Addenda #54 – August 2024

Re: Ch. 8, Net-Zero emissions; Impossible!! / Land requirements for renewable power sources

SDG 13 – <u>Take urgent action</u> to combat climate change and its impacts*

In chapter 8, I detailed the tremendous amount of land that will be required to build the solar farms, wind turbine farms and battery storage facilities required to the achieve Agenda 2030 Sustainable Development Goal for "sustainable and modern energy" and net-zero emissions. Typically, when politicians and the media talk about Greenhouse Gas (CO_2) emissions reductions, everything is focused on retiring fossil fuel power plants and replacing them with wind and solar generation.

But I think by now, most reasonable and logical people realize this cannot be accomplished within the timeframe of Agenda 2030, using only green energy sources. In fact, U.N. Secretary General Antonio Guterres stated in his Pact for the Future: "… the achievement of the Sustainable Development Goals is in peril. Progress on most of the goals is either moving too slowly or has regressed below the 2015 baseline."

(See A Clear and Present Danger 3, Addenda 22 for more on the Pact for the Future)

The 2024 U.N. Sustainable Development Goals report states: "*To achieve universal access to clean energy by 2030, robust policies are needed to accelerate electrification, enhance energy efficiency and increase investments in renewable energy. These efforts, coupled with fostering innovative solutions and creating supportive regulatory frameworks, are pivotal to advance towards Goal 7 and meet climate objectives.*"

In order for us to reach net-zero emissions, other technologies and methods will have to be used and "supportive regulatory frameworks" are key to meeting climate objectives. Note: Regulatory frameworks are a set of requirements (laws or executive orders) that are often mandatory when imposed by governments.

"Innovative Solution" #1: Carbon Credits / Carbon Offsets

Carbon credits or *carbon offsets* are one of the innovative solutions currently being used to achieve reduction of greenhouse gas emissions, but these credits are a scam. One example is *forest carbon credits*, where a business, group of individuals or landowners pledge to plant new trees or not to cut existing trees down. (Trees remove CO₂ from the atmosphere, which counts toward reducing greenhouse gas emissions)

One Tree Planted, is a non-profit environmental charity that plants trees around the world, focusing on reforestation in areas affected by over logging and forest fires. When you donate to One Tree Planted, you receive a personalized tree certificate and updated reports showing the project your contribution supported.

Forest Carbon Works, another non-profit organization, partners with landowners to preserve and care for existing forests. Landowners apply for a membership, and have their forest inspected and qualified for acceptance to the program. If accepted, members are given an estimate for annual payment they will receive for maintaining and caring for their trees for

the 5-year membership period. After the initial 5-year period, landowners have to reapply for Membership again.

As the environmental group Greenpeace says: "Carbon offsetting is truly a scammer's dream scheme. It's a bookkeeping trick intended to obscure climate wrecking-emissions. It's tree planting window dressing aimed at distracting from ecosystem destruction." Carbon credits or offsets do nothing to reduce the source of greenhouse gas emissions, it's just a bookkeeping entry that allows the climate activists to claim progress is being made. In some instances, trees are not being planted. In other cases, renewable energy projects that are already being funded are being counted as new projects that businesses or individuals pay to buy carbon credits against.

In January 2023, *Verra*, a Washington D.C. based not-for-profit carbon credit certifier, was the subject of an investigation by multiple news media companies. The result of a nine-month investigation revealed that more than 90% of their rainforest offset credits – among the most commonly used by companies – are likely to be "phantom credits" and do not represent genuine carbon reductions. The report stated that only a handful of Verra's rainforest projects showed evidence of deforestation reductions, according to two studies, with further analysis indicating that 94% of the credits had no benefit to the climate. It also stated that the threat to forests had been overstated by about 400% on average for Verra projects, according to analysis of a 2022 University of Cambridge study.

Verra responded that the conclusions reached by the studies were incorrect and questioned their methodology. Verras' response was refuted by a peer review by science and technology journalists from ScienceAlert, but fellow carbon credit organizations immediately spoke out in support of Verra, and other forest-based carbon credit programs.

"Innovative Solution" #2: Carbon Capture Technology

Another innovative solution being promoted today is carbon capture technology. Advocates claim that this technology is a way to reduce CO_2 emissions, reducing global warming. Carbon capture and storage (CCS) involves the capture of CO_2 emissions from industrial processes, such as steel and cement production, or from the burning of fossil fuels in power generation. This CO_2 is then transported from where it was produced, via ship or in a pipeline, and stored deep underground in geological formations.

At the point of production, CO_2 gasses are separated from other gasses, then the CO_2 is compressed and transported thru pipelines, tanker trucks or ships to a storage site. The compressed gas is then injected into rock formations deep underground for "permanent storage". There are many such storage sites around the world, including several in the U.S. The Citronelle Project, north of Mobile Alabama, has been in operation since 2012. The storage facility is the site of a salt-cored anticline, an underground geological dome, that has stored hundreds of thousands of tons of CO_2 from the Plant Barry coal-fired power generating plant. Impermeable shale and clay prevents the upward release of CO2, and the facility is constantly being monitored for gas leaks after it closed. Summit Carbon Solutions is a new carbon capture and storage venture in the United States. They have an agreement with 57 ethanol manufacturing plants across the Midwest, to capture carbon dioxide produced during the manufacturing process, then ship it to a site in North Dakota for permanent storage.

The massive underground system of carbon dioxide pipelines will span 2,500 miles across several states and under hundreds of people's homes and farms and will sequester up to 18 million tons of CO2 each year. Summit Carbon Solutions stands to earn tax credits of over \$1.5 billion for construction of the project. Ethanol plants that sign up for the project stand to receive billions in federal funding.



Map of Summit Carbon Solutions proposed \$5.5 billion carbon pipeline. The pipeline extends across five states

Landowners, environmentalists and community legislators spoke out against the pipeline in those states, and the use of "eminent domain" to seize land for the pipeline to be built. Note: In chapter 8, I gave examples of the massive amount of land that will be required to build solar farms, wind farms and battery storage facilities. I also noted landowner protests of many of these projects, and that climate alarmists would be suggesting that government use "eminent domain" to provide the land necessary to complete these projects.

"For renewable energy to power the United States, the country will need ambitious politicians, public buy-in, and billions of dollars in investment. But there's a slightly less flashy tool that will also play a key role in the renewable energy transition: eminent domain law."

Over the protests of their citizens, government, Public Service Commissions in Iowa, Nebraska and North Dakota have approved the project <u>and the use of eminent domain</u> to seize the required properties saying state rules supersede local zoning regulations when the public benefits of the project outweigh the private and public costs."

The North Dakota Republican Party voted on a resolution backing the rights of landowners and objecting to using eminent domain for carbon capture pipelines at the North Dakota Republican Convention in April 2024. The resolution fell 2 votes short of the two-thirds majority required for passage.

In February 2024, the South Dakota Senate approved Senate Bill 201. The bill set in place new regulations for "linear transmission facilities" (a fancy name for pipelines) and allowed counties to impose a surcharge on pipeline companies. SB201 also removed the rights of local municipalities to establish "setback rules" for carbon pipelines within their borders and allows the state to "declare an emergency" upon signature from the Governor, thus taking away the citizens' right to a referendum.

South Dakota governor Kristi Noem signed the bill into law on March 26, 2024. Note: Kristi Noem, allegedly a Conservative Republican, and at one time potential vicepresident candidate for the 2024 election, approved SB201, stripping the rights from local municipalities to set restrictions on the pipeline, and allowing herself to take away her constituents' rights to hold a referendum on the project.

Approval for the pipeline still may depend on a proposed ballot initiative this November. Pipeline approval is still pending in Minnesota, but the use of eminent domain is not allowed by state law.

The Heartland Institute published an article on August 9, 2024 titled: *Carbon Dioxide Pipeline Battle: Seize Land for Green Energy?* The article detailed the process in which utilities and state governments intend to seize land over landowner protests for the pipeline. The article also talked about the reliability of carbon capture technology.

Supporters claim the project will deliver environmental benefits in the fight against climate change. Summit says the annual CO2 emissions savings will be equal to removing 3.9 million vehicles from our roads. But the project is fraught with feasibility and cost, <u>environmental</u>, <u>and safety problems</u>.

The feasibility and cost track record of CO2 capture <u>is poor</u>. There are 47 major carbon dioxide capture and storage (CCS) plants operating in the world today, and most are money losers even with heavy subsidies. Ethanol plants that pursue CCS will likely lose money, along with the <u>taxpayers who provide the subsidies</u>.

The environmental benefits from the Summit project will be tiny. CO2 captured from Midwest ethanol plants will do little to affect global temperatures. Today, all of the world's operating CCS facilities capture only 0.1% of industrial emissions. Even the Sierra Club opposes the Summit pipeline and calls CCS efforts "false climate solutions."

... not everyone sees CCUS as part of the climate solution. Some countries are moving ahead with CCUS deployment, while others are skeptical of its use. Some nongovernment organizations and other stakeholders oppose CCUS, arguing that it creates a <u>moral hazard</u> and that it's only a band-aid over what they see as the real problem: ending use of fuels. They point to a <u>mixed record of success</u>, <u>high costs</u> and disproportionate impacts on vulnerable communities among reasons to not rely on the technology. World Resources Institute, November 13, 2023

Despite the concerns, the 2021 Infrastructure Investment and Jobs Act and 2022 Inflation Reduction Act provide billions of dollars to support carbon capture, utilization and sequestration (CCUS) development and deployment. Addenda #55 – August 2024

Re: Ch. 8, Net-Zero emissions; Impossible!! / Renewable Power Sources are NOT reliable *SDG 7 - Ensure access to affordable, reliable, sustainable and modern energy for all SDG 13 – Take urgent action to combat climate change and its impacts**

APS battery energy storage facility explosion injures four firefighters; industry investigates

Last Friday evening in Surprise, Arizona, a storage facility owned by Arizona Public Service (APS) exploded, injuring four firefighters. Reporter for azfamily.com, Maria Hechanova, visited the scene yesterday and reported that the explosion had happened while four hazmat firefighters from Peoria were working to extinguish a battery fire at the facility.

The utility is investing heavily in battery storage, to help shore up solar energy. Last month it issued an RFP for up to 500 MW of storage.

"It's a learning process and we will continue to apply those lessons going forward," Renewable Energy World, April 23, 2019

Fire Shuts Down East Hampton Energy Storage Batteries

A fire broke out inside the battery energy storage facility at the East Hampton electrical substation last week. The fire was extinguished by the buildings internal fire suppression system and there were no injuries, but the storage facility... has been shut down indefinitely. The Southampton Press, June 7, 2023

Toxins found in air-quality tests at lithium-ion battery fire site in Warwick considered within 'normal' range

County, town and village officials said toxins were detected during the three-day blaze at Convergent Power and Energy's site on County Route 1 <u>but wouldn't reveal what those toxins were</u>. "There were a multitude," said Jason Brasler with Orange County Fire Services... News 12 also learned Friday that the lithium-ion batteries being used to store energy for Orange and Rockland Utilities are newly designed by the Oregon-based company Powin, according to Convergent, and being used for the first time in Warwick. News12 Hudson Valley, June 30, 2023

Note: According to the Environmental Protection Agency website, "Lithium-ion battery fires generate intense heat and considerable amounts of gas and smoke." The article goes on to state that "the emissions of toxic gases can be a larger threat than the heat..."

Commercial lithium-ion batteries release a various number of toxic substances including Hydrogen Fluoride HF, Phosphorus Pentafluoride (PF₅) and Phosphoryl Fluoride (POF₃). At the least case scenario, these gases are extremely irritating to skin, eyes and mucus membranes. At the worst, these gases can damage lung tissue and cause pulmonary edema. As 2 lithium-ion battery site fires smolder in Warwick, more questions raised over Staten Island facilities

STATEN ISLAND, N.Y. -- Fires at two lithium-ion battery energy storage sites (BESS) in Warwick, N.Y., have been smoldering for more than a week, after officials say a storm-related issue caused the newly installed units to ignite and burn in two separate incidents on June 26. Located in residential areas – one near three schools, a bus garage and some athletic fields – the sites were constructed and developed by Convergent Energy, a provider of energy storage solutions that was awarded an opportunity to build similar storage sites on Staten Island in 2021. Silive.com, July 9, 2023

Residents told to shelter in place due to potentially toxic smoke from solar farm fire

TOWN OF LYME, New York (WWNY) - Potentially toxic smoke is coming from a fire at a Jefferson County solar farm.

A large battery fire in Jefferson County has caused significant damage and is emitting large amounts of smoke that may pose health risks. Residents within a 1-mile radius of the fire are being told to shelter in place due to the smoke from the fire.

The county's hazmat team and numerous fire departments are on the scene. WWNYTV News, July 27, 2023

Officials: solar farm fire is contained; neighbors worry about contamination

TOWN OF LYME, New York (WWNY) - Officials say the fire at the solar farm in the town of Lyme was contained late Sunday morning.

Four lithium battery storage trailers caught fire at the Convergent Energy solar farm on County Route 179 on Thursday afternoon. Local fire departments had been pouring water on trailers since the fire broke out. They ended water operations at around 11 a.m. Sunday. Local officials said last week that there were no toxic byproducts in the air, and there was no indication of any groundwater or runoff contamination that would pose health risks.

WWNYTV News, July 31, 2023

East Hampton battery-storage site that caught fire to be offline for a year

A barn-sized battery-storage facility in East Hampton that experienced a fire in May will be out of commission for more than a year as developer NextEra works to remediate the site... Newsday, October 31, 2023

After three fires this summer at commercial battery storage facilities in N.Y., Hochul creates working group for safety investigation

The governor's announcement came the day after fire erupted at a battery energy storage system in the Town of Lyme, in upstate Jefferson County on July 27. Hochul cited that fire and others at battery energy storage facilities in the Town of Warwick, in Orange County on June 26 and in the Town of East Hampton in Suffolk on May 31.

Energy storage is a vital component in a power grid that relies on renewable energy resources, such as solar and wind power. Battery systems store power produced by renewable energy systems for deployment during peak times of consumption, when wind and solar systems are often not at peak production.

Riverhead Local, August 4, 2023

Otay Mesa battery facility fire could take weeks to put out entirely

SAN DIEGO (FOX 5/KUSI) — A stubborn fire at a battery storage site in Otay Mesa is burning for a sixth day. Fire officials are preparing for it to potentially take weeks to put out.

"We're not sure. We're preparing for the worst and making plans to be here for a long time, <u>two to</u> <u>four weeks</u> and will reevaluate then," said Captain Brent Pascua with Cal Fire San Diego. The fire began last Wednesday at the Gateway Energy Storage facility and flare-ups over the weekend put evacuations warnings for the surrounding area back in place.

Pascua said things began to reignite Friday night. "You have to put water on it to keep the fire confined, but that water damages the batteries also allowing them to arc starting another fire. * We're just trying to keep the public safe and keep the fire contained to the building," he said. KUSI News San Diego, May 22, 2024

Note: * Remember that, when you go to purchase an electric vehicle!!

Battery Storage Fire in California Sparks Widespread Safety Concerns

Fire crews took 24 hours to "get a handle on" the flare that erupted May 15 at the 250-megawatt Gateway Energy Storage Facility in Otay Mesa near San Diego, reports Fox 5 News. Two days later it reignited—and then <u>smouldered for more than a week</u>.

Surrounding businesses were evacuated and a 600-foot safety barrier was established to keep civilians away from possibly dangerous levels of hydrogen near the facility.

"The fire is what we call 'thermal runaway'—(meaning) the lithium-ion batteries are kind of ignited in their burning, so what we are doing right now is <u>trying to contain the toxic fumes</u> and the smoke, and the fire obviously," said Cal Fire Battalion Chief Patrick Walker, during the response to the second fire. "But it's one of those processes that could be long-duration."

The facility's lithium-ion batteries are believed to be the source of the fire. They are prone to thermal runaway, a chain reaction that results in the battery producing heat more rapidly than it can dissipate. Internal battery temperatures can spike to around $400^{\circ}C$ (752°F) in milliseconds, and the intense heat driving the fires make them <u>extremely difficult to put out</u>. EnergyMix, June 7, 2024

Fire in Otay Mesa puts battery storage projects under scrutiny and neighborhoods on edge

A fire at a battery storage facility in Otay Mesa is out — but the stubborn nature of the blaze has sparked opposition from some residents about the relative safety of at least three other battery projects that developers want to build in other parts of San Diego County.

Renewable energy supporters say battery facilities are essential to meet California's goals to develop a carbon-free electric grid. State policymakers and battery companies say the risk of future fires will decrease over time, counting on technological improvements in battery chemistries and better designs at the facilities housing the batteries. San Diego Union-Tribune, June 20, 2024

Claims vs. Facts: Energy Storage Safety

Utility-scale battery energy storage is safe and highly regulated, growing safer as technology advances and as regulations adopt the most up-to-date safety standards.

American Clean Power Association: "the leading voice of today's multi-tech clean energy industry"

Addenda #56 – August 2024

Re: Ch. 8, Net-Zero emissions; Impossible!! / Renewable Power Sources are NOT reliable *SDG 7 - Ensure access to affordable, reliable, sustainable and modern energy for all*

Stumbles for Embattled Solar Firm SunPower End in Bankruptcy

After a drawn-out saga involving a restructuring and a management shakeup, one of the most prominent names in US solar, SunPower Corp., has now filed for bankruptcy. Over the course of less than two years, the once-darling of the industry was forced to fire workers to cut costs, restate earnings and default on a credit agreement.

Industry headwinds added to the woes: High interest rates and subsidy changes in California — the US sector's biggest market — have been a drag for solar firms that expected big growth from President Joe Biden's signature climate law of 2022.

"SunPower has faced a severe liquidity crisis caused by a sharp decline in demand in the solar market and SunPower's inability to obtain new capital,"

Note: SunPower, once among the largest solar manufacturers in the country, closed its last U.S. factory in 2021. In 2008, SunPower signed an agreement with the Department of Energy to receive \$8,469,998 in initial funding. Total potential funding from the DOE under the *Solar America Initiative* (SAI) is up to \$24.7 million for this three-year project.

Fast Forward...

Biden is marking Earth Day by announcing \$7 billion in federal solar power grants

President Joe Biden is marking Earth Day by announcing \$7 billion in federal grants for residential solar projects serving 900,000-plus households in low- and middle-income communities. He also plans to expand his New Deal-style American Climate Corps green jobs training program.

The grants are being awarded by the Environmental Protection Agency, which unveiled the 60 recipients on Monday. The projects are expected to eventually reduce emissions by the equivalent of 30 million metric tons of carbon dioxide and save households \$350 million annually, according to senior administration officials.

The awards came from the <u>Solar for All program</u>, part of the \$27 billion "green bank" created as part of a sweeping climate law passed in 2022.

Addenda #57 – August 2024 Re: Ch. 8, Net-Zero emissions; Impossible!! / U.S. Power Grid SDG 7 - Ensure access to affordable, <u>reliable</u>, sustainable and modern energy for all

> The U.S. Power Grid Facts

The U.S. power grid is made up of over 7,300 power plants, nearly 160,000 miles of high voltage power lines, and millions of miles of medium-voltage power lines and distribution transformers, connecting 145 million customers throughout the country.

- 1. There are 3,150 utility companies in the U.S. Each utility must receive approval from state regulators to raise capital to upgrade and install new transmission lines.
- 2. Landowners and municipalities have to agree on right-of-way access for new lines.
- 3. Transmission lines crossing multiple states must receive permits from many local and state agencies to build new transmission lines.
- 4. A single county can block the construction of a new transmission line that would benefit the entire region.
- 5. High voltage and medium voltage distribution and transmission equipment will have to be upgraded along with cabling.

Americans for a Clean Energy Grid and Grid Strategies Release New Report on Declining Large-Scale Transmission Construction in the U.S. Americans for a Clean Energy Grid, July 30, 2024

Today, Americans for a Clean Energy Grid (ACEG) and Grid Strategies released the report "Fewer New Miles: The U.S. Transmission Grid in the 2020s." The report details the <u>alarming</u> <u>slowdown</u> in the construction of high-voltage transmission lines across the United States.

The new report reveals a contrast between transmission spending and the dwindling expansion of new infrastructure, posing significant challenges to the nation's energy future.

- Construction of new high-voltage transmission in the U.S. has slowed to a trickle over the past decade, with <u>only 55 new miles built in 2023</u>.
- Projected load growth has doubled in the last year and serving that load will require expanded transmission capacity.
- Despite this decline in new construction, annual transmission spend has risen to more than \$25 billion in 2023. Ninety percent of this spend is driven by reliability upgrades and the replacement of aging equipment, which does not increase delivery capacity.
- <u>The U.S. only builds 20% as much new transmission in the 2020s as it did a decade</u> ago in the first half of the 2010s.

The Transmission Grid report noted that there needs to be a 57% growth in transmission infrastructure by 2035 compared to today's system, but "utility companies are not responding."

"... a significant increase in federal funding and utility investment in new greenfield highcapacity projects is still needed to truly move the needle on transmission expansion and ensure a reliable and affordable transition to a cleaner grid."

The Biden administration announced a Federal-State initiative in April 2024, launching a public-private mobilization to upgrade 100,000 miles of existing transmission lines over the next five years.

The *Federal-State Modern Grid Deployment Initiative*, supposedly has commitments from 21 leading states (including New York) to "prioritize efforts that support the adoption of modern grid solutions to expand grid capacity and build modern grid capabilities on both new and existing transmission and distribution lines."

Utility companies in New York began a decade long project to upgrade the state electric grid in 2021. Phase 1 projects to upgrade transmission lines was estimated (in 2019 dollars) to cost \$4.164 billion. Distribution upgrades to go along with the transmission lines was estimated to cost \$2.652 billion, so the total cost of 113 planned upgrades for Phase 1 to "address reliability, asset condition or compliance needs" was estimated to cost \$6.816 billion (in 2019 dollars).

Phase 2 "Local Transmission Headroom" upgrades are upgrades at the "street and local levels" for connection of new renewable sources to the grid, and distribution directly to utility customers.

These 71 projects will cost NY rate payers an additional \$9.777 billion to \$10.428 billion to complete. These projects are not fully "conceptualized" or designed at this time, so it is likely that the cost of Phase 2 is "understated".

[Ref: Addenda #24, November 2023]

Since the power grid study was completed, price increases of four to nine times have been reported in the past 3 years on utility distribution equipment and lead time from order to delivery has increased to as long as two years. Cost estimates calculated in 2020 are no longer valid for estimating the final costs of the projects listed in the grid study. Just a four percent increase in equipment costs could add \$30 million, or more, in additional costs to that 2020 estimate to utility customers over the next decade. [Ref: Addenda 47, June 2024]

Note: There are over 11,000 miles of transmission lines serving utilities and customers in New York state.

Landowners and communities' resist



Long Range Transmission Plan Electric Transmission Line Projects

Michigan's Future Grid: Long Range Transmission Plan Projects

Project Background

Responding to the needs of the changing energy landscape, the Midcontinent Independent System Operator (MISO), the grid planning organization that includes Michigan, has devoted several years of an intensive, collaborative effort to develop a Long-Range Transmission Plan (LRTP) to build needed high-voltage transmission infrastructure across the region. ITC was actively involved with this process and advocated for the LRTP projects.

Helix-Hiple

Approximately 55 miles of new 345 kilovolts (kV) lines will be constructed from northern Indiana to a new ITC substation, named Helix located southwest of Lansing. This will be the first new interstate connection to Michigan's transmission system in nearly 50 years.

Transmission Lines and Eminent Domain: What Property Owners Need to Know Ackerman & Ackerman, P.C. 988 S. Adams Rd., Suite 207 Birmingham, Michigan 48009

Our firm has recently received many phone calls and emails from property owners about the International Transmission Company's (ITC) \$850,000,000 project across Calhoun, Branch, Eaton, Clinton, Gratiot, and Ionia Counties (specifically, U-21471, which goes from ITC Oneida Substation to Nelson Road Substation and U-21472, which goes from ITC Helix Substation to Hipple Substation). The project will place several hundred property owners—primarily engaged in agriculture—in the difficult position of potentially losing control of all or part of their land. We have also received several inquiries from residents in Roscommon County, where Consumers Energy plans on placing high-voltage transmission lines on residential properties.

What to expect when a utility company decides to take your property:

The utility company approaches you and asks you to grant it an easement (typically for a small sum):

At an early stage, utility companies compare routes for transmission lines and decide where to place them based on several factors, such as minimizing costs and environmental impact.

Utility company submits a written offer based on an appraisal report:

If property owners do not voluntarily acquiesce to the utility company, the utility company has to sue the owner to acquire the property via eminent domain.

The utility company files an eminent domain lawsuit:

Finally, if the utility company cannot resolve its case with you, it will need to file an eminent domain lawsuit.



PacifiCorp – The largest grid operator in the Western United States, serving 2.1 million customers through Rocky Mountain Power and Pacific Power utility cos.

PacifiCorp's Energy Gateway Transmission Expansion Program represents plans to build over 2,300 miles of new high-voltage transmission lines, with an estimated cost of over \$8 billion, primarily in Wyoming, Utah, Idaho and Oregon.

PacifiCorp Gets OK for Two Sections of Energy Gateway Lines

North Dakota NewsData, May 13, 2022

PacifiCorp has been given the final regulatory green light to begin construction on two segments of its \$8 billion Energy Gateway transmission project. The Wyoming Public Service Commission on May 10 granted certificates of public convenience and necessity, which followed on the heels of approvals from the Utah PSC on April 8.

Note: A "certificate of public convenience and necessity" is a compliance certificate allowing private companies to provide "essential public services".

On June 29, 2021, the United States Supreme Court ruled in a 5-4 decision that the federal government's power to take property for public use could be delegated to private parties and that such power included taking land whether owned by private parties or States. The Court decision upholds the right of eminent domain authority by the Federal government can be transferred to private parties, like PacifiCorp, ITC or Summit Carbon Solutions.

The Federal Energy Regulatory Commission (FERC) or any Public Service Commission, can issue a certificate of public convenience and necessity to private companies, to build oil and gas pipelines or electric transmission lines. If the company cannot acquire the necessary rights-of-way by contract at an agreed compensation to landowners, to acquire the property by the exercise of the right of eminent domain.

"Permitting reforms are desperately needed to allow investment to be done in any kind of timely way. We may even need to evoke eminent domain – we simply are not getting the adequate investments fast enough for grid, solar, wind and pipeline initiatives." Jamie Dimon, CEO JP Morgan Chase, 2023 [Dimon is a World Economic Forum Agenda Contributor]

What remains completely unexplored, however, is the potential for state property law reform—most notably eminent domain law—to limit the development of fossil fuels and promote the growth of alternative energy to support these new clean energy policies.

Eminent Domain Law as Climate Policy; Alexandra B. Klass, University of Minnesota Law School, 2020

Note: Professor Alexandra Klass was appointed to serve as Deputy General Counsel for Litigation, Regulation, and Enforcement at the U.S. Department of Energy (DOE) by President Biden in 2022. Klass is a Member Scholar for the left-of-center political research and activist organization *Center for Progressive Reform*. The *CPR* advocates for economic and social policies, including a "clean energy economy" and "advancing the concerns of marginalized groups by centering racial and economic justice in climate policy."

Addenda #58 – August 2024

Re: Ch. 8, Net-Zero emissions; Impossible!! / U.S. Power Grid SDG 7 - Ensure access to affordable, reliable, sustainable and modern energy for all

In chapter 9, I gave a brief description of Climate Policies that have been enacted in the countries two most Progressive states, California and New York. California enacted the "*California Global Warming Solutions Act of 2016*", requiring the reduction of greenhouse gas emissions to 1990 levels (360.2 MMTCO₂e) by the year 2020, a reduction of 40% below 1990 levels by the year 2030 and an 80% reduction by 2050. In 2022, California released an updated *Scoping Plan*, which included even more aggressive reduction targets; reducing GHG 48% by 2030, 85% by 2040 and achieving "carbon neutrality" (zero emissions) by 2050.

California's 2020 reduction goal to 1990 levels, equates to a target emissions rate of 431 million metric tons of carbon dioxide equivalent (MMTCO₂e). California's 2030 reduction goal of <u>40% below</u> 1990 levels equates to a target emissions rate of 258.6 million metric tons of carbon dioxide equivalent (MMTCO₂e) by 2030.

So how has California progressed in achieving their targets?

California reduced emissions to the 1990 level in 2014 and the rate has continued to decline. In 2021, the most recent year emissions data are available for, California was responsible for GHG emissions of 381.3 MMTCO₂e.

But that's only a reduction of 11.5% from 1990 levels, with just 9 more years to reach the 48% reduction target by 2030.

Can California hit emissions goals by 2030? A new report casts doubt Los Angeles Times, March 18, 2024

California's goal was ambitious: The state vowed to reduce, by 2030, greenhouse gas emissions by 40% compared with 1990's levels.

But according to a new report, the rate at which emissions are being reduced has put us more than 15 years behind schedule. The authors of the latest <u>California Green Innovation Index</u> now project we won't hit our reduction goal until 2047.

The Progressive media has been blaming wildfires over the past several years, for California failing to meet further greenhouse gas emission reductions.

Wildfire Emissions are Erasing California's Climate Gains; Energy Policy Institute at the University of Chicago, October 17, 2022

Up in smoke: California's greenhouse gas reductions could be wiped out by 2020 wildfires ScienceDirect, October, 2022

California wildfires offset greenhouse gas reductions Los Angeles Times, October 20, 2022

This conclusion is plausible, but let's investigate a little further...

New York enacted the "*Climate Leadership and Community Protection Act*" in 2019, requiring the reduction of greenhouse gasses to 40% below 1990 levels by the year 2030 and an 85% reduction by 2050.

New Yorks 2020 reduction goal <u>to</u> 1990 levels equates to a target emissions rate of 403.9 million metric tons of carbon dioxide equivalent (MMTCO₂e). The 2030 reduction goal of <u>40% below</u> 1990 levels equates to a target emissions rate of 242.4 million metric tons of carbon dioxide equivalent (MMTCO₂e).

So how has New York state progressed in achieving its targets?

New York reached 1990 level emissions in 2016 and the rate has continued to decline. In 2021, the most recent year emissions data are available for, New York was responsible for GHG emissions of 367.9 MMTCO₂e.

But that's only a reduction of 8.93% from 1990 levels, with just 9 more years to reach the 48% reduction target by 2030.

Report: NY might miss its 2030 climate goals

Public News Service, July 15, 2024

A new report shows New York will have to delay its 2030 climate goals. The report from the New York State Energy Research and Development Authority showed the state will be a few years off from its climate goals despite a fervent push toward renewables, due to pandemic-era inflation and growing clean energy demand.

Five years into New York's climate law, the state needs a bold cap-and-invest program to bring emissions goals into reach

Environmental Defense Fund, July 25, 2024

This month marks five years since New York State's Climate Leadership and Community Protection Act (CLCPA) was signed into law. At the time of its enactment in 2019, the groundbreaking climate law set New York apart as a national and global climate leader.

Five years in, however, New York does not yet have the rules in place to deliver on the climate law and all the promise it holds for New Yorkers.

Well, New York state doesn't have the wildfire problems California has, so that excuse for failing to reach climate goals can't be used here. Let's explore a little further...

The Virginia "*Clean Economy Act*" was signed into law in 2020. A little late coming into compliance with Agenda 2030, but then the state Senate and House were under Republican control... until 2020!

The *Clean Economy Act* did not set emissions goals but instead required the states two utility companies, Dominion Energy Virginia and Appalachian Electric Power, produce 100 percent renewable electricity by 2045 and 2050, respectively. The Act established schedules for retiring fossil fuel electricity generating plants and replacing them with solar and wind generation.

Each utility is also required to achieve incremental annual energy efficiency savings that starting in 2022. The energy efficiency programs include weatherization, home assessments and appliance rebates for Dominion customers.

Failure to meet those targets would result in paying a specific *deficiency payment* (read: penalty or fine) or purchase renewable energy certificates.

The Act also established goals for installing energy storage capacity (to back up renewables when they fail to produce electricity).

So how have utility companies in Virginia progressed in achieving their targets?

Dominion miss on Virginia efficiency target could impact gas peaker approval

The Virginia Clean Economy Act set Dominion energy savings targets through 2025. "It seems very probable they won't hit any of the targets," said Nate Benforado, senior attorney at SELC. UtilityDive, July 31, 2024

The first energy savings goal under the Clean Economy Act, was for Dominion to achieve a 1.25% energy savings in 2022. They couldn't pull that off; their energy efficiency programs were only able to reach a savings of 1.23% As a result, they had to forfeit a \$6 million "performance bonus" and were held liable for that deficiency payment.

"We thought there was a chance they might meet the first year based on prior procedings, but it seems very probable they won't hit any of the targets through 2025," Dominions' failure to reach climate targets jeopardizes plans to install an additional 1 gigawatt of new gas-fired peaking generation, that the utility says it needs for system reliability and meet the growing demand from data centers and electrification.

The Virginia Clean Economy Act (VCEA), with its demand to eliminate hydrocarbon fuels for electricity in Virginia, will soon take a deeper bite out of bank accounts for many Virginia families and businesses.

As of September 1, Dominion Energy Virginia residential bills <u>will rise 11%</u>. Adding to that, next summer the cost of back-up generation from outside that utility's network jumps 1400%. A <u>previous</u> article warned Virginia might run out of "other people's power" to meet customer demand, and this sudden jump in the price of "other people's power" proves the point. Thomas Jefferson Institute for Public Policy, August 19, 2024

Virginia in Real Danger of Running Out of Other People's Power

An electricity drought is looming, not only for Virginia but also for much of the United States, if the political hostility toward the most reliable forms of electricity generation is not reversed. Warnings that wind and solar power alone will not be sufficient resonated like a drumbeat from the podium of a two-day conference on Virginia's energy future last week. Thomas Jefferson Institute for Public Policy, July 22, 2024

California failed to meet its goals. New York state failed to meet its goals. Now Virginia utilities fail to meet their goals.

As I stated in chapter 8: "2050 Net-Zero Emissions; Impossible!

Addenda #59 – August 2024

Re: Ch. 8, Net-Zero emissions; Impossible!! / U.S. Power Grid SDG 7 - Ensure access to affordable, <u>reliable</u>, sustainable and modern energy for all
Ref: Addenda #44 – April 2024 New York states electrical grid

New York could see electricity demand grow 90% by 2042: ISO

Long-duration batteries, small modular nuclear reactors, hydrogen and fuel cells may be needed to replace 25 GW of fossil generation by 2040.

2023-2042 System & Resource Outlook; New York Independent System Operator, July 23, 2024

Key Findings: Demand

✓ Electric Energy consumption is projected to increase significantly in response to the economic development and decarbonization energy policies. The resources and transmission system necessary to meet the changing energy demand needs to evolve accordingly.

New York is projected to increase electric energy consumption by roughly 50% - 90% and become a winter-peaking system over the next 20 years. This drastic change is largely driven by the electrification of essential energy-consuming systems, primarily building heating and electric vehicle charging.

In response to the passage of the *Climate Leadership and Community Protection Act* (*CLCPA*), the New York Independent System Operator (ISO) prepared a report detailing electric load assumptions and calculations based on the additional renewable electricity generation that would be required to achieve reductions in greenhouse gas emissions. The report was titled 2019 Congestion Assessment and Resource Integration Study, or 2019 CARIS 70x30. (See Addenda #47, June 2024, for NYISO CARIS information)

The 70x30 load scenario accounted for the additional demand that would be required for the "electrification" of our society: EV's replacing gas powered cars and trucks, electric school buses replacing diesel, and electric heating replacing gas, oil and propane space heating. It also accounted for the retirement of New York states six remaining nuclear reactors (because nuclear power is not recognized by climate advocates as a "true renewable" power source), all of New Yorks natural gas and methane-fired power plants and forty-nine fuel oil-kerosene- and gas-fired "peaker (peak demand) plants."

[Ref: Addenda #44 – April 2024 "Deficit of Resources"]

Renewable power sources required for electrification included an estimated 11,564 GWh (gigawatt-hours) of electricity imported from hydroelectric power plants in Canada. The final 70x30 scenario *High-load forecast* estimated a gross load of 165,500 GWh.

The CARIS report analyzed the effects of additional electricity generation to the existing grid system and found that all five regional areas lacked transmission capability to deliver the power required by electrification. These findings resulted in the *New York Power Grid Study*, published in January 2021.

Based on the findings of the CARIS report, the Power Grid Study identified 113 "Phase 1" projects requiring immediate upgrades, replacements or additions to maintain the reliability and "compliance needs" of the electrical grid transmission and distribution system. The Grid Study also identified an additional 71 "Phase 2" projects that would be required for connection and delivery of new renewable power generation within the grid.

At the time I did my initial comparisons, I noted that New York is already in the process of building new solar and wind farms to increase the supply of renewable electric power, but it has a long, long, long, long way to go to meet those 2030 and 2050 targets for renewable energy production. I also reported two months ago in Addenda #47, on the preparedness of the electrical grid in New York in regarding achieving electrification goals outlined in the 2021 New York Power Grid Study.

The 2019 CARIS report showed net generation of 134,537 GWh of electricity in 2019. The Power Grid Study called for an additional 30 GW of renewable electricity the electrical grid would have to carry by 2030.

This was the capacity the states transmission lines and electrical distribution equipment would have to be upgraded for.

An electricity demand increase of 50% to 90% as that July ISO report noted, would mean a revised net generation of between 201,805 and 255,620 GWh by 2042. Since the Power Grid Study is only planning for 134,567 GWh of grid capacity, it seems like those 184 projects the Study called for at a possible cost of \$17.2 billion is *vastly understated*.

In fact, the Power Grid Study does address the potential for further demand increase in section V of the report, under the *Summary of Zero Emissions Study Results*;

"The Zero Emissions Study found that New York's 2030 goals could be met at low levels of curtailment and congestion without significant bulk-power transmission upgrades beyond those already planned and under development, and a new HVDC line delivering dispatchable renewable energy into New York City that is assumed to materialize as a result of the State's new Tier 4 procurement. However, by 2040, high levels of congestion and some curtailments point to <u>a need for additional bulk transmission upgrades</u>."

On June 6, the NY Independent System Operator (NYISO) released its annual *Power Trends* report for 2024. The report went into great detail about the state power grid slowly becoming a "winter peaking system" in the 2030's "primarily driven by electrification of space heating and transportation." The report also detailed ten new "large load" projects currently in the planning phases or under construction, in New York state. In Addenda #47, I noted that new manufacturing and industrial facilities and data centers are projected to add significantly to existing electric loads. These projects will add a combined load of 1,846 Megawatts to New Yorks electric grid. These manufacturing and data facilities depend on a *reliable* and *balanced* electrical grid. (See Addenda #44, April 2024) But the Power Trends report states that the electric grid continues to show "declining electric system reliability margins across the state", as "traditional fossil-fueled generation is retiring faster than renewable and other clean energy resources are entering service."

The NYISO Power Trends report goes on to state: "A reliable transition of the grid requires <u>a significant increase in capital investment</u> delivered at an unprecedented pace... the need to invest in the transmission system <u>has never been greater</u>." NYISO 2024 Power Trends, Annual grid and markets report, June 2024.

Again, New Yorkers (and Americans as a whole) have been sold on the idea of net-zero emissions and <u>affordable</u> renewable energy, without being presented with the full cost of the transition, which includes the electric grid. Remember that the New York *Climate Leadership and Community Protection Act* mandated the 100% reduction of greenhouse gas emissions by 2050. The Act did not specify the electrification of vehicles, industries, homes, lawn mowers and leaf blowers! Instead, it was a politically calculated *first step* to get the public on board with a just cause: *"how to confront the greatest threat facing life as we know it — a rapidly changing climate."*

Once the hook was set, the CLCPA was followed by additional mandates that were never discussed by the public or our legislators but signed into law thru executive orders or buried in state budgets. Example;

The New York "*All-Electric Building Act*", was "introduced" into the legislature in 2021, sponsored by 23 Democrat Senators. The bill failed to get enough support to make it to the floor for legislative vote, and was reintroduced into the Senate in 2022, 2023 and 2024, each time failing to gather enough support to be voted on. This is the legislative process working. The public elects' representatives. They come up with ideas, supposedly for the good of their constituents, and sponsor a bill. The bill is assigned to a committee for study. The committee either releases the bill to be voted on or it dies due to lack of support.

Governo Kathy Hochul also included her own version of the bill in her 2022 and 2023 "State of the State" addresses, but the *All-Electric Building Act* still could not gather enough support in a state legislature with both houses having a Democrat supermajority. Instead, in January 2023, Governor Kathy Hochul included the All-Electric Building Act into the Fiscal Year 2024 New York state Budget. In this way, the governor allowed the legislation to be voted on without public comment or legislative debate, holding the budget hostage for a successful vote and passage of the bill along party lines, 42-21.

- The 2019 NY Power Grid Study vastly understated the scope and cost of grid upgrades.
- The 2019 CARIS 30x30 report did not take into account large load requirements of industrial and data center projects.
- New Yorks electrical grid is expected to have continued "declining reliability margins", leading to load disruptions as early as the winter of 2027-2028.
- New York Democrat politicians continue to impose emissions mandates responsible for the electric grid problems.

Addenda #60 – August 2024 Re: Ch. 11, Vehicle "Electrification" by 2050; Impossible!! SDG 7 - Ensure access to affordable, <u>reliable</u>, sustainable and modern energy for all

Ford Scraps Electric SUV in \$1.9 Billion Hit to EV Ambitions

Bloomberg, August 21, 2024

Ford Motor Co. is recalibrating its electrification strategy yet again, <u>canceling plans</u> for a fully electric sport utility vehicle in a shift that may cost the carmaker around \$1.9 billion. In addition to scrapping an all-electric three-row SUV that already had been delayed, Ford will further postpone a next-generation electric pickup and <u>reduce spending on EVs</u> to 30% of its annual capital expenditures, from about 40% previously...

As a result of this change of plans, Ford will take a special non-cash charge of about \$400 million related to writing down the value of manufacturing assets it will no longer use. The Canadian plant where the electric SUV was going to be built <u>is now slated to produce highly profitable, combustion engine-powered pickups</u>... Ford expects its EV division to lose as much as \$5.5 billion this year.

Production Plans Downshift as EV Sales Stall

Microsoft News, August 28, 2024

GM will delay the opening of a planned *EV* factory after similar postponements and cancellations of new models by other U.S. car makers.

Big U.S. automakers continue scaling back ambitious plans for producing and selling electric vehicles (EV), amid increasing signs consumers aren't giving up gas-burning cars as fast as expected...

... though sales of battery-powered cars continue to rise, adoption rates by buyers aren't as strong as many manufacturers, suppliers, and observers expected. As a result, producers are delaying scheduled capacity expansions, and in some cases cancelling models that had been planned, but which demand doesn't justify. Just last month, GM said it would postpone development of an EV line it had expected to add to its Buick brand, and reschedule the opening of a factory that will produce electric trucks--the second time it has done so.

Market headwinds force LG Energy Solution, others to pause EV manufacturing projects

Financing woes, soaring material prices and waning demand are causing auto and battery makers to delay projects, even those that have already started. UtilityDive, August 28, 2024

Growth rates around EV sales have decelerated this year, according to data from the International Energy Agency. Carmakers across the board, such as Ford and GM, are slashing production plans amid this demand slowdown.

LGES cuts sales target on weak EV demand, flags US election risk

South Korean battery maker LG Energy Solution said on Thursday its revenue would plunge more than 20% this year and that it would ease capacity expansion due to a sharper-than-expected slowdown in global electric vehicle (EV) demand.

Reuters, July 25, 2024

Although EV sales in the U.S. grew 52% and crossed the one million mark in sales for the first time, they represented just 7.6% of the total 15.6 million light-duty vehicles sold in 2023. The rate of growth in EV sales was lower than automakers had anticipated, causing several to adjust timing of near-term investment plans as noted above and in Addenda #42 – April 2024. In fact, automakers put significant pressure on the Biden-Harris administration to "soften" its EPA mandate to sharply cut vehicle emissions through 2032 saying it is "neither reasonable nor achievable."

Under the initial EPA proposal covering 2027-2032, automakers were expected to aim for EVs to constitute 60% of their new vehicle production by 2030 and 67% by 2032 to meet stricter emissions requirements. The final regulation, revised in March 2024, is expected to result in EVs accounting for about 56% of new passenger vehicles sold for model years 2030 through 2032.

Despite federal and state mandates on zero-emissions vehicles, mainstream consumers are not buying *all electric* vehicles. Car shoppers cite two main reasons for the hesitancy: uncertainty about the availability of reliable chargers, and the price.

The Chevrolet Equinox is an affordable value SUV and the best-selling vehicle in the Chevrolet lineup. The 2025 Equinox LT FWD base model lists for \$29,995. The 2024 Equinox 2LT FWD EV base model lists for \$34,995.

The Equinox EV qualifies for the full \$7,500 Clean Vehicle Federal Tax Credit, reducing the MSRP to \$27,495.

Only the Tax Credit makes the Equinox EV affordable compared to the gas-powered model. The tax credit is income based with additional restrictions on the sale price and battery sourcing, so not every light-duty EV purchase qualifies for the full or partial tax credit. If two-thirds of all purchases qualified for the full tax credit, the Department of Treasury would have spent \$5.8 billion in 2023 on those tax credit reimbursements.

The tax credit is a "nonrefundable credit" which means that the amount of the credit you receive can reduce the amount of tax you owe on your federal tax return to zero but can not result in a refund to you. Any amount remaining from the credit rolls over into the next year, and you have to remember to input the remaining credit towards future tax year liabilities. Internal Revenue Service data for the 2023 tax filing season shows that about 65% of filers receive a refund of overpaid taxes. If the EV buyer is already receiving a refund, then they are not allowed to use any of that Clean Vehicle Tax Credit on their return: they have to specifically plan to owe money on their return to benefit from the credit.

In order to boost EV sales, the Treasury Department began allowing purchasers to sign over their tax credit directly to auto dealers beginning in January 2024. In this way, the buyer gets a discount on the purchase price up front, and the dealer receives the \$7,500 directly from the Treasury Department. This will make electric vehicles more affordable for future buyers but will also increase the governments deficit spending and national debt.