



Global Technical Training Services, Inc. Newsletter



### The State of the Industry

Sid Crouch, GTTSi Chief Technical Consultant

Our electric companies use similar methods to generate electricity, but each models their services based on the unique needs of their customer base. Where you live determines your electricity rate. Whether your state is regulated or deregulated, your electricity costs are affected by many variables including fuel prices, availability, usage patterns, regulatory policy, and infrastructure investment costs. In addition, electric companies typically cannot recover costs when they are incurred (e.g., after a hurricane, tornado, flooding, ice storm). Instead, they are required to present their case to their respective regulatory agency. Usually, the agency will require them to spread out these costs over the physical life of the investment, sometimes as long as 70 years (see NV Energy story).

While food inflation has eased over the past several months, electric rates have not, rising 5% from last year and about 30% since 2021. Much of this increase can be attributed to investments in our aging infrastructure – modernizing the grid to accommodate transition to renewables, replacing equipment to handle extreme weather, and preparing for the increase in generation capacity anticipated for AI. According to the Edison Electric Institute, total spending by investor-owned electric utilities from 2022 through 2024 is projected to jump by 11% to \$167 billion (**about \$510 per person in the US**). The average cost of electricity is 16.68 ¢/kw-hr. Hawaii has the highest at 45.25 ¢/kw-hr. North Dakota has the lowest at 10.44 ¢/kw-hr. Electricity in the US is still a bargain when compared to Europe where it is 28 ¢/kw-hr (**France**) to 63.73 ¢/ kw-hr (**Italy**).

*I welcome your comments or questions - [sid.crouch@gttsi.com](mailto:sid.crouch@gttsi.com)*

## Highlights

Nuclear Power Bill Passes in House and Senate

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Restart Efforts for Palisades Continues

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New EPA Rule is a No-Win Plan

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NV Energy Seeks Funding for Greenlink

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New SMR Facility Proposed in Norway

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Did You Know?

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GTTSi Job Board Update



GTTSi  
807 Bypass 123 – Suite 31  
Seneca, SC 29678  
864.882.3111  
[ginfo@gttsi.com](mailto:ginfo@gttsi.com)  
[www.gttsi.com](http://www.gttsi.com)

## NUCLEAR POWER BILL PASSES HOUSE AND SENATE

With nuclear plants delaying planned decommissioning (Diablo Canyon in California) or working to restart (Palisades in Michigan-see below), the importance of nuclear power is becoming more and more clear in the United States. On a vote of 88 to 2, the Senate recently passed the “Nuclear Power Bill”, passed earlier by the House of Representatives on a 393-13-1 vote. This legislation is expected to accelerate the process for licensing new reactors and reduce the fees that companies must pay to obtain the licensing. This bill will also require the NRC (***Nuclear Regulatory Commission***) to provide a report on ways the licensing process could be simplified and how to shorten the environmental review process.

Most Representatives and Senators believe this bill is critical for the nation’s nuclear power sector and that it will also accelerate development of SMRs (***small modular reactors***). A few; however, see passage of the bill as working against improvements in nuclear safety and security. Edwin Lyman, nuclear power safety director at the Union of Concerned Scientists, expressed such thoughts. He believes the provision changing the mission of the Nuclear Regulatory Commission to prevent it from “unnecessarily” limiting nuclear power will make the nation’s nuclear fleet less safe.

After announcement of the bill’s passage, a White House spokesperson did not respond to questions asking if President Biden would sign the bill, but national climate adviser Ali Zaidi posted on the social platform X that he was in favor of its passage. 🌐

### RESTART EFFORTS FOR PALISADES CONTINUES

Holtec International recently hosted an “open house” at Palisades Nuclear Plant near Covert, Michigan (pictured below, credit: Holtec International). The Palisades plant ran for half a century, providing over 800 MW of carbon-free electricity before shutting down in May 2022. After the plant was decommissioned, Holtec International purchased the 432-acre plant site from Entergy and has been working ever since to restart the plant.

The plant will be required to pass safety guidelines put in place by the Nuclear Regulatory Commission (NRC) who assess plant equipment weekly with no set timeline for completion. In the meantime, Holtec has been recruiting employees. Some former employees have come out of retirement to support the restart, and to date they have hired 160 employees with plans for a total of four hundred employees.



## NEW EPA RULE IS A NO-WIN PLAN FOR THE NATION’S ELECTRICAL SYSTEM



The Environmental Protection Agency (*EPA*) recently issued a 1,020-page rule to control carbon dioxide emissions from existing coal-fired power plants and new natural gas-fired power plants. Many refer to this new rule as the Clean Power Act 2.0 due to its similarity to the 2015 Clean Power Plan. The electrical industry believes this rule jeopardizes the reliability of the electricity grid and will drive up electricity costs further from the ~30% increase since 2021.


While the EPA claims this rule will not cause reliability problems, their prediction model assumes new sources of electricity can be easily built to replace the retiring coal-fired power plants and new transmission lines can be added without issue. The reality is that the U.S. has a backlog for new projects due to the number of interconnection applications “in the queue” (*see the GTTSi November 2023 Newsletter*). This backlog has delayed the application process such that the average timeframe is over 2 years.

Coal is one of the most dependable sources of electricity. Wind and solar are the least dependable. Our electricity grid operators say that coal-fired power plants are 3X more dependable than wind facilities and 6X more dependable than solar. Coal-fired power plants are also more dependable than battery storage because batteries can produce electricity for only a few hours at a time. Coal-fired plants have at least a 30-day supply of coal on hand. PJM (*Pennsylvania, New Jersey, Maryland*) Interconnection Company manages the electric grid in all or part of thirteen states plus the

District of Columbia and is responsible for ensuring a reliable supply of electricity for more than sixty-five million people. According to the PJM, the power plants targeted by this new rule “provide a critical reliability role” during the very years when significant increases in the demand for electricity are projected. This new rule may work to drive premature retirement of coal units that could provide essential reliability services.

The EPA rule gives coal plants three no-win choices:

1. Shut down the coal plant before 2032, **or**
2. Burn a mix of natural gas and coal (***This would require modifying the plant and adding natural gas pipelines; FERC would have to approve more than thirty new gas pipeline projects each year to satisfy the natural gas demand***), **or**
3. Install carbon capture and storage (***CCS***) technology by 2032 (***no coal plant in the world has shown that it can meet EPA’s 90% emissions reduction requirement or meet the deadline set by the EPA for building a CCS project***)

To date, twenty-seven states have filed suits to stop the EPA from implementing this rule until it can be overturned by the courts or disapproved by Congress under the Congressional Review Act. 

## NV ENERGY SEEKS FUNDING BEFORE GREENLINK BECOMES OPERATIONAL

Founded in 1906, NV Energy is a subsidiary of Berkshire Hathaway Energy and provides electric and natural gas services in that state of Nevada. The company manages two principal subsidiaries: Nevada Power Company and Sierra Pacific Power Company, which together ensure the generation, transmission, and distribution of electric power throughout the state. It operates within a service area covering over 44,000 square miles, including major cities like Las Vegas, Reno-Sparks, and Henderson. The company supplies electricity to approximately 2.4 million customers and natural gas to over 145,000 customers in the Reno-Sparks area

In March 2023 FERC (**Federal Energy Regulatory Commission**) approved the financial funding for NV Energy to build their Greenlink transmission project, despite ratepayers' concerns. This decision came at a critical time for transmission development in the United States as a build-out of the transmission system across the nation is needed to bolster grid reliability and provide grid access for renewables.

NV Energy's Greenlink project would create a 525-kV triangular transmission network for Nevada (*see picture next page*). Nevada's PUC (**Public Utility Commission**) approved the project in 2022, with the western transmission leg (**Greenlink West**) planned for service in late 2026 and the northern portion (**Greenlink North**) slated for operation in 2028.

Greenlink West, planned as the first step or phase of the project, will be a 470-mile-long



*Image Credit: nvenergy.com*

transmission line carrying up to 4,000 megawatts of electricity. Greenlink North, planned as the second step or phase of the project will be a 235-mile -long transmission line connecting Robinson Summit in White Pine County to Fort Churchill near Yerington, passing through Eureka, Lander, and Churchill Counties while connecting Lyon, Storey, and Washoe Counties.

The Greenlink Project was originally estimated to cost \$2.5 billion, and NV Energy's CEO promised that "Nevadans will not be asked to pay for this investment until at least five to six years down the road."

The project is being built on public lands and therefore is under the control of the Bureau of Land Management (**BLM**). Several Conservation groups, like *Basis* and *Range Watch* convinced the BLM and NV Energy to consider the potential impact on desert ecosystems, such as increased risk of wildfires, as well as threatening species like the Mojave Desert Tortoise, the endangered Joshua Tree, and the Amargosa Toad, which was recently recovered from extinction. This *(continued)*

has resulted in a delay to the project of over a year. Now NV Energy claims the project cost is estimated at \$4.2 billion (**not including monthly interest carrying costs and a credit downgrade by one of their subsidiaries**), plus another \$1 billion they need for capital projects (**natural gas peaker plants at a cost of close to \$600 million and to purchase more than one gigawatt each of solar power and battery storage capacity at an initial cost of about half a billion dollars**). These capital projects are needed to provide a balanced portfolio to reduce NV Energy's reliance on expensive and unreliable energy

markets. Therefore, NV Energy is seeking financial support from their customer base to recoup costs before Greenlink comes online and recover the cost of depreciation. "NV Energy anticipates recovering the costs of this project over 70 or more years, thus reducing the impact on customer rates," said spokeswoman Meghin Delaney. But some experts say the utility is not making a concession to ratepayers, as depreciation rates for NV Energy's transmission lines are already close to 70 years, according to a 2023 filing with FERC. 🌐



Image Credit: RTOinsider.com

## Nuclear Power Facility Proposed - Northeastern County of Norway

The Norwegian energy supplier company, **Norsk Kjernekraft**, has submitted a proposal to the Norway Ministry of Energy for an assessment to construct multiple **SMR's (small modular reactors)** in the northeastern county of Finnmark, where a research reactor once operated.

The nuclear power plant proposed would have a capacity of up to 600 MWe and an annual output of up to 5 Twh (**terawatt hours**) - enough to triple the current power available in Finnmark. Currently, the electricity generated in Finnmark comes from hydro plants and wind turbines. During periods of low wind, Finnmark is dependent on power being supplied from other parts of Norway and Finland. A nuclear power plant would be able to provide electricity, independent of weather conditions, which in turn would be a significant improvement in the reliability of power throughout northern Scandinavia.



*Photo Credit: finnmark2007.com*

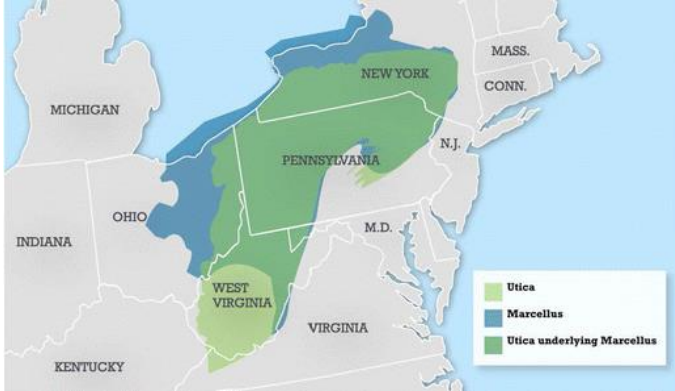


The scope of the proposal is limited to assessing what effects construction, operation, and decommissioning of the power plant would have for society and the environment. Assuming approval of the proposal by the Ministry of Energy, an environmental impact assessment would begin.

Norsk Kjernekraft said it intends to utilize a significant part of the excess heat from the plant "as an input factor for industrial companies, food production, district heating and others". It said the power plant can enable the establishment of local industry, for example, within data centers, hydrogen production, mineral extraction, green shipping, and food production.

Norsk Kjernekraft has plans to establish multiple SMR facilities in various parts of Norway. In addition to Finnmark, they have submitted proposals for power plants in the municipalities of Aure and Heim. These plants are expected to contribute significantly to Norway's power production, with each plant potentially increasing the country's electricity output by about 8%.

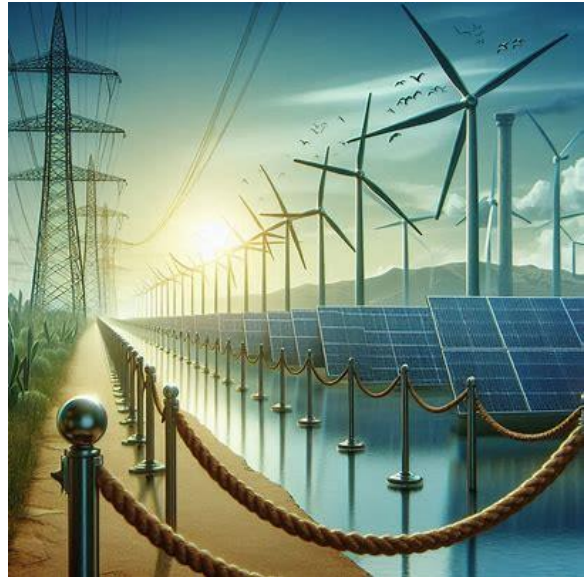
## DID YOU KNOW?



***Marcellus and Utica Shale Formation***  
***Image Credit: Marcellus Shale Coalition***

After six years of construction and more than double its original cost estimate, the East Coast natural gas pipeline has begun operation. Its pathway goes through 11 counties in West Virginia and six in Virginia, with three compressor stations in West Virginia. The \$7.85 billion project has withstood weather delays and a maze of court and construction permit challenges and regulatory scrutiny. It is designed to meet the growing energy demands in the South and mid-Atlantic by transporting gas from the Marcellus and Utica fields in Pennsylvania and Ohio.

There are several obstacles that a “clean energy project” must overcome to obtain an interconnection queue for their project. One large obstacle is the GIQ (generator interconnection queue). Today, almost every regional transmission organization (RTO) and independent system operator (ISO) has a significant backlog in their GIQs. In fact, about 70% of the “clean energy” projects submitted are ultimately withdrawn due to the long wait times (years for some RTOs or ISOs), high cost for new transmission lines, and other upgrades that may be required to handle the increased capacity that their specific project will place on the grid. This has created a significant barrier to deploying renewable energy projects, which in turn has stymied the nation’s green energy plans.



***Solar Field Construction in China***  
***Image Credit: Yuan Hongyan / VCG via Getty Images***

In the desert area of northwest China, in the province of Xinjiang, the world’s largest photovoltaic (PV) solar plant has come online. This 5 GW (gigawatt) facility sits on ~494,000 acres (about half the area of Rhode Island) and was built by the China state-owned Power Construction Corporation. China now has the top three solar power plants in the world. The other two, located in western China, are the 3-GW Ningxia Tenggeli, built by Longyuan Power Group, and the 3-GW Golmud Wutumeiren, built by China Lufa Qinghai New Energy. According to the IEA (International Energy Agency), China has increased its solar capacity by 116% from 2022 to 2023.

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GTTSi  
807 Bypass 123 – Suite 31  
Seneca, SC 29678  
Phone: 864.882.3111  
Fax: 864.882.1026  
[ginfo@gttsi.com](mailto:ginfo@gttsi.com)

Marshalla Schile  
President  
Phone: 864.882.3111  
[marshalla.schile@gttsi.com](mailto:marshalla.schile@gttsi.com)

Clay Schile  
Vice-President  
Phone: 864.882.3111  
[clay.schile@gttsi.com](mailto:clay.schile@gttsi.com)

Chrissy Mulay  
Technical Staffing Manager  
Phone: 864.506.4647  
[chrissy.mulay@gttsi.com](mailto:chrissy.mulay@gttsi.com)

Johnathan Parks  
Technical Staffing Specialist  
Phone: 404.345.6096  
[Johnathan.parks@gttsi.com](mailto:Johnathan.parks@gttsi.com)

Debbie Scott  
Administration  
Phone: 864.882.3111  
[debbie.scott@gttsi.com](mailto:debbie.scott@gttsi.com)

Sid Crouch  
Chief Technical Consultant  
Phone: 843.861.0431  
[sid.crouch@gttsi.com](mailto:sid.crouch@gttsi.com)

LD Holland  
Senior Human Performance  
Consultant  
Phone: 864.882.3111  
[ginfo@gttsi.com](mailto:ginfo@gttsi.com)

Scott Poteet  
NRC Exam Developer  
Phone: 864.882.3111  
[ginfo@gttsi.com](mailto:ginfo@gttsi.com)

## GTTSi Job Board

GTTSi has been providing professional services to the energy and nuclear industry since 1980. We are an MWBE (*minority woman-owned business enterprise*) and have served over 80% of the US commercial nuclear facilities, 8 Federal agencies and prime contractors, and one foreign government. If you are qualified and interested in any of the job opportunities listed below, please contact us at [ginfo@gttsi.com](mailto:ginfo@gttsi.com) or call **864.882.3111**.



- BWR Instructor, Cooper Nuclear Plant
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**P.O. Box 307  
Hartsville, SC 29550-0307**

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CITY, STATE, ZIP