The Offshore Wind Round-Up

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IN THIS ISSUE

Please note that The Offshore Wind Round-Up will pause publication in March 2025 and resume in April

ADDRESSING THE CHALLENGES OF STORING POWER GENERATED BY WIND

An article published November 26, 2024 in *The Washington Post* provides a summary of the challenge:

> SAPPORO, Japan — Ocean winds whip across the beaches, hillsides and sprawling plains of Hokkaido. There's enough wind energy here for Japan's northernmost island to power itself and export clean electricity to the rest of the country.
>
> But Hokkaido can't harness all of that power unless **it has a way to store energy** when breezes are blowing and use it later when the gusts die down.
>
> Hokkaido is facing a problem that is **starting to confront power grids** around the world. For the past 150 years, utilities have stored energy in piles of coal or tanks of gas that can be burned on demand. But as countries switch from fossil fuels to clean energy, they **need a new kind of backup system** that can deliver power whenever someone flips a light switch, not just when the sun shines or the wind blows.

The development of **flow batteries** is gaining worldwide momentum. *From the same article:*

> Power companies are experimenting with **new ways** to hold on to that clean electricity, from stashing heat in vats of sand to supersizing the lithium-ion batteries that power laptops and cars.
>
> Some 30 miles from Sapporo, the Hokkaido Electric Power Network (HEPCO Network) is deploying **flow batteries**, an emerging kind of battery that stores energy in hulking tanks of metallic liquid.
>
> But the **technology faces a raft of challenges**, including high up-front costs and skeptical financiers. China and Russia dominate the market for **vanadium**, the metal that makes flow batteries durable and easy to maintain. “The supply chain for vanadium is extremely precarious,” said Kara Rodby, a battery analyst at the investment firm Volta Energy Technologies.
>
> Still, flow batteries are **making their debut in big real-world projects**. Sumitomo Electric, the company that built the Hokkaido plant, has also built flow batteries in Taiwan, Belgium, Australia, Morocco and California. Hokkaido’s flow battery farm was the biggest in the world when it opened in April 2022 — a record that lasted just a month before China built one that is eight times bigger and can deliver as much energy as an average U.S. natural gas plant.

The “delicate balancing act” — whether power comes from coal, gas or wind — is explained in the same article:

> **All power grids** have to pull off a delicate balancing act: There must always be about as many electrons flowing out of power plants as homes and businesses are using. **If that balance ever falters**, a community could face blackouts — or the utility could waste money making extra energy no one uses.
>
> To make sure there’s always enough electricity to go around, energy companies rely on extra-polluting power plants called “**peaker plants**,” which tend to be older, less efficient and more polluting than other plants.
>
> Most of the time, they sit idle. But in an emergency [during peak usage by consumers], they dump fuel — usually natural gas — into their combustion turbines to generate electricity fast. That **keeps power flowing** steadily to homes, businesses and factories, but it also pumps pollution into the air.
>
> Wind turbines and solar panels don’t pollute, but they **can’t make more electricity on demand**. They only produce as much energy as the sun and the wind provide, which changes throughout the day or year depending on the weather.

One way to **smooth out those bumps** is to use batteries to store renewable energy when it's plentiful and use it later when it becomes scarce.

The energy held in batteries mirrors the tanks of gas sitting next to a combustion turbine waiting to be burned — except batteries can send out electricity even faster than a gas turbine can ramp up, and they don't create carbon pollution.

The article includes a **detailed explanation** about how the flow batteries work, with diagrams of the components and photos of the plants.

Access the full article in The Washington Post *by clicking on this link*
https://www.washingtonpost.com/climate-solutions/interactive/2024/flow-batteries-renewable-energy-storage

NJ OFFSHORE WIND RESEARCH AND MONITORING INITIATIVE

A recent announcement from the NJ Department of Environmental Protection ("NJDEP") prompted several questions.

An email sent by the NJDEP on December 13, 2024 announced that the New Jersey **Offshore Wind Research and Monitoring Initiative** is seeking input on a draft update to its existing Short-term Highest Priority Research & Monitoring Needs.

The **deadline** for the public to provide comments is **January 31, 2025**. Included in the original NJDEP email request for comment was a link to a survey which would not open unless you were using a work or school Microsoft account.

Subsequently, the NJDEP provided the correct link to the survey: https://links-2.govdelivery.com/CL0

What is the NJ Offshore Wind Research and Monitoring Initiative ("RMI")?

In March 2022, the NJDEP and New Jersey Board of Public Utilities ("BPU") **announced funding** for projects through the Offshore Wind Research & Monitoring Initiative (**RMI**) and the intention to work collaboratively to **coordinate and expand research** into the impacts of offshore wind development on wildlife and fisheries.

RMI's stated goal is to ensure that, as New Jersey moves towards a clean energy economy, it adheres to the mandate to protect and responsibly manage New Jersey's coastal & marine resources.

The initiative is **funded** by two offshore wind farm developers through a fund administered by the state.

Shortly after that announcement, RMI released a request for proposals and to date, there are **17 projects** described on its website.

Access the initial announcement about this collaborative effort by clicking on this link
https://dep.nj.gov/newsrel/22_0011/

Access information about RMI's phased research agenda, process, research and monitoring priorities and projects by clicking on this link
https://dep.nj.gov/offshorewind/rmi/ - about

The December NJDEP announcement asked for comments about its short-term highest priority research and monitoring needs. What exactly are they looking for?

The NJDEP is seeking **your thoughts** about the list of priorities as presented. For example, Do you agree that the topics listed are high priority? Do you agree that they should be funded for future research? If not, what changes would you make to the list and why? If so, what do you think should be considered the top three or four?

What topics are on the list? Here they are, but note that the NJDEP has stated that they are not listed in any rank order.

- Data management
- Environmental change
- Benthos[1]
- Birds
- Bats
- Fishes and invertebrates
- Sea turtles
- Marine mammals
- Fisheries

Access the list with descriptions of the intended research by clicking this link
https://dep.nj.gov/offshorewind/rmi/?utm_medium=email&utm_source=govdelivery - research-and-monitoring-priorities

WHAT IS THE FUTURE OF OFFSHORE SHORE WIND ENERGY DEVELOPMENT DURING THE TRUMP ADMINISTRATION?

The short answer is that right now, as of the day this newsletter is being released, one week before Inauguration Day, absolutely no one can say with any certainty.

[1] The flora and fauna found on the bottom, or in the bottom sediments, of a sea, lake, or other body of water

The president-elect has been very clear about his disdain for the development of offshore wind, however. In numerous campaign appearances this year, Mr. Trump railed against it and promised to sign an executive order to block such projects.

"We are going to make sure that that ends on Day 1," he said in a May campaign speech. "I'm going to write it out in an executive order. It's going to end on Day 1."

THE ROUND-UPS

- *This Offshore Wind Round-Up was prepared by a group of writers and researchers from Long Beach Island, New Jersey. The first Round-Up first appeared in May 2022 and it has been published every month except two since its debut.*

- ***Round-Ups** endeavor to periodically provide a **review of recent research efforts** in which the effects of offshore wind farms have been studied. In addition, they occasionally offer factual, **clarifying information**, in response to readers' questions and suggestions.*

- ***Research** included in Round-Ups points you in the direction of the science and assumes **no point of view** one way or the other about the presence of offshore wind farms off our shore. Likewise, clarifications are provided without editorial comment; they are there for you to consider so you can **draw your own conclusions**.*

- ***Questions** about the content of Round-Ups and **suggestions** for future topics can be directed to RoundUpLBI@gmail.com. The Round-Up research and writing team welcomes questions and comments.*

- ***Round-Ups** are **distributed** to the voting representatives of the eleven member organizations of the Joint Council of Taxpayers Associations of LBI (JCTA). The board members of each member association collectively make their own decisions about how and when this information will be distributed to its members and/or the community. Most often, taxpayer associations use their regular communication platforms, such as newsletters, website postings and/or social media, to make Round-Ups **available to the public**.*

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