What's So Green About Burning Trees? The False Promise Of Biomass Energy

Biomass energy – Source: nl.wikipedia.org

03-27-2024 ~ *Bioenergy companies are clear-cutting American forests to heat and electrify Europe. This broken system harms public health, the environment, and the climate.*

Renewable energy comes from matter that nature produces and replenishes constantly. The power generated through this source does not significantly threaten the environment, especially in comparison with fossil fuels, such as coal, oil, and natural gas, which take more than millions of years to develop and cause severe harm to our planet and climate when burned—fossil fuels "[account] for over 75 percent of global greenhouse gas emissions and nearly 90 percent of all carbon dioxide emissions," according to the United Nations.

Renewable energy derived from wind, solar, geothermal, hydrokinetic, and hydro energy has a much lower environmental impact than fossil fuels. It harnesses the power of readily available elements and does not diminish with use. The production cost of these new technologies has been steadily decreasing. "Technological innovation has continued to help bring down the cost of some renewables; a fact which earlier price prediction models overlooked," according to Matthew Ives, co-author of a report by the University of Oxford's Institute for

New Economic Thinking. And because wind and sunlight are inherently free, there are no ongoing feedstock costs.

Bioenergy, otherwise known as biomass energy, is, however, different.

This kind of power involves using living matter or matter that was recently been alive. Plants are commonly used as "feedstock" to generate biomass energy; examples are switchgrass, copra, cotton, sunflowers, palm nuts, wheat, sugar cane, canola, rice, and algae. Trees are also used, most often from the forests of the U.S. South, including pine and hardwood species. Materials derived from plants and animals are also a source of bioenergy. These biomass feedstock materials include paper scraps, cotton, wool, yard clippings, animal manure, animal fats, solid municipal waste, and sewage.

These feedstocks are dried out and then converted to energy. Most woody feedstocks are burned or "fired" directly, alone, or with fossil fuel. Other feedstocks are subjected to thermochemical conversion to produce solid, gaseous, and liquid fuels.

In 2019, biomass constituted 60 percent of all renewable energy used in the European Union—following the organization's 2009 pledge to shift from fossil fuels to renewable energy, which led to biomass being classified as a renewable energy source. Most of the wood pellets needed to make this bioenergy are mainly harvested in the United States, with the "American South [emerging] as Europe's primary source of biomass imports."

Woody Biomass Energy

A major subtype of bioenergy, woody biomass consists of small wood pellets produced from raw wood materials, including whole trees, branches, and wood dust. Woody biomass is essentially firewood.

Wood pellets can be made from any type of wood. In the past, they were mainly composed of "low-value wood," such as dust or chips left over from other wood products. However, the increasing demand for bioenergy—bioenergy accounts for 55 percent of renewable energy globally while making up for more than 6 percent of the energy supply in the world—has led to wood pellets being made from large logs and whole trees.

Companies that produce wood pellets claim that the biomass industry is harmless.

They claim to be extracting less wood than paper and packaging companies. While that may be true, massive growth in the biomass industry (pegged to expand from $91.3 billion in revenue in 2023 to $105.7 billion by 2028).

Bioenergy is a huge global industry. According to the International Renewable Energy Agency (IRENA), "About three-quarters of the world's renewable energy use involves bioenergy." Moreover, it "accounted for about 10 percent of total final energy consumption and 1.9 percent of global power generation in 2015." The U.S. was the world's largest producer and exporter of wood pellets in 2021. In 2022, the U.S. exported nearly 9 million tons of wood fuel pellets, mainly to Europe, the UK, and Asia.

Supporters argue that bioenergy is a climate-friendly, sustainable power source that helps local economies. The truth is that wood pellet plants are as dirty and problematic as coal plants. Wood pellets are often burned alongside coal, which only helps prolong the use of coal. The United Nations even cautioned against its extensive use, stating, "[B]ioenergy should only be used in limited applications, given potential negative environmental impacts related to large-scale increases in forest and bioenergy plantations, and resulting deforestation and land-use change."

Burning wood pellets (burning trees) for heat and electricity harms people, biodiversity, and ecosystems. Compared to low-carbon technologies like solar and wind energy, bioenergy is more expensive and harmful to the environment. It requires a constant source of forest biomass—including felled trees—to operate, and the number of trees on the planet is not unlimited. It isn't a solution that can replace fossil fuels or any other high-carbon energy production method; Biomass is not a climate solution.

In fact, a study published in Environmental Research Letters in 2018 pointed out, "[C]arbon dioxide emissions from burning wood are actually higher than burning coal because wood contains more water—even when dried and compressed into a pellet—and is a less efficient source of energy," according to a Wired article.

Subsidizing Wood Pellets

In the U.S., the Department of Agriculture (USDA) and state and local governments subsidize bioenergy companies. While the USDA does so in the name of "research," the other government entities tend to offer subsidies in the

name of questionable economic benefits.

State and local governments are throwing money at these dirty industries. Most state and local money for bioenergy facilities comes via "economic development" programs. These programs may or may not require reporting on the number of jobs created. Indirect subsidies may come in the form of one of the following:

– tax abatement

– tax credits

– reduced leases of land

– building infrastructure (e.g., roads and water tanks)

– grants

– low- or no-interest bonds and loans

According to Dogwood Alliance, states and the federal government have collectively provided more than $75 million to subsidize wood pellet production as of 2023, and according to a 2022 article by CoastalReview.org, Enviva, the world's largest wood pellets producer, received nearly $10 million in state subsidies alone.

Even though millions of dollars may seem like a large sum, U.S. investment in bioenergy is a drop in the bucket compared to the foreign investment it receives. Foreign funding for bioenergy is nearly 700 times greater than domestic spending. Although not all that money ends up in the hands of U.S. companies, a significant portion does.

According to the UK and the EU renewable energy guidelines, woody biomass is officially classified as renewable and carbon neutral, despite pressure from environmental activists to make revisions to this policy in 2023. Utilities have been encouraged to convert coal-fired generators to generators using woody biomass, allowing them to burn wood pellets to help them officially meet the EU air pollution and renewable energy standards.

Also, due to a policy loophole, carbon dioxide emissions for wood pellets are counted during the trees' harvest but not when they are burned. Therefore, if the

trees are harvested abroad, they are "free" in terms of carbon accounting. "Countries are not required to count the carbon emissions emitted by wood-fired power plants. That allows woody biofuels to flourish as a climate solution nevertheless," points out a National Geographic article.

For this reason, European and UK power companies chose the southeastern United States, where logging is much less restricted than in Europe, as one of the primary suppliers of wood pellets. Countries across Europe and Asia import wood pellets from North America because it is a cheap and easy way to meet their climate goals (on paper). Often, governments subsidize these purchases to the tune of billions of dollars.

A 2022 report prepared by Trinomics—an economic policy consultancy—for the nonprofit environmental group Natural Resources Defense Council (NRDC) found that 10 key European countries—Austria, Denmark, Finland, France, Germany, Netherlands, Poland, Spain, Sweden, and the United Kingdom—spent more than $6.8 billion in subsidies supporting bioenergy in 2021—more than in any previous year, amounting to a nearly 33 percent increase from 2015.

"[M]any governments are doubling down on bioenergy and making it central to their plans to tackle climate change, despite its many risks to people and the planet," wrote Debbie Hammel, deputy director of the lands division of NRDC's nature program, and Elly Pepper, deputy director of global biodiversity conservation of NRDC's Nature Program, in 2022.

This hasn't happened without opposition. Climate activists and forest advocates have been lobbying the public, the U.S. government, and the European Parliament on the issue long enough that it finally became a matter of public debate. In September 2022, the European Parliament voted on amendments to its Renewable Energy Directive (RED) to decide whether or not to reject the definition of woody biomass as renewable and carbon neutral. Although the parliament decided to keep the renewable classification, activists were heartened that it was finally being discussed in parliament.

Another favorable decision by European lawmakers was to end some of the "wood-energy subsidies," indicating a recognition among them that the incentives offered by the EU "has contributed to deforestation without curbing greenhouse gas emissions."

Forests Are More Than Fuel

Harvesting truckloads of whole trees threatens forests, one of our most important environmental protection systems. Trees provide humans and nonhuman animals with oxygen, clean water, shelter, medicine, protection, and food. In short, they are a vital part of a healthy planet and are necessary for the survival of animal species, including ours.

However, the indiscriminate cutting of trees to supply pellets for energy is "ravaging biodiverse forests and damaging humanity's chances to avert the worst climate catastrophes," according to a letter written by more than 500 scientists and economists to President Joe Biden.

Pointing to the extent of damage these facilities are capable of, NDRC states, "[m]eeting the production capacity of four of Enviva's wood-pellet facilities in North Carolina and Virginia requires logging almost 50,000 acres of forest per year."

Clean Water

Trees are critical to sustaining the quality of natural water supplies because they collect, filter, and release rainwater into bodies of water such as lakes, rivers, and streams. Clear-cutting can cause nitrogen pollutants to leach into water runoff, while salvage logging (logging after a fire) hurts the regulation of ecosystem services like water and soil quality.

"Forest cover has been directly linked to drinking-water treatment costs, so the more forest in a source water watershed, the lower the cost to treat that water," writes Austa Somvichian-Clausen of American Forests, a nonprofit conservation organization based in Washington, D.C. "Forests provide these benefits by filtering sediments and other pollutants from the water in the soil before it reaches a water source."

While biomass is touted as a clean source of energy, an analysis of its water footprint shows that a shift away from fossil energy and toward energy from biomass will put more pressure on freshwater resources.

Climate Impacts of Wood Pellets

Forests mitigate the effects of extreme weather. In cases of flooding after a hurricane or storm, they act as a sponge, soaking up excess rainwater. This has the benefit of reducing runoff and damage caused by flooding. In areas with clear-

cuts, flooding spreads more quickly and is more dangerous.

Forests also retain water in leaves, branches, twigs, roots, and soil. A large tree can retain 332 gallons of water. The larger the forest, the greater the amount of stored water.

For this reason, forests may play a significant role in alleviating drought and desertification caused by climate change.

They also play an essential role in keeping regional temperatures steady and safe. By absorbing carbon dioxide and releasing oxygen, forests help balance the Earth's atmosphere and protect ecosystems, wildlife, and local communities.

They function as important carbon sinks that help mitigate climate change. While biomass energy is promoted as a carbon-neutral energy source, which is a major driver of the international demand for wood pellets, scientific evidence says that wood pellets are not carbon-neutral. They were responsible for 88 million tons of carbon dioxide being emitted due to the production and combustion of biomass in the U.S. at the end of 2020.

Far from preventing global warming, biomass destroys our forests and leads to irreversible environmental impact. For each ton of wood pellets produced, 24,000 acres of forest are destroyed.

Apart from this, every single stage of pellet production involves carbon emissions. The amount of energy used to produce wood pellets varies but can range from 5 to 20 percent of the total carbon emissions generated by the entire lifecycle.

To begin with, logging releases carbon from the soil and leads to reduced carbon sequestration.

Moreover, logging machinery and transport vehicles run on diesel and gasoline. Producing the pellets (pulverizing, drying, milling, compressing, cooling, and packaging them) requires fuel, usually natural gas; shipping the pellets across the Atlantic consumes a lot of diesel. Wood storage can lead to methane emissions. Finally, burning wood pellets releases as much or even more carbon dioxide into the atmosphere as an equivalent unit of coal. "[P]ower plants that burn biomass emit 150 percent more carbon dioxide than those burning coal," according to the Partnership for Policy Integrity.

Moreover, rather than offering a genuine energy alternative, the biomass industry effectively helps companies burn more coal. Many wood pellets are "co-fired" alongside coal in traditional power plants. Power plants can burn wood pellets alongside coal to get renewable energy credits. In other words, they can get credit for "green" energy while still burning coal.

When power plants are allowed to "offset" greenhouse gas emissions by co-firing dirty coal with wood pellets, they're putting more and more carbon into the atmosphere. Despite claims by the biomass industry, bioenergy is far from being "carbon neutral."

Wood pellet production facilities simply release too much carbon dioxide into the atmosphere to help the fight against climate change. They also degrade and destroy natural forests to get their forest biomass material. Collectively, wood pellet production means more air pollution and carbon emissions and fewer natural and healthy forests.

Clear-cutting, Deforestation, and Degradation
Deforestation is a devastating side effect of the growing woody mass bioenergy industry. In sourcing wood, the industry conveniently ignores climate change and destroys forest ecosystems. From 2011 to 2023, more than 1 million acres in the U.S. have already been cut for wood pellets.

The most common type of logging in the U.S., especially in the U.S. South, is clear-cutting, when loggers remove all the wood from an area of forest, leaving bare ground. New trees are either planted or allowed to regrow naturally. Companies clear-cut forests because it's easier for them to move equipment in a cleared area. It's also more cost-effective for the forestry company; a clear-cut ensures that a company gets the greatest amount of wood from a single area. The downside is that the ecological effects of clear-cuts are worse than other types of logging.

According to a 2019 NRDC and Dogwood Alliance report, "Global Markets for Biomass Energy are Devastating U.S. Forests," clear-cutting in the North Atlantic Coastal Plain Biodiversity Hotspot for wood pellet production, "harms many unique plant and animal species, including at least 30 species of birds that are the focus of conservation efforts."

Moreover, logging is the number one cause of carbon emissions from U.S. forests.

From 2006 to 2010, a whopping 85 percent of carbon emissions from forests were attributed to logging, which is five times more than carbon lost through fires, insects, disease, drought, or development combined. In 2018, more than half of forest tree-cover loss was due to logging in North America. The number creeps higher when you focus on the U.S. South.

Scientists agree that our forests need to absorb more carbon, and quickly, if we're to avoid the worst impacts of climate change. Logging can cause a carbon deficit for up to 200 years as the trees regrow; around 60 of the carbon lost through deforestation and harvesting from 1700 to 1935 has not yet been recovered in our forests. Converting old-growth forests to young plantations in Western Oregon and Washington has released 1.5 to 1.8 million metric tons of carbon into the atmosphere.

Waste Product or Waste Wood

The biomass industry often claims it only uses "waste" wood as a feedstock. The implication is that it exclusively uses leftover woodchips, shavings, bark, and off-cuts from industrial lumber activity or scrap wood such as used furniture. In reality, many wood pellet facilities regularly harvest whole trees.

The industry interprets "waste" in a much broader and more self-serving sense than environmental legislation intended: waste wood or "low-value wood" is any tree that isn't perfectly shaped or is the wrong kind of tree for lumber.

In nature, nothing is wasted. A tree has great value if it's left alone in a forest. Even if imperfect, a living tree filters water, cleans the air, and provides a habitat for wildlife. A dead tree provides habitat, cycles nutrients, aids plant regeneration, and prevents erosion.

Types of Forest Logged

The biomass industry is not picky when it comes to sourcing trees. In North Carolina, in 2019, bioenergy companies took wood from 27 different types of forests. Forty-one percent of the wood that bioenergy facilities received were loblolly and shortleaf pine forests, which could have been natural or planted.

Anywhere from 15 to 30 percent of forested area around biomass industry facilities comprises planted pine trees—not natural forests. These "pseudo-forests" offer far less ecological value than natural forests. They need toxic herbicides and pesticides to grow successfully, take a long time to grow, and do

not offer the same benefits as natural forests, which tend to store more carbon per acre. Planted trees may not lead to carbon benefits even after several decades.

The next-largest category of wood used by the pellet industry includes tree species that grow in moist soil, often near rivers and streams. These trees, including sweetgum, black gum, sycamore, and poplar, make up roughly 28 percent of the feedstock used by the wood pellet industry in North Carolina.

Because old-growth forests are critical to the ecosystems they support, they must be allowed to remain standing. However, because there is no single standard definition of old-growth forests, it's hard to determine whether or not the biomass industry is cutting them down. If we define an old-growth forest as more than 80 years old, the biomass industry will likely be getting wood from those forests. In 2019, for instance, approximately 2 percent of forest harvests in North Carolina were from stands older than 80 years.

The answer is less clear if we define old growth as containing certain ecological characteristics such as downed wood and biodiversity. We simply don't have an easy way to measure those characteristics on a large scale. Companies would need to carry out audits of old-growth characteristics in every forest that they have logged. At the moment, there is no requirement for them to do so. Alarmingly, in 2022, an Enviva whistleblower told Mongabay, "We take giant, whole trees. We don't care where they come from. The notion of sustainably managed forests is nonsense. We can't get wood into the mills fast enough."

Bioenergy and Human Health

Wood pellet facilities are a massive pollution source that harms human health. They emit thousands of tons of particular matter, carbon monoxide, nitrogen oxides, and volatile organic compounds (VOCs) each year. These air pollutants can cause or worsen a range of health conditions, from asthma and heart disease to cancer. That's a pretty steep price tag for what is supposed to be renewable energy.

For example, in Hamlet, North Carolina, where an Enviva plant opened in 2019, thick dust has been filling the air and settling on homes, causing an increase in respiratory problems, particularly in older people.

The co-authors of a peer-reviewed paper wrote an article in the Hill about their

research in March 2022 and stated that the burning of wood and biomass in buildings and for industry use in the U.S. led to at least 18,000 deaths, which was higher than the deaths caused by coal-fired power plants.

While referring to their findings of 2017, they wrote that "air pollution from burning firewood in homes was responsible for 9,800 to 16,000 deaths, burning biomass in industrial boilers had a health burden of 8,000 to 15,000 deaths, and using it in commercial buildings had a health burden of 640 to 1,200 deaths. This is comparable to the 9,100 to 11,000 deaths due to the coal-fired power plants that were operating in 2017."

Bioenergy and Environmental Justice
As the wood pellet industry grows, so do concerns about its adverse impacts on people. One pressing concern relates to environmental justice—the concept that all communities deserve equal access to a healthy environment.

Environmental racism is when specific communities, particularly BIPOC (Black, Indigenous, or People of Color) neighborhoods, are subjected to more environmental harm than their white neighbors. Communities experiencing environmental racism might be subjected to:

Higher levels of air pollution, including fine particulate matter (microscopic dust) and volatile organic compounds

– Changes in local water quality

– Increased greenhouse gas emissions from nearby plants

– Devastating clear-cuts and intense industrial logging

– Increased impacts of climate change

– Decreased property values because of nearby industrial activity

Extractive, polluting industries like the wood pellet industry have been imposed on rural BIPOC communities for decades. These communities have struggled with poverty and unemployment for several generations while industry executives living outside the community prosper.

Both property values and livability may decline in areas near these wood pellet

factories.

“As of 2018, every single wood pellet mill in North and South Carolina was in a low-income community of color. Across the South, these same neighborhoods were more than 50 percent more likely than affluent ones to become home to a wood pellet plant,” states an article by the nonprofit Southern Environmental Law Center.

The growth of the biomass industry has meant that some communities bear a higher cost of clear-cutting, including the negative impacts of soil erosion, loss of wildlife, water pollution, and degraded air quality.

The U.S. Southeast wood pellet industry is twice as likely to put their dirty plants in Black or minority neighborhoods than in white ones. The industry treats these communities as dumping grounds and exposes residents to noise, dust, odors, and air pollution. This is an environmental injustice.

In the U.S. South, wood pellet mills are often placed in low-income communities of color, which are more likely to experience environmental injustice. These “environmental justice communities” often already have other sources of pollution in or near them, such as:

– Natural gas pipelines or compressor facilities

– Industrial train stations for transporting goods, not people

– CAFOs—concentrated animal feeding operations

– Other large manufacturing facilities

– Coal ash or coal power plants

Many communities hope that the biomass industry will provide social benefits to rural areas. They believe it will help the local economy and lower poverty. As a result, governments at all levels provide millions of taxpayer dollars in incentives to attract new bioenergy businesses. These include things like tax breaks, use of land, and support with water and road systems. Even international governments give subsidies to these biomass plants.

Unfortunately, wood pellet production does not bring the economic boon it claims

it will. It's often propped up through polluting vulnerable local communities. There are no environmental benefits to woody biomass production. Far from being a cost-effective strategy to combat climate change, it doesn't combat climate change at all.

What's more, there's no scientific evidence to support the idea that bioenergy production results in strong economic growth. Models, in fact, show trade-offs between:

– bioenergy production

– local economy

– community health

– ecosystem health

An example of this false economic hope is evinced in an April 2021 report by the research institute Canadian Center for Policy Alternatives, which shows that the wood pellet industry in British Columbia has generated only "a little more than 300 jobs—half of 1 percent of B.C.'s forest industry workforce—employed in 14 mills."

The Wood Pellet Industry in the U.S. South

One of the areas most affected by the wood pellet boom is the American South, specifically the poorest rural counties. Wood pellet production capacity there has increased more than fivefold since 2009, growing at a compound annual rate of 14 percent, according to a 2022 report.

The amount of logging in this region is staggering. A study based on satellite images of forest cover worldwide between 2000 and 2012 showed that industrial logging in the southeastern U.S. led to a "disturbance" (forest loss) rate four times as high as that of South American rainforests in the same period.

Wood pellet facilities have almost always been built in areas with poverty rates higher than the state average and home ownership is well below the state average. Polluting industries often exist in the double digits in these areas—82 major polluters in North Carolina, for example, and 27 in Alabama. (You can find the full table of referenced statistics here.)

Perhaps it is not surprising that these vulnerable communities are being subjected to pollution and exploitation. In 2022, "[a]n investigation by Unearthed, Greenpeace's investigative unit, found that Drax Biomass paid millions of dollars to U.S. regulators over claims it exceeded limits on chemicals emissions at wood chip plants close to [Black] and low-income communities," states the Guardian.

Drax faced charges that it exceeded limits on emissions of volatile organic compounds, a class of air pollutants linked to cancer, breathing difficulties, and other adverse health effects. Drax has been a repeat offender in breaking environmental safety regulations. Pollution is unsurprisingly still an ongoing issue, with complicity from Mississippi's environmental regulation agency making it worse, according to a 2023 report by Dogwood Alliance.

Compounding issues, the U.S. South already bears the brunt of the most extreme weather conditions in the country. "We drew the short straw (in the South) that we literally can experience every single type of extreme weather event," University of Georgia meteorology professor Marshall Shepherd says. "Including blizzards. Including wildfires, tornadoes, floods, and hurricanes. Every single type. … There's no other place in the United States that can say that."

The fact that the residents are poor and unable to afford storm-hardy housing and infrastructure will exacerbate future disasters, as will any further loss of forested land in the American South.

By Sam Davis

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Europe Sleepwalks Through Its Own Dilemmas

Vijay Prashad

03-27-2024 ~ On March 19, 2024, the head of France's ground forces, General Pierre Schill, published an article in the newspaper, Le Monde, with a blunt title: "The Army Stands Ready." Schill cut his teeth in France's overseas adventures in the Central African Republic, Chad, Côte d'Ivoire, and Somalia. In this article, General Schill wrote that his troops are "ready" for any confrontation and that he could mobilize 60,000 of France's 121,000 soldiers within a month for any conflict. He quoted the old Latin phrase—"if you want peace, prepare for war"—and then wrote, "The sources of crisis are multiplying and carry with them risks of spiraling or extending." General Schill did not mention the name of any country, but it was clear that his reference was to Ukraine since his article came out just over two weeks after French President Emmanuel Macron said on February 27 that NATO troops might have to enter Ukraine.

A few hours after Macron made his indelicate statement, the U.S. president's national security advisor John Kirby said, "There will be no U.S. troops on the ground in a combat role there in Ukraine." This was direct and clear. The view from the United States is bleak, with support for Ukraine diminishing very fast. Since 2022, the U.S. has provided over $75 billion in aid to Ukraine ($47 billion in military aid), far and away the most important assistance to the country during its

war against Russia. However, in recent months, U.S. funding—particularly military assistance—has been held up in the U.S. Congress by right-wing Republicans who are opposed to more money being given to Ukraine (this is less a statement about geopolitics and more an assertion of a new U.S. attitude that others, such as the Europeans, should shoulder the burden of these conflicts). While the U.S. Senate passed a $60 billion appropriation for Ukraine, the U.S. House of Representatives only allowed $300 million to be voted through. In Kyiv, U.S. national security advisor Jake Sullivan implored the Ukrainian government to "believe in the United States." "We have provided enormous support, and we will continue to do so every day and every way we know how," he said. But this support will not necessarily be at the level it was during the first year of the war.

Europe's Freeze

On 1 February, the leaders of the European Union agreed to provide Ukraine with €50 billion in "grants and highly concessional loans." This money is to allow the Ukrainian government to "pay salaries, pensions, and provide basic public services." It will not be directly for military support, which has begun to flounder across the board, and which has provoked new kinds of discussions in the world of European politics. In Germany, for instance, the leader of the Social Democratic Party (SDP) in the parliament—Rolf Mützenich—was taken to task by the parties of the right for his use of the word "freeze" when it comes to military support for Ukraine. Ukraine's government was eager to procure Taurus long-range cruise missiles from Germany, but the German government hesitated to do so. This hesitation and Mützenich's use of the word "freeze" created a political crisis within Germany.

Indeed, this German debate around further arms sales to Ukraine is mirrored in almost all the European countries that have been supplying weapons for the war against Russia. Thus far, polling data across the continent shows large majorities against the continuation of the war, and therefore against the continuation of arming Ukraine for that war. A poll conducted for the European Council on Foreign Relations conducted in February shows that "an average of just 10 [percent] of Europeans across 12 countries believe that Ukraine will win." "The prevailing view in some countries," the poll analysts wrote, "is that Europe should mirror a U.S. that limits its support for Ukraine by doing the same, and encourage Kyiv to do a peace deal with Moscow." That view is beginning to enter the discussions even of the political forces that continue to want to arm Ukraine. SPD

parliamentarian Lars Klingbeil and his leader Mützenich both say that negotiations will need to start, although Klingbeil said it would not happen before the U.S. elections in November, and until then, as Mützenich had said, "I think that the most important thing now is that [Ukraine] get artillery ammunition."

Military Not Climate

It no longer matters whether Donald Trump or Joe Biden wins the U.S. presidential election in November. Either way, Trump's views on European military spending have already prevailed in the United States. The Republicans are calling for U.S. funding for Ukraine to be slowed down and for the Europeans to fill the gap by increasing their own military spending. This latter point will be difficult since many European states have debt ceilings; if they are to increase military spending this would be at the expense of precious social programs. NATO's own polling data shows a lack of interest from the European population in a shift from social to military spending.

Even more of a problem for Europe is that its countries have been cutting back on climate-related investments and increasing defense-related investments. The European Investment Bank (set up in 2019) is, as the Financial Times reported, "under pressure to fund more projects in the arms industry," while the European Sovereignty Fund—set up in 2022 to promote industrialization in Europe—is going to pivot toward support for military industries. Military spending, in other words, will overwhelm the commitments to climate investments and investments to rebuild Europe's industrial base. In 2023, two-thirds of the total NATO budget of €1.2 trillion was from the United States, which is double what the European Union, the UK, and Norway spent on their militaries. Trump's pressure for European countries to spend up to 2 percent of their GDP on their armies will set the agenda even if he loses the presidential election.

Can Destroy Countries, but Can't Win Wars

For all the European braggadocio about defeating Russia, sober assessments of the European armies show that European states simply do not have the ground military capacity to fight an aggressive war against Russia let alone defend themselves adequately. A Wall Street Journal investigation into the European military situation bore the stunning title, "Alarm Grows Over Weakened Militaries and Empty Arsenals in Europe." The British military, the journalists pointed out, has only 150 tanks and "perhaps a dozen serviceable long-range artillery pieces," while France has "fewer than 90 heavy artillery prices" and Germany's army "has

enough ammunition for two days of battle." If they are attacked, they have few air defense systems.

Europe has relied upon the United States to do the heavy bombing and fighting since the 1950s, including in the recent wars in Afghanistan and Iraq. Due to terrifying U.S. firepower, these Global North countries are able to flatten countries, but they have not been able to win any wars. It is this attitude that produces wariness in countries such as China and Russia, who know that despite the impossibility of a Global North military victory against them there is no reason why these countries—led by the United States—will not risk Armageddon because they have the military muscle to do so.

That attitude from the United States—mirrored in the European capitals—produces one more example of the hubris and arrogance of the Global North: a refusal to even consider peace negotiations between Ukraine and Russia. For Marcon to say things like NATO might send troops into Ukraine is not only dangerous, but it strains the credibility of the Global North. NATO was defeated in Afghanistan. It is unlikely to make great gains against Russia.

By Vijay Prashad

Author Bio: This article was produced by Globetrotter.

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Source: Globetrotter

PVV Blog 6 ~ “Geert Wilders Is A Fascist”

It was this title (“Geert Wilders is a fascist”) that Liberal Arts and Sciences student Henk Bovekerk proposed at the time for his Bachelor thesis, which addressed the question of whether Geert Wilders’ PVV, during the academic year 2011-2012, should be characterized as fascist.

In the parliamentary elections of June 2010, the PVV had achieved a resounding victory with 24 seats, and the PVV had become the tolerated partner of a VVD-CDA cabinet that ruled from October 2010 to April 2012.

At that time, the PVV had attracted more attention from other politicians, the press, and academia than ever before, and one of the prevailing questions was whether the party was fascist, based on its party program, the writings of party leader Geert Wilders, and PVV member from the early days and now Speaker of the Parliament Marin Bosma, about whom I previously wrote in this series.

A ten for the thesis
I was the daily supervisor of student Bovekerk, and the late Professor Jan Blommaert was the second reader of the thesis.

Jan Blommaert and I were both very impressed by the thesis, its structure, the style of reasoning, and the English, and we decided to award the thesis the highest grade: a 10.

However, I did express to student Bovekerk that I found the proposed title mentioned above, “Geert Wilders is a fascist,” to be too much of a personal attack, so the student came up with the title “Prototypical Fascism in Contemporary Dutch Politics,” although Bovekerk did maintain in the text his conclusion that Wilders was a fascist.

The thesis was archived in the university archive, and we went about our daily business. But that was short-lived. The thesis was mentioned on the intranet of our faculty, with mention of the highest grade, and as far as I have been able to

reconstruct, it was one of our own students who brought the thesis and the high grade into the public eye.

Media Bombardment
On what was otherwise a peaceful Friday afternoon in January 2012, I was bombarded with calls from all over the Dutch media with the news that 'student Bovekerk considered Geert Wilders' PVV and Geert Wilders himself to be fascist' in his BA thesis. The press cried out: 'De Ruiter gives student who claims PVV is fascist a 10'. The frenzy that ensued lasted for a long time and was very threatening.

Robert Paxton
Bovekerk had conducted an analysis of PVV ideology based on the work of Robert Paxton in "The Anatomy of Fascism" (2004). Paxton considers fascist movements in five 'life phases', and because space is limited in this blog to delve into all his considerations, I present the conclusion of the student: Geert Wilders' PVV fit into Paxton's timeline of life phases and was unequivocally in phase 1. Or, in Bovekerk's words (p. 51):

'I have … attempted to demonstrate that Wilders and the PVV are the prototype of contemporary fascism. Driven by nationalism and racism, the PVV divides the world along Manichean lines and claims that the Netherlands and the West are seriously threatened by Islam. It promises to solve this crisis through a policy of exclusion, such as banning the Quran and codifying Dutch dominance and the subservience of Islam in the Dutch constitution. The PVV views the left as its enemy and constantly seeks to discredit it. … The PVV is a party of visceral emotions, devoid of philosophical underpinnings, intellectual debate, and avoiding critical media, aiming to appeal to the emotions of voters rather than reason. This is what fascist movements did in phase one, according to Paxton. And that is what the PVV does. Thus, the PVV is in phase one a fascist movement, and as such, it can rightly be called the prototype of contemporary fascism.'

Phases 2 and 3 are characterized by 'rooting in the political system' and 'gaining political power', and because the PVV was a tolerated partner at the time, Bovekerk concluded that the PVV had also penetrated these two phases.

Viewed from the Paxton perspective, one could now conclude that the PVV has shifted even further into Paxton's phases today because the party is now the

largest in the country, holds the position of Speaker of the House, and the party is seriously engaged in forming a government.

But is the PVV definitively fascist?

Are Comparisons with Fascism Meaningful?
At the time, I always argued that comparisons between – in this case – the PVV and past fascism were not meaningful. My argument was that such comparisons are unnecessary because a glance at the PVV's party program already made it clear that it was and is filled with disdain for the elite, advocating for the own people, xenophobia, racism, and discrimination. Moreover, comparisons with old Italian and German fascism always evoke a lot of emotions, and before you know it, you're engaged in the moral question of whether you can and should make such comparisons instead of asking how we can characterize the party without those comparisons. And for me, it was and still is evident: the party unequivocally advocates undemocratic positions and is a potential danger to democracy. That's what I thought then and still think now. We don't need World War II to draw those conclusions. By the way, I fully supported Bovekerk's academic endeavor. Guiding a student in a thesis doesn't automatically mean that the supervisor subscribes to the student's conclusions. The guidance is about assessing the student's academic skills.

Later, I did reconsider my position. Completely ignoring World War II does not do justice to the lessons we can draw from that war. But my final conclusion remains the same.

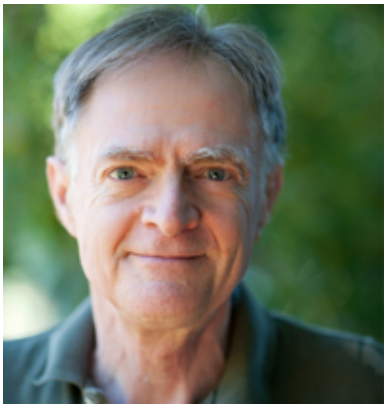
Regret about the 10?
I have often been asked if I regret giving the 10, and the answer until this day is that I do not regret it. A 10, I replied, stands for 'excellent' and not for 'perfect'. Perfect, I argued then and still do now, is only God (if He exists, then He cannot be anything other than perfect, otherwise He doesn't exist). Jan Blommaert and I had the highest appreciation for the work of the student, who, incidentally, was also bombarded by the media.

Twelve years have passed since. The question of whether the PVV is fascist has become less relevant. But the party is allied with the Italian Lega Nord, the French Rassemblement National, and the German Alternative für Deutschland in the European Parliament; especially the Lega Nord and the Alternative für

Deutschland are characterized as neo-fascist or neo-Nazi parties.

Fascist or not, I observe that now the party is more socially acceptable than ever, it is also more than ever a greater threat to democracy.

Why Artificial Intelligence Must Be Stopped Now



Richard Heinberg

03-21-204 ~ *The promise of AI is eclipsed by its perils, which include our own annihilation.*

Those advocating for artificial intelligence tout the huge benefits of using this technology. For instance, an article in CNN points out how AI is helping Princeton scientists solve "a key problem" with fusion energy. AI that can translate text to audio and audio to text is making information more accessible. Many digital tasks can be done faster using this technology.

However, any advantages that AI may promise are eclipsed by the cataclysmic dangers of this controversial new technology. Humanity has a narrow chance to stop a technological revolution whose unintended negative consequences will vastly outweigh any short-term benefits.

In the early 20th century, people (notably in the United States) could conceivably have stopped the proliferation of automobiles by focusing on improving public transit, thereby saving enormous amounts of energy, avoiding billions of tons of greenhouse gas emissions, and preventing the loss of more than 40,000 lives in car accidents each year in the U.S. alone. But we didn't do that.

In the mid-century, we might have been able to stave off the development of the atomic bomb and averted the apocalyptic dangers we now find ourselves in. We missed that opportunity, too. (New nukes are still being designed and built.)

In the late 20th century, regulations guided by the precautionary principle could have prevented the spread of toxic chemicals that now poison the entire planet. We failed in that instance as well.

Now we have one more chance.

With AI, humanity is outsourcing its executive control of nearly every key sector—finance, warfare, medicine, and agriculture—to algorithms with no moral capacity.

If you are wondering what could go wrong, the answer is plenty.

If it still exists, the window of opportunity for stopping AI will soon close. AI is being commercialized faster than other major technologies. Indeed, speed is its essence: It self-evolves through machine learning, with each iteration far outdistancing Moore's Law.

And because AI is being used to accelerate all things that have major impacts on the planet (manufacturing, transport, communication, and resource extraction), it is not only an uber-threat to the survival of humanity but also to all life on Earth.

AI Dangers Are Cascading

In June 2023, I wrote an article outlining some of AI's dangers. Now, that article is quaintly outdated. In just a brief period, AI has revealed more dangerous implications than many of us could have imagined.

In an article titled "DNAI—The Artificial Intelligence/Artificial Life Convergence," Jim Thomas reports on the prospects for "extreme genetic engineering" provided by AI. If artificial intelligence is good at generating text and images, it is also super-competent at reading and rearranging the letters of the genetic alphabet.

Already, AI tech giant Nvidia has developed what Thomas calls "a first-pass ChatGPT for virus and microbe design," and applications for its use are being found throughout life sciences, including medicine, agriculture, and the development of bioweapons.

How would biosafety precautions for new synthetic organisms work, considering that the entire design system creating them is inscrutable? How can we adequately defend ourselves against the dangers of thousands of new AI-generated proteins when we are already doing an abysmal job of assessing the dangers of new chemicals?

Research is advancing at warp speed, but oversight and regulation are moving at a snail's pace.

Threats to the financial system from AI are just beginning to be understood. In December 2023, the U.S. Financial Stability Oversight Council (FSOC), composed of leading regulators across the government, classified AI as an "emerging vulnerability."

Because AI acts as a "black box" that hides its internal operations, banks using it could find it harder "to assess the system's conceptual soundness." According to a CNN article, the FSOC regulators pointed out that AI "could produce and possibly mask biased or inaccurate results, [raising] worries about fair lending and other consumer protection issues." Could AI-driven stocks and bonds trading tank securities markets? We may not have to wait long to find out. Securities and Exchange Commission Chair Gary Gensler, in May 2023, spoke "about AI's potential to induce a [financial] crisis," according to a U.S. News article, calling it "a potential systemic risk."

Meanwhile, ChatGPT recently spent the better part of a day spewing bizarre nonsense in response to users' questions and often has "hallucinations," which is when the system "starts to make up stuff—stuff that is not [in line] with reality," said Jevin West, a professor at the University of Washington, according to a CNN article he was quoted in. What happens when AI starts hallucinating financial records and stock trades?

Lethal autonomous weapons are already being used on the battlefield. Add AI to these weapons, and whatever human accountability, moral judgment, and compassion still persist in warfare will tend to vanish. Killer robots are already

being tested in a spate of bloody new conflicts worldwide—in Ukraine and Russia, Israel and Palestine, as well as in Yemen and elsewhere.

It was obvious from the start that AI would worsen economic inequality. In January, the IMF forecasted that AI would affect nearly 40 percent of jobs globally (around 60 percent in wealthy countries). Wages will be impacted, and jobs will be eliminated. These are undoubtedly underestimates since the technology's capability is constantly increasing.

Overall, the result will be that people who are placed to benefit from the technology will get wealthier (some spectacularly so), while most others will fall even further behind. More specifically, immensely wealthy and powerful digital technology companies will grow their social and political clout far beyond already absurd levels.

It is sometimes claimed that AI will help solve climate change by speeding up the development of low-carbon technologies. But AI's energy usage could soon eclipse that of many smaller countries. And AI data centers also tend to gobble up land and water.

AI is even invading our love lives, as presaged in the 2013 movie "Her." While the internet has reshaped relationships via online dating, AI has the potential to replace human-to-human partnering with human-machine intimate relationships. Already, Replika is being marketed as the "AI companion who cares"—offering to engage users in deeply personal conversations, including sexting. Sex robots are being developed, ostensibly for elderly and disabled folks, though the first customers seem to be wealthy men.

Face-to-face human interactions are becoming rarer, and couples are reporting a lower frequency of sexual intimacy. With AI, these worrisome trends could grow exponentially. Soon, it'll just be you and your machines against the world.

As the U.S. presidential election nears, the potential release of a spate of deepfake audio and video recordings could have the nation's democracy hanging by a thread. Did the candidate really say that? It will take a while to find out. But will the fact-check itself be AI-generated? India is experimenting with AI-generated political content in the run-up to its national elections, which are scheduled to take place in 2024, and the results are weird, deceptive, and subversive.

A comprehensive look at the situation reveals that AI will likely accelerate all the negative trends currently threatening nature and humanity. But this indictment still fails to account for its ultimate ability to render humans, and perhaps all living things, obsolete.

AI's threats aren't a series of easily fixable bugs. They are inevitable expressions of the technology's inherent nature—its hidden inner workings and self-evolution of function. And these aren't trivial dangers; they are existential.

The fact that some AI developers, who are the people most familiar with the technology, are its most strident critics should tell us something. In fact, policymakers, AI experts, and journalists have issued a statement warning that "mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war."

Don't Pause It, Stop It

Many AI-critical opinion pieces in the mainstream media call for a pause in its development "at a safe level." Some critics call for regulation of the technology's "bad" applications—in weapons research, facial recognition, and disinformation. Indeed, European Union officials took a step in this direction in December 2023, reaching a provisional deal on the world's first comprehensive laws to regulate AI.

Whenever a new technology is introduced, the usual practice is to wait and see its positive and negative outcomes before implementing regulations. But if we wait until AI has developed further, we will no longer be in charge. We may find it impossible to regain control of the technology we have created.

The argument for a total AI ban arises from the technology's very nature—its technological evolution involves acceleration to speeds that defy human control or accountability. A total ban is the solution that AI pioneer Eliezer Yudkowsky advised in his pivotal op-ed in TIME:

"[T]he most likely result of building a superhumanly smart AI, under anything remotely like the current circumstances, is that literally everyone on Earth will die. Not as in 'maybe possibly some remote chance,' but as in 'that is the obvious thing that would happen.'"

Yudkowsky goes on to explain that we are currently unable to imbue AI with caring or morality, so we will get AI that "does not love you, nor does it hate you,

and you are made of atoms it can use for something else."

Underscoring and validating Yudkowsky's warning, a U.S. State Department-funded study published on March 11 declared that unregulated AI poses an "extinction-level threat" to humanity.

To stop further use and development of this technology would require a global treaty—an enormous hurdle to overcome. Shapers of the agreement would have to identify the key technological elements that make AI possible and ban research and development in those areas, anywhere and everywhere in the world.

There are only a few historical precedents when something like this has happened. A millennium ago, Chinese leaders shut down a nascent industrial revolution based on coal and coal-fueled technologies (hereditary aristocrats feared that upstart industrialists would eventually take over political power). During the Tokugawa Shogunate period (1603-1867) in Japan, most guns were banned, almost completely eliminating gun deaths. And in the 1980s, world leaders convened at the United Nations to ban most CFC chemicals to preserve the planet's atmospheric ozone layer.

The banning of AI would likely present a greater challenge than was faced in any of these three historical instances. But if it's going to happen, it has to happen now.

Suppose a movement to ban AI were to succeed. In that case, it might break our collective fever dream of neoliberal capitalism so that people and their governments finally recognize the need to set limits. This should already have happened with regard to the climate crisis, which demands that we strictly limit fossil fuel extraction and energy usage. If the AI threat, being so acute, compels us to set limits on ourselves, perhaps it could spark the institutional and intergovernmental courage needed to act on other existential threats.

By Richard Heinberg

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Source: Independent Media Institute

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The Double Edge Theater's Project To 'Rematriate Land'

April M. Short

03-19-2024 ~ *Meet a theater group that left the city to reimagine a local economy.*

The economic realities in the U.S. do not generally support working-class artists and culture bearers—an issue that has only been exacerbated by the COVID-19 pandemic. According to a March 2021 report titled "Solidarity Not Charity: Arts and Culture Grantmaking in the Solidarity Economy," 63 percent of creatives in the U.S. were "fully unemployed" as of December 2020 and one-third of museums said they would not open after the pandemic. The report was commissioned and released by Grantmakers in the Arts to encourage investors to fund arts and

culture more broadly.

Perhaps because there are seldom mainstream systems of support for artists in the U.S., they are often the ones responsible for envisioning equitable ways of living and being. It is artists who often create alternatives to the existing economic models, spearheading many of the mutual aid efforts that have helped communities survive challenging times (this became especially visible during the early years of the COVID-19 pandemic), coming up with housing solutions like community-owned land trusts and co-ops, and offering the means to relocalize supply chains. As the Solidarity Not Charity report details, artists are building what is often called the solidarity economy or local peace economy.

The Double Edge Theatre, a cultural cooperative and ensemble collective in Ashfield, Massachusetts, offers an example of how artists have successfully reimagined the economy and created networks of mutual support. The company was founded in Boston in 1982, but by the end of the 1980s, gentrification and rising costs in the city made it difficult for the group to enact its creative visions, according to Carlos Uriona, an actor and the theater's cultural strategist. This economic pressure became the catalyst for a unique model leading to a community-supported economy that has become a successful haven for the arts for decades.

As the theater's mission statement notes, their "… [v]ision is to prioritize imagination in times of creative, emotional, spiritual, and political uncertainty."

The theater has been repatriating 105 acres of farmland for the purpose of promoting culture—or as Uriona puts it, they have been "rematrating" the land, as the theater was initially founded and largely led by women.

"By the early 1990s, [the theater members] were looking for an alternative model," he says, noting that at the time he was not yet part of the theater, as he arrived in 1996 from Argentina after being offered residency. "They [Double Edge Theatre] wanted to create a model where they could rehearse and produce work, but at the same time invest in long-term research projects and deeper work," Uriona says. "They also wanted to be able to collaborate intensively with foreign countries, and a lot of those countries were on the other side of the iron curtain during those days—[like] Eastern Europe and Central Europe—they also wanted to work with people in South America. In Boston, at the time, the idea of bringing

people like me on board for a residency, and housing them, was nearly impossible."

The group searched for an alternative space outside the city, and in 1994 they found the farm where they currently reside: 105 acres of land in rural Massachusetts. The farm is classified as Agricultural Preservation Restriction (APR) land and the company purchased it as a collective, with the understanding that they could not develop the land into condos or use it for other purposes. Instead, they would have to farm, live, and work in the farmhouse and farm buildings.

While most of the members of the theater were relatively urbanized, they decided to take a leap of faith and learn how to farm—with the intention of building a community where actors could dedicate themselves to the theater full time and stay with projects for a long term without outside strains. Rather than having to take a second job to fund housing and living expenses, at the farm, one "day job" for the members of the theater became farming, where they produced their own food, and eventually, took up other necessary projects like carpentry. They also worked on administrative duties at the theater, including marketing and writing grants.

For a few years, the group juggled both locations: Boston and Ashfield, but in 1997 they made the choice to commit fully to the farm, which Uriona says felt like a significant risk at the time.

"We decided to move the group completely [to Ashfield] knowing it was a risk," he says. "Everybody was telling us, 'You're probably not going to be able to make a theater work out there and you're not going to be able to fund it; you're sinking money into something that is not going to work."

When the theater bought the farm, small farms were already under significant strain in the post-Nixon era, which saw an increasingly industrialized Big Ag takeover, and the economic realities of small-scale farming were bleak. It was clear that the farm would not produce enough to fund the members of the group.

Meanwhile, the surrounding town, made up of many small farmers, was undergoing a reconversion as conventional small-scale farming was becoming unsustainable. The neighboring farms also started moving into boutique farming models, which were oriented toward specialized organic produce. Some became

bed-and-breakfasts (many of which are now Airbnbs, and some are alternative teaching organizations).

“[Surrounding farms] stopped farming in the way they had been doing and a new system started,” he said. “At the same time, people were starting to get jobs on the internet.”

With all of these factors at play, the group knew it needed to develop its own economic model. They knew they wanted to create something that was not just based on producing theater and delivering theater.

“We didn’t want to subject our creation and our research to the entertainment industry; we wanted to remain an art group,” Uriona says. “One of my strong suits is outreach and developing a cultivation of people—not just the cultivation of plants and animals, and stuff like that. So, that allowed me to reach out to a lot of farmers here [Ashfield] and gain their trust and their cooperation.”

Little by little, the group developed a strong connection with the surrounding town and became intricately connected with the developing businesses as farms restructured.

The group also started to bring students in from all over the world for residencies and it was not too long before a mini tourism industry started to flourish around the theater.

“At the same time, our performances became more and more developed and were really well received,” he says. “We got a lot of national and international attention, to the point that today we [are sometimes] sold out before we’ve opened the box office, because of the number of people who are supportive of and involved in the theater, which I would say by now is around 10,000.”

Uriona says that their alumni group comprises about 900 people to date, and it includes people from Beijing, Australia, Indonesia, Europe, South America, India, and beyond.

Individual households and contributors support more than a quarter of the theater’s costs via membership program plus individual and grassroots contributions, the rest of their funding comes from grants, performances, and other programs. The farm was able to become a way of defraying food costs,

rather than something the theater relied on to survive. And the theater collaborates with surrounding farms and CSA (community-supported agriculture) programs, in a deeply communal way, Uriona says.

“When we moved to the farm, [it allowed] us to do what we were doing in the city, but with focus—when you’re in the city, it’s everyone on their own, and here, we needed to somehow collectivize our efforts,” he says.

“And this has made much more economic sense. Not financial sense, but economic sense, which then affected the finances in a really major way. For example, let’s say that I’m unemployed because the [theater] season finished. Here [on the farm], instead of trying to get a job as a bartender, I would go and do some carpentry, which would then serve to house a colleague. My effort is being doubly invested. Even if you look [at it] from a capitalist point of view, it makes sense because then you’re paying me for one job, but that job is reinvesting in the whole economy of the theater community.”

Uriona notes that over the years, because of their unique setup, the group has been able to “unlearn and learn skills together that were not taught to us in classical theater schools.”

Skills like how to organize their business model—from marketing to bookkeeping and working with accountants; to understanding the legal aspects of their work; to insurance; to the building and upkeep of their facilities.

Collective Land Ownership

Uriona says one of the challenges the theater faced was to purchase the property as a collective because banks typically don’t give loans to collectives. After searching, they found a local bank that was willing to work with them, and Uriona says the relationship with the bank has been phenomenal and has allowed the collective to own the land as a group.

The theater is actively engaged with the local Indigenous community. The Indigenous landback effort is a growing movement across the U.S. and around the world to give stewardship rights and access back to local Indigenous peoples, who have lived in communion with the land for thousands of years.

In 2021, the theater entered into a legal landshare agreement to co-steward and co-inhabit the 105 acres of land with their Indigenous partners—No Loose Braids

and the Ohketeau Cultural Center. No Loose Braids "is a Nipmuc-led organization "working to bring Eastern Woodland Tribal communities together in unity," as described on the organization's website. "No Loose Braids also works to build opportunities for future generations through changing structures of systemic marginalization and exclusion by advocating for Tribal rights and engaging in dialogue in colonial spaces," the website states.

The Nipmuc community created the Ohketeau Cultural Center in one of the barns on the communal land, which is a space for creativity and a safe haven for Indigenous community members. It is co-founded and co-directed by Larry Spotted Crow Mann, a nationally acclaimed author and a citizen of the Nipmuc Tribe of Massachusetts; and Rhonda Anderson, who is a mother, herbalist, activist, and silversmith, and whose heritage is Iñupiaq-Athabascan from Alaska.

Longevity

Because the theater is not dependent on box office turnout or constantly producing new shows, it is able to delve into research projects in a way that is more thorough than what other tether models allow for.

"Our performances are not conventional," Uriona says.

Some of their research spans decades and much of what they explore is markedly avant-garde. In addition to performances, the theater sometimes opens up its experimental research for showings.

"We continue to research on the land, and we continue to research different forms of theater in a way that has longevity," he says. "It's been 25 years… longevity in the relationship with research is crucial for us," he adds. "There is nobody else who is really producing that type of research in this country. Most [other theaters] hire you for four weeks of work that is rehearsal and then four more weeks of performing. We have sustained research for [more than] 12 years. For some pieces that we're doing, we started doing them in the '80s."

The theater works with circus-esque acrobatics, aerial training, and trapeze and does unconventional work with puppets. Another way the theater is experimental is that it creates shows that are interactive with the surrounding land. Nature, in a way, plays a role in Double Edge Theatre performances. For example, they've had Poseidon on a zip line, diving in and out of the water during a performance of the Odyssey.

“We do research on visual arts in combination with theater, so for instance, [Russian-French artist] Marc Chagall has been a constant presence. We started recently with the work of Leonora Carrington, the Mexican-British painter… We research Bruno Schulz, a Jewish-Polish writer—who died during the Holocaust—who did erotica and is somehow the first person who wrote something that is close to magical realism, which later came out of Latin America. We have a whole breadth of Latin American research that has been going on for about 12 years now.”

Uriona says the theater and arts are “indispensable to today’s world in crisis.”

“[The] theater teaches through imagination and story,” he says. “It is also a ceremony and an example of how to address conflicts in a collective way. We gather to see something… And that moment of togetherness encapsulates the kernel of what it means to come together to think about something that elates us, or concerns us, or affects us in whichever way. It is a healing moment to practice this ritual of theater in the community.”

By April M. Short

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Source: Independent Media Institute

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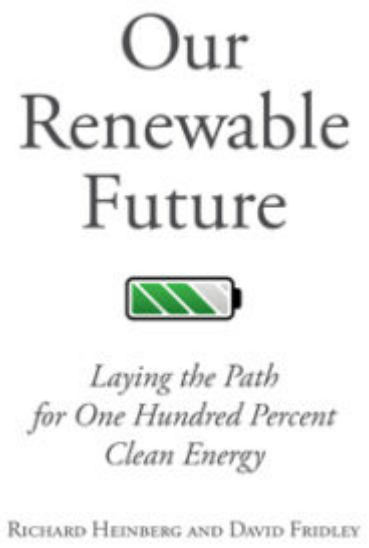
We Need A Plan For The Transition To Renewable Energy



03-18-2024 ~ Radical societal transformation is inevitable; a plan could make a difference between catastrophe and progress.

The transition to renewable energy is inevitable given the current climate crisis and the fact that fossil fuels are a finite resource. To make the shift, a detailed plan is required to indicate the first steps and anticipate challenges in allocating resources and the policies needed to achieve the outcome. Germany has arguably accomplished more toward the transition to renewable energy than any other nation, largely because it has such a plan—the "Energiewende," which seeks a 60 percent reduction in all fossil fuel use by 2050 and a 50 percent reduction in primary energy use through efficiency in power generation, especially for buildings and the transport sector.

What follows are some components of a basic plan that can be adapted according to each country or state and adjusted for contingencies.

Level One: The 'Easy' Stuff

The easiest way to kick-start the transition is to switch to solar and wind power for electricity generation by building lots of panels and turbines, respectively, while phasing out coal. Distributing generation and storage of these energy sources (rooftop solar panels with home- or office-scale battery packs) will help. Replacing natural gas will be harder because gas-fired "peaking" plants are often used to buffer the intermittency of industrial-scale wind and solar inputs to the

grid.

Electricity accounted for less than a quarter of all final energy used in the United States in 2022. Since solar, wind, hydro, and geothermal produce electricity, it makes sense to electrify even more of our energy usage—heating and cooling buildings with electric air-source heat pumps and cooking with electric induction stoves, for example.

Transportation represents a large swath of energy consumption, mostly due to the growing number of personal cars. As of 2021, there were 250 million gasoline-fueled automobiles. While we are busy replacing these with electric vehicles, we can easily and cheaply promote walking, bicycling, and public transit.

Substantial retrofitting is needed for energy efficiency. Building codes should be strengthened to mandate net-zero or near-net-zero energy performance for new construction. Zoning codes and development policies should encourage infill development, multifamily buildings, and clustered mixed-use development. Using more energy-efficient appliances will also help.

The food system is a significant energy consumer. Increasing the market share of organic local foods can dramatically lower the amount of fossil fuels used to manufacture fertilizers as well as in food processing, and in transportation. We can also sequester enormous amounts of atmospheric carbon in topsoil by promoting farming and land management practices that build soil rather than deplete it.

By our calculations, these actions could reduce carbon emissions by 40 percent in 10 to 20 years.

Level Two: The Harder Stuff

Solar and wind technologies provide energy intermittently. When they become dominant, we must adapt to this with substantial amounts of grid-level energy storage and a major grid overhaul to get the electricity sector to 80 percent renewables. We'll also need to time our energy usage to coincide with sunlight and wind energy availability.

The transport sector will require extensive and costly restructuring. Densified cities and suburbs can be reoriented to public transit, bicycling, and walking. All motorized human transport can be electric, with more public transit and intercity

passenger rail links. Heavy trucks could run on fuel cells, but it would be better to minimize trucking by expanding freight rail. Sails would increase the fuel efficiency of shipping, but relocalization or deglobalization of manufacturing would be a necessary co-strategy to reduce the need for shipping.

Although much of the manufacturing sector runs on electricity, many raw materials used during the manufacturing processes either *are* fossil fuels or require fossil fuels for mining or transformation. By replacing fossil fuel-based materials and by increasing the recycling of nonrenewable materials, we can reduce dependency on mining.

If we do all this and build far more solar panels and wind turbines, we could, by our calculations, achieve roughly an 80 percent reduction in emissions.

Level Three: The Really Hard Stuff
Eliminating the last 20 percent of our current fossil fuel consumption will take even more time, research, investment, and behavioral adaptation. One example is that we currently use enormous amounts of cement in construction with concrete. Cement-making needs high heat, which could theoretically be supplied by sunlight, electricity, or hydrogen—but only with a complete redesign of the process.

This is the time to make all food production organic and to ensure that agriculture builds topsoil. Eliminating all fossil fuels will entail redesigning food systems to minimize processing, packaging, and transport.

The communications sector—which uses mining and high-heat processes to produce phones, computers, servers, wires, photo-optic cables, cell towers, and more—presents a challenge. The only good long-term solution here is to make devices that last and then repair, fully recycle, and remanufacture them only when absolutely needed. The internet could be maintained via low-tech, asynchronous networks now being pioneered in poor nations, using relatively little power.

In the transport sector, scrapping petroleum will require costly substitutes (fuel cells or biofuels). Global trade will inevitably shrink. With no ready substitute for aviation fuels, we may have to relegate aviation to a specialty transport mode. Planes running on hydrogen or biofuels are an expensive possibility, as are dirigibles filled with (nonrenewable) helium.

On land, paving and repairing roads without oil-based asphalt is possible, though it will require a complete redesign of processes and equipment.

If we can do all this, we can get beyond zero carbon emissions; with carbon sequestration in soils and forests, we could reduce atmospheric carbon each year.

Scale Is the Biggest Challenge

It is possible to design a renewable energy system that 1) has minimal environmental impacts, 2) is reliable, and 3) is affordable—as long as relatively modest amounts of energy are needed. Once current U.S. scales of energy production and usage are assumed, something has to give.

We sacrifice the environment (due to the vast tracts of land needed for siting wind turbines and solar panels) for the purposes of reliability (because solar and wind are intermittent) and affordability (because of the need for storage or capacity redundancy).

Power is another hurdle: massive ships and airplanes require energy-dense fuels. Renewable energy resources can supply the needed power, but scale is crucial. While building and operating a few hydrogen-powered airplanes for specialized purposes would be technically feasible, operating fleets of thousands of commercial planes with hydrogen fuel is daunting from both a technical and economic perspective.

It's Not All About Solar and Wind

Solar and wind are the favored energy sources of the future; equipment prices are falling, the rate of installation continues to be high, and there is considerable potential for further growth. However, their inherent intermittency will pose increasing challenges as they become more dominant. Other renewable energy sources—hydropower, geothermal, and biomass—can more readily supply controllable baseload power, but these sources have much less opportunity for growth owing to limits on siting, geology, and supply.

Hopes for high levels of wind and solar energy supply are driven mainly by the assumption that industrial societies can and should maintain very high levels of energy use. The challenge is always scale: If energy usage in the United States could be scaled back significantly (70 to 90 percent), then a reliable all-renewable energy regime would become much easier to envision and cheaper to engineer.

We Must Adapt to Less Energy

Considering the speed and scale of emission reductions required to avert climate catastrophe, people in industrialized countries will have less energy than they are used to consuming.

Despite our understandable wish to maintain current levels of comfort and convenience, it's worth keeping an ecological footprint analysis in mind.

According to calculations by the Global Footprint Network, the productive land and water available to each person on Earth to live sustainably in 2019 was 1.6 global hectares. Meanwhile, the per capita ecological footprint of the United States was 8.1 global hectares per capita in 2018 (if the entire world population lived at this footprint, it would require five planet Earths).

Clearly, we should aim for a sustainable energy and material consumption level, which, on average, is significantly lower than at present. If we don't achieve this, we will eventually be caught short, with significant economic and political fallout.

What should we do to prepare for energy reduction? Look to California as a model: Since the 1970s, its economy has grown while its per capita electricity demand has not. The state has encouraged cooperation between research institutions, manufacturers, utilities, and regulators to determine how to keep demand from growing by changing how electricity is used.

Consumerism Is a Problem, Not a Solution

Conservation beats consumption in the dawning post-fossil fuel era. If it becomes more difficult and costly to produce and distribute goods, people will have to use them longer and repurpose, remanufacture, and recycle them wherever possible. The switch from consumerism to conservation will transform America's culture, economy, and government policy.

The renewable economy will likely be slower and more local. Economic growth may reverse itself as per capita consumption shrinks. If we are to avert a financial crash, we may need a different economic organizing principle. In her 2014 book on climate change, *This Changes Everything*, Naomi Klein asks whether capitalism can be preserved in the era of climate change. Although it probably can, in the absence of overall growth, profits for a few will have to come at a cost to everyone else, a situation we have seen in the years since the financial crash of 2008.

Population Growth Makes Everything Harder

Population is a climate and energy issue. If energy and materials are likely to dwindle in the decades ahead, population growth will mean even less consumption per capita. On a net basis (births minus deaths), we are gaining 83 million humans each year—according to a 2017 UN report—an unprecedented number, even if the percentage rate of growth is slowing.

Policymakers can help reduce the population by promoting family planning, public persuasion, raising the educational level of poor women, and giving women complete control over their reproductive rights. (For detailed recommendations, consult population organizations such as Population Institute and Population Media Center.)

Fossil Fuels Are Too Valuable to Allocate Solely Based on Market Forces

For non-energy purposes, industrial societies will need fossil fuels for some applications until the final stages of the energy transition—and possibly beyond. Crucially, we need fossil fuels for industrial processes and transportation to build and install renewable energy systems. We also need them for agriculture, manufacturing, and general transportation until robust renewable energy–based technologies are available. This poses several problems.

As the best of our remaining fossil fuels are depleted, we extract and burn ever lower grade and harder to get coal, oil, and natural gas. Virtually all new production prospects involve tight oil, tar sands, ultraheavy oil, deepwater oil, or Arctic oil—all of which entail high production costs and high environmental risk compared to conventional oil found and produced during the 20th century.

Refining heavier, dirtier fuels (in the case of tar sands) creates ever more co-pollutants, with disproportionate health impacts and burden on low-income communities. The fact that the fossil fuel industry will require ever-increasing levels of investment per unit of energy yielded has gloomy implications for the energy transition: the deteriorating fossil fuel sector will need a large chunk of society's available capital to maintain current services, just as the build-out of renewables will require even more capital.

The danger is that fossil fuels will become so costly we'll no longer be able to afford the transition project.

But we cannot accelerate the transition too much. Rushing the transition will

mean an overall increase in emissions—unless we reduce other current uses of fossil fuels. To fuel the transition without increasing overall greenhouse gas emissions, we may have to deprive some sectors of the economy of fossil fuels before adequate renewable substitutes are available. This would mean reducing overall energy consumption and the economic benefits of energy use while taking care to minimize the impact on already vulnerable and economically disadvantaged communities.

We are entering a period of fossil fuel triage. Rather than allocating fossil fuels simply on a market basis (those who pay for them get them), it would be fairer to find ways to allocate fuels based on the strategic importance of the societal sectors dependent on them and on the relative ease and timeliness of transitioning these sectors to renewable substitutes.

Agriculture, for example, might be deemed the highest priority for continued fossil fuel allocations, with commercial air travel assuming a far lower priority. Perhaps we need not have just one price on carbon but different prices for different uses. Not only do we see scant discussion of this prospect in energy policy literature, but few governments even acknowledge the need for a carbon budget. The political center of gravity, particularly in the United States, will have to shift significantly before decision-makers can acknowledge the need for fossil fuel triage.

As fossil fuels become more costly to extract, there may be an ever greater temptation to use our available energy and investment capital merely to maintain existing consumption patterns, putting off any effort to effect the transition. If we procrastinate too much, we will reap the worst possible outcomes—climate chaos, a gutted economy, and no way to build a bridge to a renewable energy future.

Everything Is Connected

Throughout the energy transition, great attention will have to be given to the interdependent linkages and supply chains connecting various sectors (communications, mining, and transport knit together most of what we do in industrial societies). Some links in supply chains will be hard to substitute, and chains can be brittle: a problem with even one link can imperil the entire chain.

Consider, for example, the materials required to manufacture and operate a wind turbine. The components come from different manufacturing sectors in various

places in the world.

Planning will need to take such interdependencies into account. As every ecologist knows, you can't do just one thing.

This Really Changes Everything

Energy transitions change societies from bottom to top and from inside out. From a public relations standpoint, it may be helpful to give politicians or the public the impression that life will go on as before while we unplug coal power plants and plug-in solar panels. Still, the reality will probably be quite different.

During historic energy transitions, economies and political systems underwent profound metamorphoses. The agricultural revolution and the fossil-fueled industrial revolution constituted societal watersheds. We are on the cusp of a transformation that is every bit as decisive.

If the renewable energy transition is successful, we will achieve savings in ongoing energy expenditures needed for each increment of economic production, and we may be rewarded with a quality of life that is actually preferable to our current one.

We will enjoy a much more stable climate and greatly reduced health and environmental impacts from energy production activities. However, converting to 100 percent renewable energy will not solve other environmental issues such as deforestation, land degradation, and species extinctions.

Possibly, the most challenging aspect of this transition is its implication for economic growth. Whereas the cheap, abundant energy of fossil fuels enabled the development of a consumption-oriented growth economy, renewable energy will likely be unable to sustain such an economy.

Rather than planning for continued, unending expansion, policymakers must begin to imagine what a functional post-growth economy could look like. Among other things, the planned obsolescence of manufactured goods must end in favor of far more durable products that can be reused, repaired, remanufactured, or recycled indefinitely.

It seems wise to channel society's efforts toward no-regrets strategies—efforts that shift expectations, emphasize quality of life over consumption, and reinforce

community resilience. Even though it may be impossible to envision the end result of the renewable energy transition, we must seek to understand its scope and general direction.

Our descendants will inhabit a renewable world that works differently from ours. Whether it will be better or worse depends on our current decisions. The sooner we address the most obvious and pressing decisions (starting with a mandatory global cap on carbon emissions), the earlier we can anticipate the succeeding waves of problems and choices.

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