerable. Hospitals would not be able to get many of the medications that they need or be able conduct operations with the anesthetics now available. Many people would die as a result.

Oil derivatives manufactured from crude oil are required to construct tires for the billions of vehicles, asphalt for the million of miles of roadways, and all the components of the medical industry.

Expenditures by Governments

No organization reports on the expenditures of governments on emissions-reduction measures. This is not surprising. None of the member countries of the Organization for Economic Cooperation and Development (OECD) keeps a record of the measures that each country takes to reduce emissions. These come in many different forms – subsidies to renewables, tax exemptions and deductions, funding for "green" groups, public advertising, support for research and development, and so on. Governments are increasingly implementing "green procurement" programs that involve requiring their departments and agencies to buy renewable energy and alternative fuel products and services even when their cost far exceeds the costs of alternatives.

It is appalling that the subsidies to purchase an electric vehicle (EV) with a lithium battery are providing financial support for the environmental degradation and humanity atrocities occurring in the mining for exotic mineral and metals in countries with yellow, brown, and black skinned people. These exploitations are discussed in detail in the 2022 Pulitzer Prize nominated book "Clean Energy Exploitations."

We have only anecdotal evidence of what governments are spending. For example, according to European sources[4], global expenditures to promote renewable energy production and use were US \$3.7 trillion from 2011 to 2018. In the United States, the Energy Information Administration reported that the US federal government's subsidies to renewable energy (biomass, wind and solar energy) were \$15.3 billion in 2013 and \$6.7 billion in 2016.[5] The Texas Public Policy Foundation reported in 2020 that, over the period 2010 to 2019, US federal government subsidies to solar and wind totaled \$34 billion and \$37 billion respectively.[6]

Expenditures by Consumers and Industry

Similarly, there are no authoritative sources of information on the costs that have been borne by energy consumers because of government-imposed climate policies and regulations.

One of the largest of these expenditures concerns the cost of regulations that require electrical utilities to provide higher than market rates to purchase wind and solar energy. In many cases, these have caused electricity bills to increase by 50% to 100% over the last decade. Other regulations require oil refiners to use up to 15% ethanol or other biofuels to produce

gasoline and aviation fuels, thus adding to consumers' costs. The fastest growing of these costs, however, is the additional costs that are reflected in consumers' prices due to regulatory requirements that producers purchase emissions "credits" and "offsets" to meet arbitrary emission reduction targets. Again, there are no authoritative estimates of these costs.

Bloomberg Energy Research reports annually on industry investment on what it refers to as the "energy transition." According to its 2021 report,[7]the world committed a record \$755 billion to decarbonize the energy system that year, beating the previous year by 27%. Both renewable energy and electrified transport, the two biggest categories, rose to new records in 2021 as wind and solar installations and electric vehicle sales surged. Companies, governments and households invested \$366 billion in new renewable energy capacity in 2021, up 6.5% on the year. They also spent \$273 billion on electric vehicles and associated charging infrastructure, up 77%. On current trends, the EV sector should overtake renewable energy investment in 2022. The next largest sectors of spending were electrified heat at \$53 billion and nuclear energy at \$31 billion. Together, clean power and electrification (comprising renewables, nuclear, energy storage and electrified transport and heat) accounted for most of the investment, at \$731 billion. Hydrogen, carbon capture and storage and sustainable materials made up the rest, totaling \$24 billion. If one assumed conservatively that industry investment would continue at the same level from 2020 to 2050, the total expenditure would be \$15 trillion over that period.

Clean Energy is only Clean ELECTRICITY.

Those clean renewables, like wind turbines and solar panels, can only generate ELECTRICITY, and intermittent electricity at best from available breezes and sunshine. The indisputable science is that renewables CANNOT manufacture any of the oil derivatives that are the basis of the thousands of products that are the foundation of societies and economies around the world.

In fact, these renewables cannot exist without crude oil as all the parts of wind turbines and solar panels are made with oil derivatives manufactured from crude oil.

Next week in Part 3 of this series on the silliness, absurdity and evilness of attempting to eliminate life on Earth, awe will estimate future costs. Remember our goal is to allow our readers to laugh at the absurdity of decarbonizing the world which would be the equivalent of removing the oxygen from the room in which you are reading these essays.

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