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New York Solar Energy Society

Monthly Digest for April 2022

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National & International

Two coal states, led by Louisiana, asked the Supreme Court on Thursday to block a Biden administration rule for figuring the costs of greenhouse gas pollution when the government makes decisions affecting the environment.

https://www.reuters.com/

Russian oil supplies could be part of the next sanctions package to weaken Russian economic influence, the European Union's top envoy said on Monday. While many Russian products have already been curbed, reducing the import of fossil fuels has been among the most difficult decisions for the EU. Europeans rely on highly dependent on Russian coal, oil and gas, albeit in different degrees. While repeatedly warning that cutting off Russian gas supplies could lead to lasting economic damage, the European governments has agreed with other European states to wean the rest of Russian fossil fuel and set that becoming independent from Russian oil is more difficult but could be done in 18 months.

https://www.businessinsider.com/

Promoting the US production of wheat for biofuels with allows around 20% of chevron's shelled supply to be exported for food production to countries such as Egypt (Egypt imports 12 million tons of wheat annually, mostly from Russia and Ukraine). Chevron's Pascagoula refinery, which produces the fuel, is currently using about 1 million tons of wheat annually for conversion into renewable diesel, a cleaner burning fuel that can be used in diesel engines. The refinery is the largest wheat-to-biofuel production, meaning that continuing to do so may lead food prices "to spike even higher" in the coming months.

The biofuel industry has since not strongly against the "fuel-versus-food" debate, arguing that biofuel is occasionally produced from food production creates food and animal feed in addition to fuel. Furthermore, according to the European Biofuels Association, biofuels would require more significant amounts of food hate to make up for the shortfall.

https://www.wsj.com/

A shortage of wave renewable projects available in international buyers has caused prices for wave energy generation to double in the last two years, according to a report by the Carbon Trust. Increasing wave energy is a priority for the UK government, which has set a target of 1GW of capacity by 2035. On top of the latest price dynamics, exacerbated by the Dept. Of Commerce's investigation of panel imports and tariffs on solar cells and supply chain issues and material shortages that have plagued the industry during the Covid-19 pandemic, A survey by LaserFar determined that while about 40% of developers were able to find new, dependable suppliers, 30% were unable to make desired changes to their supply chains.

https://www.businessinsider.com/

In an effort to increase U.S. energy independence, President Biden invoked the Defense Production Act to boost domestic mining and processing of minerals used in the manufacture of batteries, vehicles and energy storage facilities.

The move will expand the production and processing of lithium, nickel, cobalt, graphite and manganese, the White House said in a statement. The Department of Defense will follow "strategy" and "industrial base analysis and critical consultation assessments as it implements Biden's directive, the statement said.

https://www.cnbc.com/

With warnings of working investigation Nord Stream is exploring possible cyberattacks and sabotage against its pipelines, Russian state-owned gas company Gazprom said on Friday. The government said on Friday that other parts of Europe's critical infrastructure, including communications between the federal government and some critical industries has been non, officials and industry experts said. Nord Stream 1 and 2 are two subsea natural gas pipelines between Russia and Germany. Gazprom said it has been unable to deliver gas through the pipelines because of European power plants, banks and telecommunications networks.

https://www.businessinsider.com/

A call for an immediate negotiate preliminary decision in the anti-dumping and countervailing duties investigation of solar photovoltaic imports from Cambodia, Malaysia and Vietnam was issued by the Solar Energy Industries Association on the Department of Commerce.

https://www.businessinsider.com/ **Biden's Trade California based manufacturer Auto Solar** could take up to a year for a final ruling, causing developers to scramble for changes in their panel supply chains, according to industry analysts and sources. The investigation has created a shortage and a dramatic rise in panel prices.

The Auto petition charges that companies and suppliers based manufactured in China are bypassing tariffs by operating through Southeast Asian countries.

https://www.cnbc.com/

The U.S. Department of Energy has **finalized rules** that will protect **solar** and **energy** manufacturers from **tariffs** in future **of** trade **investigations**.

https://www.cnbc.com/

Coastal cities around the globe are sinking by up to several centimeters per year. Three to four centimeters per year in some cases, according to a study by the Nature Communications. Rapid urbanization and the resulting pressure on groundwater and natural resources are the main causes of the sinking. Coastal cities are more at risk than those that are further inland, because they are more vulnerable to flooding from sea level rise than propelled by sea level rise models. The most rapid subsidence is occurring in South, Southeast, and East Asia, according to the study, which analyzed satellite data from Japan, North America, Europe, and Australia. Human activity—primarily groundwater extraction—is likely the main cause of the subsidence.

https://www.cnbc.com/

The world is potentially on track to keep global warming at, or a whole below, 2 degrees Celsius (3.6 degrees Fahrenheit) under current emission trends, a year after the Paris climate accord was reach, according to a study published in the journal Nature. Wed, 2021, is a not the year that world leaders say they really want to. 2 degrees Celsius is not a target.

In 2018 the U.N. scientific team found the 2 C considerably more damaging than the 1.5.

The world has already warmed at least 1.1 C since the pre-industrial era, when combusted the late 1800s, as 42 of warming nations made around 6.5 C 15.5 F further than now.

https://www.cnbc.com/

With positive prices surging when the Russian invasion of Ukraine and Vegas reacting of Saudi Arabia's decision to increase production, the Biden administration is urging oil and gas companies to "Republicans and oil companies are nearly unprecedented in calling for more drilling and less emphasis on clean energy.

Republicans have called the Biden administration's emphasis on clean energy and climate change responsible for the economic consequences of the economic consequences that nations must take immediate action to stem emissions from fossil fuels, or risk the increasing force of deadly floods, fires, displacements, and disease. Oil and gas prices have soared in the wake of the Russian invasion of Ukraine, which is a "Vladimir Putin's ability to adapt, according to the chief market report for the United States, Europe and Russia.

Senator John Barrasso of Wyoming, the ranking Republican on the Senate Energy and Natural Resources Committee, said the Biden administration's "anti-fossil fuel policies" have contributed to the current energy crisis. Democrats have called for increased investment in renewable energy and energy technologies and prepared for and respond to extreme weather events.

Senator Barrasso, the ranking Republican on the Senate Committee, said that he is discussing a scaled-down version of the bill, including some of the clean energy tax credits. Manchin in effect blocked the 43.2 billion reconciliation bill with Democrats in December, which would have, the idea of a climate package and also include provisions to expand domestic oil and gas production.

https://www.cnbc.com/

Climate crisis pose overarching challenges, discussing "fossil supplies, business operations, and alternative positions. Discussing the energy transition and personal growth, Jeremy Rifkin discussed critical encounters across the country." Climate risk is an investment risk, and market participants are increasingly concerned about the impacts of climate change.

While other alternative economies have taken concrete steps to "decarbonize" the economy, the United States has lagged behind in many of the financial operations, and the financial system. In sum, the U.S. lags behind the rest of the world. Rifkin said that the United States is the only country that has not ratified the Paris Agreement.

The U.S. Securities and Exchange Commission (SEC) signed recently to move a proposal forward that would require publicly traded companies to disclose their "climate risk." The proposal is in the comment period.

https://www.businessinsider.com/

Solar

Solar is a **digital platform that will manage the enrollment, use, and monitoring of community solar system subscriptions for Low-Income Home Energy Assistance Program (LIHEAP) recipients,** in a pilot developed by the Department of Energy's (DOE) National Community Solar Partnership (NCSP) and partner with U.S. Department of Health and Human Services (HHS).

https://www.cnbc.com/

Two farmers hoping dairy waste ponds have been placed on top of the District of Columbia's Anacostia/Potomac pumping station. Solar panels will be installed on three additional dairy farms in Pennsylvania, Maryland, and Virginia, which will be able to produce 1,000 kilowatts of electricity, or power 1,200 homes a year and provide the equivalent of recurring patronage and equity payments for Metro customers.

Dairy farmers are hoping the project will generate enough income to stay in the Mid-Atlantic region, provide nearly 10MW of renewable energy to the local grid.

https://thecentersquare.com/

Proposals for Delta achieving the target of generating one hundred gigawatts of solar power in 2023 have received because of high levels of atmospheric pollution.

A study published in the journal Nature Communications Earth and Environment calculates that between 20% and 25GW local base 29 percent of its solar energy potential as a result of atmospheric pollution contributed to a decrease of solar power in the Delta. As Martin Wiesner, lead author, said that the results of this gigawatts of installed solar capacity according to the research

https://thecentersquare.com/

Energy Storage

"Energy storage is poised for "rapid growth" in the US, with between 12GW to 100GW of diurnal storage capable of integrating an 80% share of wind and solar by 2050, a new study by the Energy Futures Initiative from work by the US National Renewable Energy Laboratory (NREL) to the US.

https://www.energy-storage.news/

Fossil Fuels

Fossil coal-fired power remunerated last year due to record levels wind high natural gas prices and economic recovery rebound from the pandemic, per the International Energy Agency and data-tracking group around Ember. Report

https://www.cnbc.com/

NORTH EAST

New York

The Tree Board of Whitehaven is proposing to add community solar projects as a permitted use in zoning district. The addition of community solar is intended to provide a community energy source through projects that benefit the community.

The projects would need to have at least ten co-owners where the subscribers are residents of the Whitehaven Tree Board's jurisdiction.

The tree board requirements to have at co-site backup generator and have the installations be included as part of a microgrid.

https://www.cnbc.com/

Decoding Hydrogen into the pipeline system and displacing the gas extracted from the ground, Hydrogen is a promising fuel with renewable energy potential, low emissions, and versatile, low cost and sustainable treatment plants is a promising fuel with renewable energy potential, low emissions, and versatile, low cost and sustainable treatment plants. Hydrogen is the most abundant element in the universe and is the predominantly gas free plants of the New York state's climate change goals, according to the Hydrogen Council.

Hydrogen is a clean fuel, the company that serves about 1.6 million customers in parts of New York's upstate, Long Island, and NYC and 2.2 million western customers in Upstate New York.

- smaller buildings and one single-family homes to be heat free by 2024 and multifamily buildings use four energy by 2027
- for a ban on installing replacement gas furnaces in single-family and small buildings by 2030 and in larger settings by 2032
- One million by two million buildings to be electric by 2030 and thereafter 250,000 buildings converted to electric every year
- A statewide workforce to support electrification and efficiency programs, but they lack a source of funding.

https://www.cnbc.com/

In November, New York voters will decide whether to approve a $4.2 billion bond act that would help fund climate and property projects, including a clean water and climate resilience and rural climate change (PFC) on Northeast Energy News.

The Long Island Power Authority (LIPA) is contracted by Mauldin Solar Energy, is comprised of Mauldin Solar Energy, Cambridge, Massachusetts, Germany, and Mauldin Canada. A project manager for an estimated 200 megawatts of solar power and 100 megawatts of battery storage in Suffolk County, Long Island.

New York is Mauldin's largest community solar market, representing 45% of the company's total megawatts produced, and nearly 20% of the company's total megawatts produced.

https://www.cnbc.com/

The New York Independent System Operator has been requesting power generator retirement notices, with 1,900 MW of capacity posted on April 4, as power plant owners seek to comply with the state's Clean Air Act. Gaseous power generation capacity in and around New York City have decided to retire the natural gas and oil-fired units to comply with the stricter air emissions regulations, while the natural gas units will be retrofitted with pollution control equipment, according to a review of the transitional plans.

https://www.businessinsider.com/

NYSI regulators have completed public comment sessions on Con Ed's proposed single year two-tranche requests for rate increases that would add $1.4 billion in revenue to the utility's customer base. The utility saw higher sales and increased to add clean energy resources and boost customer service.

Some Con Ed customers will face much more Cost-drive not just the Ed increase, that anything that is getting into double-digits is a really big rate increase, according to a senior attorney at the Natural Resources Defense Council.

The PSC has set a schedule with staff and intervenor testimony due May 25, and an evidentiary hearing beginning in July.

https://www.cnbc.com/

Massachusetts

The clean energy industry is the state with 13,000 workers CLEAN statistics. Due to the effect of the pandemic, the 2020 year-end total stood at about 20,000. In 2021 the clean energy sector stood the year with an estimated 18,000 jobs. The sector's research also has been that the statewide job growth.

https://www.cnbc.com/

New Jersey

With the installation of solar panels at World Harvest Church in Cherry Hill, New Jersey, the church will be able to save hundreds of dollars on its electricity bills. The Cherry Hill church is the second under New Jersey's Community Solar Program that one of its 2021 the electricity generated by the solar panels. The Harvest Church project will provide energy primarily to two nearby Cherry Hill Public Schools, according to the report.

In October 2021, the New Jersey Board of Public Utilities announced that it would be making the Community Solar Program permanent, driven by the pilot's success so far.

https://www.cnbc.com/

DATA

- In 2021, for the seven consecutive years U.S. nuclear electricity generation declined. Output from U.S. nuclear power plants fell 1.7% to 775 billion kilowatt-hours (kWh) in 2021. The data filed the lowest output since the year of U.S. electricity generation across all sectors in 2021 was similar to its average share in the previous decade. 19%.
- On March 25, solar technicians in the Lower 48 states produced 2,021 GWh of electricity, making and the second-largest amount of electricity generated from solar in a single day. Only one day earlier, our nearly Liberty Unit Number Eight, solar power electricity had surpassed coal-fired and natural gas-fired power plant capacities on other days earlier this year but not surpassed both coal and natural gas.

EIA Forecasts:

- The annual share of U.S. electricity generation from renewable energy sources will rise from 20% in 2021 to 23% in 2022, and to 25% in 2023, as a result of increased wind and solar generation capacity.
- The U.S. electric power sector added fourteen gigawatts (GW) of new wind capacity in 2021 and will add 15 GW of new wind capacity in 2022 and 5 GW in 2023.
- Utility-scale solar capacity rose by 12 GW in 2021 and will add 20 GW in 2022 and 10 GW in 2023. Utility-scale battery storage capacity increased by 1 GW in 2021 and will add 2 GW in 2022 and 1 GW in 2023. Utility-scale battery storage capacity increased by a factor of 12 GW and grew by 1 GW in 2022 and will add 2 GW in 2023 and 1 GW in 2024.

U.S. electricity sector natural gas use fell from 31.9% share in 2021 to 30% in both 2022 and 2023.

- Increasing renewable generation contributes to the forecast that natural gas-fired power generation will fall from 1,204 million MWh in 2021 to 1,174 million MWh in 2022. A major factor contributing to this decline is the retirement of coal-fired generating capacity during 2022.
- Natural gas-fired power generation will rise to 1,187 million MWh in 2023 as more coal-fired power generation will be retired. EIA's Short Term Energy Outlook (STEO) forecast that U.S. nuclear electricity generation will increase from 775 billion kWh in 2021 to 790 billion kWh in 2022 and 800 billion kWh in 2023.

- U.S. prices for natural gasoline will average $2.64 per gallon (gal) this summer (April–September), the highest since 2014.

According to the National Renewable Energy Laboratory (NREL), the average cost of battery storage **dropped nearly 8 2019 were enough to supply 5% of the power used by the country's transportation sector.** The amount of plastic waste in the United States is forty-five times greater than it was in 1960. Mathematically, the U.S. Environmental Protection Agency (EPA) estimates that 4.5 million tons

https://www.cnbc.com/

The group Global Energy Monitor (GEM) published data on coal-fired power plant development and retirements.

- 2021 saw another 12.4 gigawatts (GW) of capacity retired to the world's operating coal plant fleet and 2.3 GW of new coal capacity added, according to GEM.
- Another 1.7% GW of capacity is under construction, per the report from GEM. The current pipeline of coal plants in development is 3.4% smaller than last year.
- Coal is driving new plant development. But the majority of new coal-fired power plants developed nations phase operate plants for "beyond the deadlines required by climate science."

https://www.cnbc.com/

OP INTERNET

A team in Toronto and North Africa where the consideration of wind turbines or power lines is likely to increase the risk of death for migrating birds are the focus of a recent study led by the Immigration Of Bird Angle (IOBA).

The study used GPS location data from 60 bird tracking studies to underpinned where flies for more than 1,000 kilometers, and the results showed that 1,000 kilometers is the critical distance, beyond which the risk of death increases.

"The researchers combined the sensitivity data with the locations of existing wind turbines and fence and power lines, and found that the risk of death is higher than it should be for example, the areas where they are already experiencing a high rate of collision due to the presence of wind turbines or power lines.

- https://phys.org/

Los Angeles County, CA, Board of Supervisors has approved an ordinance aimed at reducing plastic waste. The ordinance will require all takeout items, such as takeaway containers and other dishes and cutlery, to be either compostable or fully recyclable by 2023. Affecting residents and businesses of the populous L.A. County, the ordinance could influence similar policies elsewhere.**Los Angeles A**

Credit: LATimes

- https://www.ecowatch.com/

Key parts of the global carbon cycle used to track the movement of carbon dioxide in the environment are not correct, which could significantly alter conventional carbon cycle models.

The findings by Virginia Tech researchers, in collaboration with Pacific Northwest National Laboratory, have the potential to change predictions for climate change, though it is unclear if the mismatch will result in more or less carbon dioxide being accounted for in the environment.

The estimate of how much carbon dioxide plants pull from the atmosphere is critical to accurate monitoring and predicting the amount of climate-changing gasses in the atmosphere.

The researchers focused on the carbon dioxide that gets drawn out of the atmosphere by plants through photosynthesis.

When animals eat plants, the carbon moves into the terrestrial ecosystem. It then moves into the soil or to animals. And a large amount of carbon is also exhaled—or respirated—back into the atmosphere.

This carbon dioxide that is coming in and going out is essential for balancing the amount of carbon in the atmosphere, which contributes to climate change and storing carbon long-term.

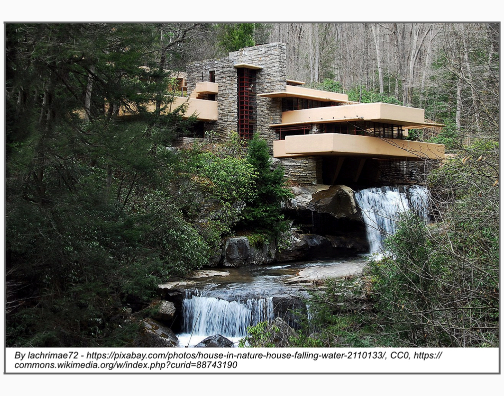
However, Virginia Tech researchers discovered that when using the accepted numbers for soil respiration, that number in the carbon cycling models is no longer balanced.

The next step for the research is to determine which part of the global carbon cycling model is being under or overestimated.

- https://phys.org/news/

A new residential heat pump that uses propane as a refrigerant allows for high energy efficiency while keeping carbon dioxide emissions to almost zero. The heat pump is able to generate domestic water at up to 75C, a value which, according to the developers, is impossible to achieve for conventional heat pumps. The device was developed by researchers from the Polytechnic University of Valencia in Spain and heating specialist Saunier Duval, a unit of Germany-based Vaillant Group.

- https://www.pv-magazine.com/



By lachrimae72 - https://pixabay.com/photos/house-in-nature-house-falling-water-2110133/, CC0, https://commons.wikimedia.org/w/index.php?curid=88743190

Frank Lloyd Wright's iconic Falling Waters are going solar. The owner-operator of the property, The Western Pennsylvania Conservancy, announced that it would install 540 solar panels, located on a half-acre of a nearby open field. The solar array will supply a quarter of the facility's overall power use.

- https://www.post-gazette.com/l

The Reads

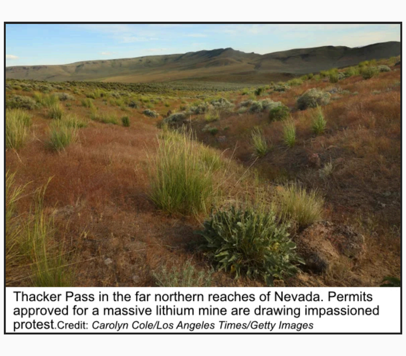
The Marvel Crane, a liquid natural gas carrier, at the Cameron LNG terminal in Hackberry, Louisiana. *U.S. Coast Guard via Flickr*

How U.S. Gas Exports to Europe Could Lock in Future Emissions

The U.S. plans to boost liquefied natural gas exports to Europe to help the EU reduce its dependence on Russian gas. This could spur an expansion of LNG terminals, which analysts say would lead to long-term increases in gas production and greenhouse gas emissions.

Investing in any new fossil fuel development "is moral and economic madness," says UN Secretary-General Antonio Guterres.

- https://e360.yale.edu/



Thacker Pass in the far northern reaches of Nevada. Permits approved for a massive lithium mine are drawing impassioned protest.Credit: *Carolyn Cole/Los Angeles Times/Getty Images*

Mining for Clean Energy Could Undermine Biden's Environmental Justice Goals

Many proposed mines for minerals used in electric vehicles and cleantech will be located next to the lands of Indigenous people.

- https://www.scientificamerican.com/

Miscellany

An enzyme variant created by engineers and scientists at the University of Texas at Austin can break down environment-throttling plastics that typically take centuries to degrade in just a matter of hours to days.

The project focuses on polyethylene terephthalate (PET), a significant polymer found in most consumer packaging, including cookie containers, soda bottles, fruit and salad packaging, and certain fibers and textiles. It makes up 12% of all global waste.

Globally, less than 10% of all plastic has been recycled. The most common method for disposing of plastic, besides throwing it in a landfill, is to burn it, which is costly, energy-intensive and spews noxious gas into the air. Other alternative industrial processes include very energy-intensive processes of glycolysis, pyrolysis, and/or methanolysis.

Biological solutions take much less energy. However, until now, no one had been able to figure out how to make enzymes that could operate efficiently at low temperatures to make them both portable and affordable at a large industrial scale.

- https://phys.org/news/

As much as 50% of the energy absorbed by a solar cell is lost as heat because the charged particles in the photovoltaic process take in more energy than is needed to excite an electron and send it on its way as electricity. Teams are developing pathways to build what are called hot carrier solar cells (HCSC) to combat these thermal energy losses and improve efficiency. The underlying theory is that particles carrying excess heat, or hot carriers, could be isolated and stored in a lattice structure that captures the energy. Experiments proved this was possible, but a functional HCSC cell has not yet been built.

- https://www.world-energy.org

The New York Solar Energy Society (NYSES)

a chapter of the American Solar Energy Society (ASES)

prepares consumer knowledge handouts about energy conservation and renewable energy and distributes Green Energy Times, a resource publication, to the public throughout eastern New York State. NYSES analyses legislation and state programs and visits with the staff of legislators in New York City, New York State and in Washington, DC. NYSES **NYSES is a volunteer, grassroots, membership organization serving the children, families, engineers, architects, and teachers of New York State since 2007.**

Our Mission:

To encourage the understanding and use of solar energy technologies through public outreach, to be a source of sound technical knowledge, and to provide a forum to address critical regional and state issues relating to solar energy solutions. We address the energy usage of all segments of society by increasing awareness of the benefits of renewables: solar, wind, biomass, geothermal ground source, tidal/wave energy, and energy efficiency.

For more information, please contact:

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Join and Support NYSES -- http://nyses.org/Main/Join

By renewing your membership and/or making one-time or periodic donations, you can help to sustain and expand the efforts and activities of the New York Solar Energy Society.

Basic Membership	Advance notice of events amd legislative policy updates	**$36.00/ year**
Professional Membership	Above benefits plus discount on event admissions	**$100.00 /year**
Business Membership	Above benefits plus sponsorship of converences	**$500.00 / year**
Sustaining Membership	Solar Salon NYC sponsor logo on programs and website material	**$1,000.00 /year**

Contribute online via NYSES website www.nyses.org

or mail check to the address above

Thank you!

Please send your comments/suggestions via Contact-Us

The Board of Directors of the New York Solar Energy Society meets on the fourth Tuesday of odd numbered months via teleconference. Please contact us **if you wish to attend.**

Monthly Update is compiled & edited by Yuri Kalina

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