

Addenda #81 – June 2025

Re: Ch. 8, 050 Net-Zero Emissions; Impossible!

*SDG 7 - Ensure access to affordable, reliable, sustainable and modern energy for all*

- *Renewable Power Sources are NOT reliable*
- *The U.S. Power Grid*

### *Kill Switches Secretly Installed In Solar Panels*

Cyber Security Intelligence; May 19, 2025

<https://www.cybersecurityintelligence.com/blog/kill-switches-secretly-installed-in-solar-panels-8439.html>

*Chinese “kill switches” have been discovered hidden in American solar farms, triggering urgent warnings over US national energy security and prompting calls to suspend the deployment of renewable energy generation in the UK.*

*The kill switches, identified as cellular radios, are embedded within power inverters manufactured by Chinese companies and sold to US power generators*

Solar power inverters are electronic devices that take the direct current (DC) voltage produced by solar panels and convert it into alternating current (AC) voltage for transmission to our electrical grid. Five of the largest solar power inverter manufacturers are Chinese companies, responsible for 35% of all inverter sales in the U.S.

In 2024, utility-scale solar power generated 218.5 terawatt-hours (TWh) in the United States, or 5% of all utility-scale electricity generated. With the push for renewable energy generation to meet state mandated clean energy goals continuing to ramp up, this percentage will only increase in future years. As we become more dependent on solar power and solar power inverters.

A “kill switch” is a device used to shut down equipment manually in an emergency situation, most commonly referred to as an emergency stop or E-stop. The devices that have been found in imported solar power inverters can be activated remotely by wireless signal, disconnecting generation from the electric grid, which could destabilize power grids, damage distribution equipment and trigger widespread blackouts.

(Ref: Addenda 80, May 2025; Net Zero Blamed for Europe’s biggest power cut)

Ever since Xi Jinping became the leader of China, he has had a long-term plan to challenge America’s global leadership and become the economic and manufacturing leader of the world. Our leaders have been warning about China’s threat to the U.S. for years now. In April 2024, FBI Director Christopher Wray warned national security and intelligence experts at the Vanderbilt Summit on Modern Conflict and Emerging Threats, that risks the government of China poses to U.S. national and economic security are “upon us now”—and that U.S. critical infrastructure is a prime target. “The PRC [People’s Republic of China] has made it clear that it considers every sector that makes our society run as fair game in its bid to dominate on the world stage, and that its plan is to land low blows against civilian infrastructure to try to induce panic and break America’s will to resist,” Wray said.

The panic and confusion that followed the grid shutdown in Spain and Portugal on April 28, 2025, is an example of what would happen here in the United States, if those kill switches were triggered. With entire regions interconnected on shared electrical grids, the outcome would be far worse with multiple states and large industrial manufacturing affected for days or possibly longer. Example.

In 2021, the federal government had to issue an emergency declaration after a cyber-attack on a major U.S. pipeline shut down transport of oil across the eastern coast. The Colonial Pipeline, the country's largest oil pipeline in the U.S. at 5,500 miles, carries 3 million barrels of fuel per day over thirteen states between Texas and New York. The attack on its computer equipment forced the company to shut down operations for most of the week, causing fuel shortages at gas stations, resulting in "panic buying" by motorists in six states. In this case, the cyberattack was in the form of "ransomware" by a Russian hacker group that demanded \$4.4 million ransom to restore the system to operation. In the case of Chinese kill switches, the reason would not be payment to restore the solar generation, but to destroy it and throw the country into chaos.

Our country's energy infrastructure is very vulnerable to a number of threats. Physical attacks by terrorists, vandalism, Electromagnetic Pulse (EMP) as well as cyber-attacks. In April 2013, a group of vandals wielding high-powered rifles shot up the Pacific Gas & Electric Company's Metcalf substation. The attack caused \$15 million in damage, but PG&E was able to shift the electrical load to adjacent substation, avoiding an extended power outage and allowing repairs to be made. In December 2022, a perpetrator or perpetrators shot up two Duke Energy substations in Moore County, North Carolina. The attacks left 45,000 utility customers without electricity for four days, while work crews replaced equipment damaged in the attacks. Businesses and schools were closed, and local officials declared a state of emergency and imposed a 9 p.m. to 5 a.m. curfew to avoid looting.

Many electric substations are located in remote areas with no permanent staff and have little security. If terrorists, domestic or foreign, simultaneously attacked enough substations, the result would be a regional blackout. Since the pandemic, supply shortages have led to long lead times on high voltage distribution equipment as well as significantly higher prices. Most high voltage utility transformers are manufactured in China (remember those kill switches?) and lead times from placement of order to delivery are between 120 and 210 weeks. Imagine being without electricity for a year in the middle of a hot summer, or a cold winter, while your cooling and heating depend on that electricity because of government mandates...

Only days after the U.S. identified kill switches in solar farm inverters, power companies found "unlisted parts" on East Asian circuit boards meant to be installed in Denmark's green power grid. This is an issue that will not go away, as long as we are dependent on foreign countries to supply parts for our critical infrastructure.

Addenda #81 sources:

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Addenda #69 – November 2024, Update – June 2025

Re: Ch. 9, Progressive States Climate Policies

*SDG 13 – Take urgent action to combat climate change and its impacts*

*Governor Newsom signs legislation to prevent gas price spikes and save Californians Money.*

*New measure will help prevent price spikes that cost Californians upwards of \$2 billion last year, giving the state more tools to require that petroleum refiners backfill supplies and plan ahead for maintenance.*

Office of Governor Gavin Newsom Press Release, October 14, 2024

In Addenda #69, I detailed California Assembly bill ABX2-1: *Energy: transportation fuels: inventories: turnaround and maintenance*. The bill was applauded by the left-of-center group *Consumer Watchdog*, who called it “a critical consumer victory...”

California Attorney General Rob Bonta (Dem) said, “Californians have been paying too much for gas... Today, we protect hard working Californians...”

Governor Gavin Newsom (Dem) said, “Price spikes have cost Californians billions of dollars over the years... we’re taking action to prevent these price spikes and save consumers money at the pump...”

Californians pay the highest gasoline prices in the continental United States, and this is due to two simple facts. First, California has its own specific blend of fuel, to emit fewer greenhouse gases when it is burned. No other state in the country makes or uses this blend of gasoline, which adds \$0.10 to the cost of every gallon sold in the state. Second, California also imposes some of the highest taxes on gasoline in the country, with sales and excise taxes and fees adding \$1.19 to the cost of gasoline sold in the state. Attorney General Bonta and Governor Newsom have attempted to deflect blame for Democrat policies which have driven up the price of gasoline for their constituents, onto those greedy oil companies. The theme of “corporate greed” always plays well with liberals!

In October 2024, there were seven oil companies operating ten refineries in California that produced CARB approved gasoline and diesel fuel, with a combined refining capacity of 1,606,671 barrels per day. Two days after Governor Newsom signed ABX2-1 into law, Phillips 66 announced its intent to cease refining operations and close its Los Angeles refinery, which would take 139,000 barrels per day, or 8.6% of the state’s refining capacity permanently offline. The company recently announced that it would lay off most of the workers at the refinery in December, after winding down operations in October. The facility has about 600 employees and 300 contractors. Over half of the employees are high wage, hourly workers represented by the United Steelworkers Union.

On April 16, 2025, Valero Energy announced that it would cease operations at its Benicia refinery, which would take another 145,000 barrels per day, or 9% of the state’s refining capacity permanently offline by the end of April 2026. The statement also noted that it is

considering “strategic alternatives” for its Wilmington refinery, which has a capacity of 85,000 barrels per day, or 5.3% of the state’s refining capacity. The Benicia refinery employs over 400 workers and is supported by numerous contractors in its operations. Benicia has a population of 26,400 and relies heavily on the Valero refinery for employment and revenues. “It would be a major hit on the city”, stated mayor Mario Guiliani.

But it’s not just Benicia that will suffer. The closures of the Phillips 66 and Valero Energy refineries will permanently remove 284,000 barrels per day, almost 18% of the state’s refining capacity permanently offline by the end of the year, with no way to easily replace the specially blended fuels mandated by the California Air Resources Board (CARB).

The Benicia announcement brought a quick reaction from state officials. Governor Gavin Newsom urged regulators at the California Energy Commission (CEC) to “work closely with refiners” to make sure Californians have access to transport fuels. He has ordered them to recommend by July, any changes to California's approach that are needed to ensure adequate fuel supply during its energy transition. "I can assure you, beginning last night we had all hands and we're in the process of addressing any anxiety that may be created or any market disruption that may be created by that announcement," reassured Newsom. The anxiety was created by YOU Governor Newsom, when you signed that bill into law six months ago.

The obvious change would be to pass legislation to override the *Energy: transportation fuels: inventories: turnaround and maintenance* bill. Funny thing about free market capitalism... when consumers don’t like how a company does business, they can decide not to patronize that company. (Remember the Bud Lite “pro-trans influencer” campaign and Target “PRIDE” themed children’s clothing boycotts in 2023?) When a company doesn’t like how government is treating them, they can decide not to do business in that location! California has been working toward eliminating fossil fuels for two decades, through stricter environmental and regulatory policies, but apparently no one ever thought the oil companies would push back against their attempts to put them out of business.

House Rep. Vince Fong (Rep) was more direct in his criticism. "This is something that is not created by the market. This is something that is directly caused by Gavin Newsom's poor energy policies."

"Not only did I warn the governor, but the governor of Arizona and the governor of Nevada... they both warned the governor, bipartisan concern, that this was going to lead to shortages and this was going to cause refinery closures along with higher gasoline prices, job losses and not enough energy to power or attract new businesses to the state."

Fong went on to state, “We actually have to begin to reevaluate our entire energy policy of the state, remove the obstacles, remove the mandates, the restrictions and the barriers that are holding us back and provide the incentives and investments to not only build more energy infrastructure but to expand our energy production."

Two weeks before Valero announced the closure of its Benicia refinery, Chevron announced it would lay off 600 employees at its San Ramon corporate headquarters. The layoffs followed last year's announcement that the company would relocate its headquarters, which employs 2,000 workers, to Houston, Texas, over the next five years. Chevron also operates one refinery in San Francisco Bay, which has a capacity of 245,271 barrels per day, or 15.2% of the state's refining capacity, and the 240,000 barrel, 2,900 acre Richmond refinery employs more than 1,200 workers and numerous contractors that support its operations.

Cause and Effect... Progressive Democrat politicians have made California an unfriendly state to do business in, especially if you're in the oil business. At the same time, those same legislators have made California a "safe haven" for criminals, homeless people and illegal immigrants. The state faces a \$12 billion deficit in the 2026 fiscal year, due to state Democrats voting to allow more than 700,000 illegal immigrants to receive free health care in 2023. That plan, part of Democrats goal of eventually providing universal health care to *all* of its 39 million residents, blew up in the governors face costing \$2.7 billion more than anticipated (surprise!?) and resulting in a \$6.2 billion shortfall in the states Medicaid (Medi-Cal) insurance program.

More than 239,500 residents left the Golden State between 2023 and 2024, more than any other state across the country according to Census Bureau data. The states population dropped by more than 500,000 between April 2020 and July 2022 as well. Between the exodus of affluent residents and corporations, tax revenue plunged by hundreds of millions of dollars, and the state budget went from a record \$97.5 billion surplus to a \$56 billion deficit in just one year. At the same time, Gavin Newsom, who had been viewed as a potential 2026 presidential candidate, opened the floodgates for illegal immigration and signed legislation into law reducing penalties on criminals and making it almost impossible to remove the homeless from public streets.

This is Progressive Marxism at its finest. Anti-business and fossil fuel policies mixed in with pro-drug, criminal and illegal immigrant policies. The end result was predictable for anyone other than those in charge or the useful idiots that supported them. If the ultimate goal of Marxism is to destroy capitalism and fundamentally change the structure of society, California Democrats have been doing a damn fine job pushing that agenda forward. Marx and Engels would be very happy at what they have achieved over the past three decades.

Addenda #60 – August 2024, Update – June 2025

Re: Ch. 11, Vehicle “Electrification” by 2050; Impossible!

*SDG 7 - Ensure access to affordable, reliable, sustainable and modern energy for all*

Addenda #60 showed that a number of car manufacturers have started rethinking their commitment to vehicle electrification plans, as sales of battery-powered cars were not increasing as fast as anticipated. 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. America set another record for electric vehicle sales in 2024, as consumers bought 1.3 million EVs. Pro-electric vehicle advocates promoted the “record-breaking surge” in EV sales, but the year-over-year increase was just 7.3%, an enormous drop from the previous year’s 52% growth. The unspoken fact remains that 14.558 million (91.9%) of total sales in 2024 were gas or diesel powered vehicles and 98.6% of all vehicles registered in the U.S. were gas or diesel powered in 2024. <sup>[1]</sup><sup>[2]</sup>

President Bidens 2021 Executive Order 14037 mandated that by 2030, 50% of all passenger cars and light-duty truck sales must be battery electric, plug-in hybrid electric or fuel cell electric vehicles. In 2024, the Biden Environmental Protection Agency announced final standards to further reduce harmful air pollutant emissions from light-duty and medium-duty vehicles starting with model year 2027 and being completely “phased in” by model year 2032. The EPA ruling would effectively force auto manufacturers to produce enough zero-emission, fully electric vehicles, to make up as much as 30 to 56 percent of light-duty sales between 2030 and 2032, to be able to reach the required emissions levels. <sup>[3]</sup><sup>[4]</sup>

The EV Executive Order and the EPA mandate were revoked by President Trump during his inauguration on January 21, 2025. The current “Big Beautiful Bill” making its way through Congress will end tax credits for all new and used EV purchases. These tax credits are the main reason that EV sales were increasing, so the future is looking less positive for electric vehicles and manufacturers. Additional headwinds for EV sales include continued consumer frustration with public charging infrastructure. The 2021 Infrastructure Investment and Jobs Act gave states \$5 billion over a five year period to deploy EV charging infrastructure along the national highway system, public roads and in other public locations. States received an additional \$2.5 billion to allocate towards charging infrastructure as they saw fit.

Due to U.S. Department of Transportation bureaucracy, final rules for the program weren't available until February 2023 and the permitting and approval process was slow and complicated. As of February 2025, just 1,000 projects had been awarded federal grant money through the National Electric Vehicle Infrastructure (NEVI) Formula Program and only 57 charging stations had opened across 15 states. Charging stations that were operational were often unreliable. In the 3<sup>rd</sup> quarter of 2024, 19% of visits to public chargers resulted in a failed attempt to charge the vehicle, with the lowest-performing charging provider having successfully charging just 58% of the time. <sup>[5]</sup><sup>[6]</sup>

Note: The Trump administration “paused” future NEVI funding in February.

General Motors announced in March that they were investing \$888 million in its Tonawanda Propulsion plant in Western New York, to support the production of the company's sixth generation of small-block V-8 gas engines. GM also announced \$854 million would be allocated to other plants for the same purpose. Previous agreements to invest hundreds of millions of dollars in EV production have now shifted production back toward internal combustion engines. <sup>[7]</sup>

Honda also announced plans in May it will cut back on its previous investment plan for electric vehicle technology in response to its disappointment in the growth of the EV market, even though Honda Global still plans to achieve a goal to "achieve carbon neutrality for all products and corporate activities" by 2050. The cut in investment towards all electric vehicles comes to \$20.558 billion U.S. dollars as Honda now expects global EV sales to fall below its former target of 30%. Instead, Honda plans to invest more money into production of hybrid electric vehicles which combine a conventional internal combustion engine with one or more electric engines, using stored electricity from regenerative braking. <sup>[8]</sup>

Although global EV sales are steadily increasing, U.S. sales have been falling far behind those of Europe and China. Infrastructure for EVs in the U.S. is much less developed than the infrastructure for gas vehicles, which took decades to build, and many consumers are hesitant to purchase EV's due to the limited number of available charging stations. Consumers have also seen the problems EV owners had during extreme weather conditions, when cold weather severely reduced the range of electric batteries and charging during cold weather became problematic. Utility companies are still years away from being able to supply all the electricity required to support the electrification of vehicles, let alone houses and businesses.

Now that government subsidies for electric vehicles appear to be ending, the availability of electric vehicles will be beyond what most consumers can afford. The reduction in selling price due to tax credits were the only reason that many buyers could afford EVs. Even the most enthusiastic middle-income green energy supporters will have a difficult time affording an electric vehicle, especially if auto manufacturers continue to reduce investments in them. Price reduction over time is only achievable when large scale purchasing and production occurs with any product. Until this occurs, electric vehicles will remain a "market niche" with limited production and sales.

#### Addenda #60 Update Sources

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6. Is Public EV Charging Infrastructure Making Progress?, J.D. Power, December 20, 2024
7. GM to invest \$888 million in Tonawanda Propulsion Plant; GM News, May 27, 2025
8. Honda Bucks Trend And Rolls Back EV Plans In Favor Of Hybrids; Forbes, May 20, 2025