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THE TRANSATLANTIC SUN WIND BELT

U.S. ENERGY TRANSITION REPORT

BY CLEAN ENERGY ASSOCIATES

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BIDEN RELEASES OIL RESERVES AS CRITIQUES OF AUTOMOBILE DEPENDENCE GROW

Citing high domestic oil prices supply stemming from Russia's invasion of Ukraine, on 31 March President Biden ordered a release of one million barrels of oil per day for the next six months from the nation's Strategic Petroleum Reserve (SPR). Biden's release order will total roughly 180 million barrels, or 30.6% of the volume in the SPR in January 2022, and is accompanied by penalties on oil & gas companies that do not utilize federal leases. State governors are also implementing multiple policies to cushion the impact of rising gas prices.

However, environmental groups have remained critical of the release and other moves to increase fossil fuel supply in the wake of high prices, insisting instead on demand-side measures to reduce consumption. This week they were supported by language in the Intergovernmental Panel on Climate Change's (IPCC) Working Group 3 report that described measures to reduce transportation emissions in cities. Additionally, the nation's largest environmental and civil rights groups have come together to call for a greater focus on public transit and active mobility solutions to transportation emissions.

GAS PRICES REMAIN HIGH

This is the second release of oil from the SPR in the last five months. It follows on the release of 50 million barrels announced on November 24 in response to gas prices that spiked during the Fall with the resumption of oil demand driven by economic recovery. The latest release comes after gas prices again spiked in March following Russia's invasion of Ukraine. When Biden announced the latest release last week national gasoline prices were at $4.24 per gallon, 47% higher than the average a year ago.

In the week following the announcement the price of West Texas Intermediate crude oil stayed in the range of $99 to $103 per barrel. This is below a spike that topped off at $127 per barrel in early March, but still well above average 2021 prices. However, the national average gas price on 6 April was still $4.16 per gallon. This is down only slightly from historic highs in March, which has prompted politicians in the Democratic Party to accuse oil companies of failing to pass on falling costs to customers.

As a response to the high gas prices, Connecticut, Georgia, and Maryland have temporarily paused collection of gas taxes. Other proposed measures include California Governor Newsom's proposal to give $400 to the owners of each car registered in the state, and Chicago Mayor Lori Lightfoot's call for gas cards for low-income residents of her city.

In the United States a combination of low-density settlement patterns and lack of viable public transit makes many residents, including many low-income residents, dependent on driving to meet basic needs. These factors persist even in many of the nation's largest cities.

CALLS FOR DEMAND-SIDE SOLUTIONS

Energy writer and former oil trader Gregor Macdonald has concluded that much of the current energy price shock is the result of the United States stressing supply-side instead of demand-side solutions. In his 4 April weekly newsletter, Macdonald wrote that "the United States once again faces the consequences of having done so little to lower its demand for oil." Macdonald notes that while oil consumption in Germany, France, and the United Kingdom fell by roughly 1/3 from 2000 to 2020, that the United States demand essentially plateaued after peaking in 2005.

Macdonald also concludes that this problem "centers on the structural and political supremacy of cars." His research and others have shown that even under scenarios of very rapid electrification, the United States will not be able to meet its 2030 greenhouse gas reduction targets without also reducing the distances that Americans drive.

Notably, the IPCC's Sixth Assessment, Working Group 3 report released this week lists measures that result in less driving as means to reduce transport emissions. The Summary for Policymakers states that "changes in urban form (e.g., density, land use mix, connectivity, and accessibility) in combination with programs that encourage changes in consumer behavior (e.g., transport pricing) could reduce transport related greenhouse gas emissions in developed countries and slow growth in emissions in developing countries (high confidence). Investments in public inter- and intra-city transport and active transport infrastructure (e.g., bike and pedestrian pathways) can further support the shift to less GHG-intensive transport modes (high confidence)."

On the same day that IPCC released its report, more than 35 national organizations issued a letter calling for a $200 million investment in community led, pro-transit and active transportation advocacy. Signatories included the nation's largest environmental and climate groups (Natural Resources Defense Council, Sierra Club, and 350.org) and most prominent civil rights group (NAACP).

But while such approaches are increasingly being taken seriously in the environmental community and among climate activists, the bulk of federal and state funding for transportation infrastructure is still focused on automobiles, and Macdonald notes that the subsidization of automobile dependency remains a "third rail" for U.S. policymakers.

Read more:

Analysis: What's Next for America's Strategic Petroleum Reserve? (OilPrice)

Source: Memorandum on Finding of a Severe Energy Supply Interruption (White House)

Source: Open Letter: Climate Funders Need to Re-think their Giving and Invest More in Clean Transportation to Curb Greenhouse Gases (Funders Network)

News coverage, context: These States Are Combating High Fuel Prices with Gas Tax 'Holidays' and Rebates (CNET)

TRADE GROUP WARNS OF FALLING SOLAR INSTALLATIONS, JOB LOSSES

Following on a survey of member companies, the U.S. Solar Energy Industries Association (SEIA) has warned that U.S. installations of solar will fall by roughly a third this year and that 70,000 of the industry's 231,000 jobs will be lost. SEIA says these losses are caused by the anti-circumvention investigation against cells and modules from Cambodia, Ma-

laysia, Thailand, and Vietnam, which is already causing suppliers in those nations to stop shipping modules to the U.S. market (see the 24 March US Energy Transition Report for more details).

As explored in previous editions of the U.S. Energy Transition Report, even at full output U.S. factories can only produce around 7.4 gigawatts-DC of PV modules, or around 30% of 2021 demand. Meanwhile, the four countries named in the anti-circumvention investigation were the source of more than 80% of U.S. module imports in 2021 and roughly 45% of cell imports.

SEIA has surveyed more than 200 member companies, and in a webinar estimated that among these companies 80% or more of their 2022 project pipeline is at risk of delay or cancellation. Overall, the trade group estimates that the United Stats will see a deficit of 8 gigawatts of modules this year and will install only 16 gigawatts. SEIA notes that this is in sharp contrast to much higher levels of annual installations that are needed to meet President Biden's 2035 decarbonization target.

CEA has confirmed that most of the cell and module manufacturers in these four nations have stopped shipping to the U.S. market, at least until more certainty is attained. Among the few module makers in these nations that continue to ship product, most are requiring the buyer to absorb all risk for any duties imposed by the U.S. government.

If the U.S. Department of Commerce finds circumvention in its final ruling, CEA expects more cell and module factories to be built to serve the U.S. market located in nations other than the four named in the petition, China, or Taiwan, which are also subject to import duties. However, most of the plans for solar factories in the United States are pending additional incentives such as the Solar Energy Manufacturing for America (SEMA) act, which has not yet passed the U.S. Senate.

Read more:

News coverage: Solar industry: We're in 'most serious crisis' in history (E&E News)

Source: Survey: Solar Deployment Hammered by Meritless Trade Case, U.S. Climate Goals in Jeopardy (SEIA)

Additional source: CEA Research

LITHIUM-ION SUPPLY CHALLENGES TO PERSIST

Booming Li-Ion battery demand across the EV and energy storage sectors is putting intense pressure on limited raw material supply. CEA analysis indicates that a lack of capital investments to build or expand the mines due to lower raw material prices in past years has been the major contributor to the huge disconnect between supply and demand today. Other factors such as thriving post-pandemic demand and ongoing logistics issues due to COVID-19 have been further hindering the progress of mining activities worldwide.

This imbalance, however, is creating lucrative opportunities for miners, both big and small. Investment in most mining operations expected low returns until recent price increases. Miners are responding positively to the ongoing surge in lithium and other raw material prices by investing in new as well as existing mining projects as rapidly growing demand for EVs is going to keep raw material prices strong throughout this decade.

To bolster mining project pipeline, miners are planning to develop exploration-stage projects that were ignored in the past as many miners did not have capital to invest in new projects when metal prices were generally lower. Even EV manufacturers are funneling investments into various battery raw material mining projects in order to secure the supply.

This whole elevated raw material price situation has been made worse by Russia's invasion of Ukraine since the country accounts for 11% of the global nickel ore supply and 20% of the global Class 1 nickel supply, which is used in EV batteries. Even though nickel prices have calmed down since reaching US$100,000 per tonne on the London Metal exchange (LME), they are still higher than pre-war levels. As of April 1, 2022, nickel price was US$33,223 per tonne, about 36% more than it was on February 25 (US$24,361 per tonne).

Top nickel-producing countries, especially Indonesia and Philippines, are determined to rapidly ramp up production and fulfill the global demand even if sanctions are imposed to curtail nickel supply from Russia. Indonesia is set to add 393,000 tons to 400,000 tons of nickel, bringing the total metal capacity to 1.4 million tons. Meanwhile, the Philippines is expected to bring ten nickel mines online this year. Currently, the world's second-largest nickel ore producer has 32 nickel mines in operation.

Even though these countries are not able to match the pure nickel production of Russia, the abundance of laterite ores is expected to lead to the ferronickel production, nickel concentrates, and other nickel products for EV battery production.

However, battery cell production comes online much faster than mining projects and this disconnect is expected to keep raw material prices high for another 2-3 years. Mining is a key industry bottleneck across the battery value chain where timelines can be 5x to 10x

cell factory construction due to site exploration, permitting, and initial development. As such, demand will continue to outstrip supply as mining is a long lead-time, highly capital-intensive sector and this exacerbates the mismatch between raw material supply and volume of raw materials required by battery manufacturers.

According to Benchmark Mineral Intelligence, even if each raw material project in the current pipeline comes online and existing operations expand aggressively, battery raw material supply will just not be enough to capture the entire demand in 2030.

EV makers are facing inflationary pressures due to surging price of battery raw materials – lithium, cobalt, and nickel – as demand continues to outstrip supply. Many EV manufacturers have started passing on this cost onto buyers through increased EV prices and this is likely to slow down the pace at which countries are moving forward towards their zero-emission mobility targets.

Source: CEA Research

NEWS ROUNDUP: FERC ISSUES STRATEGIC PLAN, MARYLAND PASSES AGGRESSIVE GHG REDUCTION TARGETS, NATIONAL GRID BETS ON H2 IN THE NORTHEAST, ISO-NE CALLS FOR EARLY MOPR END

The Federal Energy Regulatory Commission (FERC) has released a strategic plan for 2022 through 2026, highlighting several significant pending changes including compensation for intervenors and a focus on environmental justice. The plan also identifies "Facilitating the Development of the Electricity Infrastructure Needed for the Changing Resource Mix" as a strategic priority and places a big emphasis on new transmission to achieve that end. FERC states that it is planning a series of reforms including changes to regional transmission planning, cost allocation, interregional planning, and the interconnection queue process. Finally, it says that it will engage with states as partners in these reforms.

Source: Strategic Plan, Fiscal Years 2022 – 2026 (FERC)

News coverage: FERC's Office of Public Participation eyes options for intervenor funding (Utility Dive)

The Maryland House has joined the Senate in passing a bill to set statewide greenhouse gas reduction targets of 60% by 2031 and net zero by 2045. If the Climate Solutions Now Act of 2022 becomes law, these would be the most aggressive economy-wide greenhouse gas reduction targets in the nation.

A commission would be tasked with turning those targets into law. This is a similar approach to what Rhode Island took with its "Act on Climate" legislation passed in 2021, which sets a statewide greenhouse gas reduction target of 45% by 2030.

Maryland Governor Larry Hogan is expected to veto the bill. However, it has passed with a more than 2/3 majority in the House, which could allow for the veto to be overridden.

Analysis: The Climate Solutions Now Act of 2022 (Gordon Feinblatt LLC)

Utility National Grid plans to hold on to its gas networks in New York and New England and to use a transition to green hydrogen to stave off electrification efforts, according to utility officials cited by S&P Global. This announcement comes days after the power company announced that it would sell a majority stake in its UK gas business.

National Grid plans to transition its networks to carry hydrogen and "renewable" natural gas from methane waste at farms, landfills, and other sources. National Grid also plans to use offshore wind power during off-peak times to produce hydrogen by spitting water via electrolysis. It then plans to mix this H2 into its gas networks in New York City. The utility says that this will allow it to give policymakers an alternative to electrification.

News coverage/source: National Grid sees US gas utilities as core to clean energy networks strategy (S&P Global)

In a new filing at the Federal Energy Regulatory Commission (FERC), New England's grid operator is now proposing to end its Minimum Offer Price Rule in 2025 and to exempt up to 2 gigawatts of renewable energy from the rule. The New England Independent System Operator (ISO-NE) has come under heavy criticism for the MOPR, which seeks to insulate conventional power plants from having to compete with renewable energy in capacity auctions.

ISO-NE's MOPR proposal is unpopular both at FERC and with state governments in New England, many of which have strong decarbonization policies. However, ISO-NE is hoping that its latest proposal is an acceptable compromise, claiming that if the MOPR ends suddenly it could cause many of the plants that the region relies on for reliability to shut down.

News coverage: ISO-NE proposes ending MOPR in 2025, with a transition aimed at protecting grid reliability (Utility Dive)