



Oregon

Kate Brown, Governor



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MEMORANDUM

To: Energy Advisory Work Group Members

From: Janine Benner, Director

Date: September 28, 2022

Re: Materials for October 5, 2022 Meeting

It's hard to believe fall is already here, and we are in the middle of Reports Season here at the Oregon Department of Energy. This month, the Oregon Legislature is receiving three reports from us, including an update on our [Oregon Solar + Storage Rebate Program](#) as well as new studies on the [Benefits & Challenges of Floating Offshore Wind in Oregon](#) and on [Small-Scale and Community Renewable Energy Projects](#) (will be submitted on Friday, 9/30).

Over the next month, ODOE staff will work to finalize the [2022 Biennial Energy Report](#) for submission on November 1. We're excited to share a new set of Energy 101s, Resource & Technology Reviews, and Policy Briefs. New this year is the interactive History Timeline, which we previewed for you in July. And as always, the report will start out with the latest Energy by the Numbers. Also on the horizon is our [Renewable Hydrogen report](#), which we'll submit to the legislature by November 15.

We continue to implement [ODOE's incentive programs](#), including work to stand up two new heat pump programs for 2023. We've appreciated your engagement as we've rolled out new incentives, and your help in getting the word out. As we've discussed in previous meetings this year, ODOE is also closely tracking federal funding opportunities from the Infrastructure Investment & Jobs Act and the Inflation Reduction Act. I'll have more to share at our meeting.

On Tuesday this week, the Energy Facility Siting Council reached a major milestone and approved the [Boardman to Hemingway Transmission Line](#). The 300-mile, 500-kilovolt transmission line has been working through the federal and EFSC public processes for over a decade (actively with EFSC since 2017), with dozens of public meetings and hundreds of hours of Oregon Department of Energy staff time. Like most energy facilities, B2H has some community opposition, so EFSC's decision may be appealed to Oregon's Supreme Court by parties to the contested case proceeding.

ODOE's Nuclear Safety and Emergency Preparedness team and support staff from across the agency came together on September 13 for the first in-person nuclear safety exercise since early 2020. The exercise was a "dress rehearsal" for a FEMA-graded exercise to be held October 25.

I'll share more about these milestones at our meeting on October 5. As you'll see from the agenda, we're keeping this meeting short and focusing on updates from you. We'd love to hear about what's been happening since we last met, what you expect to be working on this fall, and how ODOE can be of help to you and your work.

We'll meet again on October 17 to share preliminary recommendations for the *2022 Biennial Energy Report* and hear feedback from you. We'll also provide an update on [ODOE's Strategic Plan](#) and discuss an initiative to conduct a strategic evaluation of ODOE's programs and activities. We'll share more with you ahead of that October 17 meeting.

We are very grateful for the time you have given us this year – especially over the last six months as ODOE worked to finalize our budget and legislative concepts going into the 2023-2025 biennium. I look forward to connecting with you next week.

While our agenda for next week's meeting focuses on your updates, I am also including some relevant materials for your review:

- Meeting Agenda
- ODOE staff presented three times during last week's Legislative Days. In case you missed it, you can find the presentations below:
 - [Update on Community Renewable Energy Grant Program and our new Small-Scale and Community Renewable Energy Projects study](#)
 - [2022 Floating Offshore Wind Report](#)
 - [2022 Renewable Hydrogen Report](#)
- Finally, attached are a couple of recent letters that ODOE has sent that we wanted to make you aware of:
 - ODOE Comments on the Bureau of Ocean Energy Management's Call for Information on Oregon Floating Offshore Wind Call Areas (June 2022)
 - Letter to the Joint Office of Energy and Transportation in support of the Oregon Department of Transportation's Electric Vehicle Infrastructure Program State Plan (July 2022)



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AGENDA

Energy Advisory Work Group

DATE: October 5, 2022

TIME: 3 – 4 p.m.

Oregon Department of Energy – via WebEx

Meeting Link: <https://odoe.webex.com/odoe/j.php?MTID=m893ba4114e8b111b96d1a12f7177c5a8>

Password: Energy

Call-in number: 1-408-418-9388 Meeting ID: 2344 628 8602

Time	Topic	Lead
3:00pm	Director's Welcome and Update	Janine Benner
3:10pm	EAWG Roundtable <ul style="list-style-type: none">• What's on the horizon for you this fall?• What are you expecting will come up in the 2023 Legislative Session?	EAWG Members
3:50pm	Closing Comments	All



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June 28, 2022

Dr. Whitney Hauer, Renewable Energy Specialist
BOEM, Office of Strategic Resources
760 Paseo Camarillo Suite 102
Camarillo, California 93010

Subject: BOEM's Call for Information on Oregon Floating Offshore Wind Call Areas

Dear Dr. Hauer,

Thank you for the opportunity to provide comments in response to the Call for Information and Nominations regarding the Commercial Leasing for Wind Energy Development on the Outer Continental Shelf (OCS) Offshore Oregon. The Oregon Department of Energy (ODOE) is the state's energy agency with a mission to help Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.

ODOE is submitting this comment letter with information about floating offshore wind (FOSW) and its potential to provide tremendous value in achieving Oregon's decarbonization and clean energy goals. These comments are submitted with the understanding that FOSW may have potential impacts to ocean users and the environment, and that other state agencies and stakeholders are raising valid questions and concerns. We encourage BOEM to study these issues further and continue engaging the public, tribes, and key stakeholders as well as addressing these concerns through an environmental assessment of any potential Wind Energy Areas and environmental impact statements on any potential construction and operations plan in the BOEM process.

ODOE supports BOEM's renewable energy leasing process for potential FOSW development, and recognizes the years of engagement and scores of public meetings the BOEM Oregon Intergovernmental Renewable Energy Task Force (Task Force) has accomplished with research organizations and potentially interested and affected parties since September 2019. BOEM's multi-year engagement process has led to two large call areas adjacent to Oregon's southern coast that have some of the strongest offshore winds in the country - the Coos Bay Call Area and the Brookings Call Area. ODOE supports BOEM's efforts to move forward in its process, without delay, to identify a much smaller subset of these call areas as Wind Energy Areas (WEAs) for potential leasing and more detailed study after it considers all the public comments, input, data, and commercial interest BOEM receives through its call for information.

General Procedural Comments

BOEM's engagement with key stakeholders and the public consisted of listening to input and hearing feedback on a multitude of critical factors crucial to identifying call areas that are large enough to provide abundant flexibility in the next step of BOEM's process – which is identifying much smaller Wind Energy Areas (WEAs) for potential leasing.¹ ODOE understands the call areas are therefore large for a reason, to allow for subsequent winnowing to smaller WEAs that are capable of being economically viable for commercial FOSW development, and capable of avoiding and minimizing potential impacts to ocean users and the environment to the best extent possible.

The critical factors that were the center of BOEM's engagement and consideration included:

- Oregon's demand for renewable energy;
- Suitability of ocean waters for FOSW - including wind energy potential and its estimated cost, seafloor conditions, water depth, and transmission availability;
- Maritime navigation;
- Subsea cables;
- Commercial fishing;
- Wildlife and habitat – including marine mammals, sea turtles, marine birds, and marine habitats;
- Submerged landforms;
- Viewshed;
- Tribal considerations; and
- Department of Defense considerations.

ODOE would like to see BOEM's process move forward to assess commercial interest in developing potential FOSW projects that could help meet Oregon's decarbonization and clean energy policies. ODOE also expects BOEM to work to avoid, minimize, mitigate, and monitor potential impacts to ocean users and the environment. ODOE therefore appreciates that BOEM listened to input and feedback on, and thoughtfully considered, all of the above parameters during its process leading to the development of the Coos Bay and Brookings call areas. ODOE also recognizes and appreciates that any and all subsequent WEAs will be the subject of environmental review, including public participation, before commercial leasing.²

Specific Substantive Comments

ODOE offers the following specific key considerations relating to the energy sector and the need for a rapid and tremendous scale of new renewable development to meet state, regional, and federal energy and climate goals.

¹ [BOEM's "call for information"](#) states these two call areas total 1,811 square miles and are technically capable of an estimated 14 gigawatts of FOSW capacity. BOEM also states that these large call areas are of sufficient size to allow for further refinement to WEAs that are technically capable of an estimated 3 gigawatts. **NOTE:** ODOE understands this is likely a total maximum area that is roughly one-fifth of 1,811 square miles (~388 square miles).

² [BOEM's "call for information"](#) states – "The WEA will be the subject of environmental review, including public participation, for possible commercial leasing."

Need for Gigawatt-Scales of New Renewables - Including FOSW

The effects of climate change are already having severe and sometimes devastating impacts across the state, including Oregon's ocean waters. For example, drought is now a persistent threat to Oregon's forests, agricultural lands, wildlife, and habitats. Droughts have exacerbated Oregon's wildfire season, and wildfires in the summer of 2020 reached an unprecedented scale and damage, including loss of life and hundreds of millions of dollars in cost to the state. Oregon's winters are also being affected by climate change; for example, the winter of 2020 brought atypical snow and ice storms that resulted in downed power lines and days of lost power to thousands of Oregonians. And in the oceans, atmospheric greenhouse gases (GHGs) are being absorbed at rates so high that the effects are causing ocean acidification and hypoxia that are impacting and threatening a wide range of Oregon's marine life and leading to major ecosystem and economic impacts.

To reduce GHGs and mitigate climate change and its effects, Oregon has enacted some of the most aggressive decarbonization, renewable, and clean energy goals in the nation, including [HB 3543](#) (2007), [SB 1547](#) (2016), and [HB 2021](#) (2021), and the Governor's [Executive Order 20-04](#) (2020). HB 3543 established Oregon's goals to reduce GHG emissions 10 percent below 1990 levels by 2020 and 75 percent by 2050. SB 1547 increased Oregon's Renewable Portfolio Standard (RPS) to require Oregon's largest investor-owned utilities to achieve 50 percent renewables by 2040. The Governor's E.O. 20-04 called for the state to reduce its GHG emissions by at least 45 percent below 1990 levels by 2035 and at least 80 percent by 2050. Most recently, HB 2021 requires Oregon's investor-owned utilities and electricity service suppliers to supply 100 percent greenhouse gas-free electricity by 2040.

The pace and scale of renewable energy development necessary to meet the GHG reduction goals and requirements codified in Oregon law is tremendous and cannot be overstated. A recent economy-wide decarbonization [analysis from Evolved Energy Research](#) finds that the **Pacific Northwest will require 80,000 megawatts (80 gigawatts) of new renewable energy projects** - after taking into account energy efficiency - by 2050 to achieve PNW's clean energy commitments.³ That's approximately eight times more wind and solar capacity than what currently exists in the region and the total installed capacity of all energy resources in the PNW today is around 60 gigawatts. Another Evolved Energy Research study found that up to 20 gigawatts of FOSW developed off Oregon's coast between 2035 and 2050 could be part of an optimized, least-cost solution to meeting the decarbonization and clean energy requirements of Oregon and other Western states.^{4,5} **Continuing BOEM's process along its current timetable is critical to ensuring the supporting port and transmission infrastructure necessary for FOSW deployment is in place in advance of 2035** (see [Timing is Critical](#) below for more on critical timing aspects).

³ Evolved Energy Research, [Northwest Deep Decarbonization Technical Report](#), May 2019, pg. 73

⁴ Evolved Energy Research, [Oregon Clean Energy Pathways Final Report](#), June 15, 2021, pg. 39

⁵ Notable 100% clean energy goals across the West – Oregon, 100% clean by 2040; California, Washington, and New Mexico, 100% clean by 2045; Nevada and Colorado, 100% clean by 2050; Idaho's Avista and Idaho Power committed to 100% clean by 2045. **Note:** Each of these goals are nuanced and not exactly the same.

Energy Value of FOSW

In a 100% clean power system, FOSW has value beyond its levelized cost of energy (LCOE), which measures the lifetime costs of a resource relative to its energy production. Traditionally, LCOE has been the driving metric in assessing the value of energy projects because Oregon's power systems have historically been supplied electricity from abundant hydro power and fossil-fuel generators, both typically capable of generating electricity across all hours of the year. However, many renewable resources do not generate electricity at all times it is needed, and therefore a 100% clean power system relies on a diversified mix of complementary clean generating resources that together are capable of supplying energy across all hours of the year (days, nights, and seasons). This paradigm of energy resources with high levels of renewable generation requires additional metrics to assess the value of energy projects, such as the timing of when renewables generate electricity and their degree of complementarity.

As coal plants and natural gas plants discontinue operations, renewables like solar and wind are being added to the grid. However, solar and wind are not always available – solar is not available at night and the wind does not blow consistently throughout the day and year. Additionally, there are ongoing concerns about the availability of hydropower in low water years, seasonal constraints exacerbated by climate change, or the potential of large dam removal – such as on-going litigation regarding the Lower Snake River Dams (four hydropower projects totaling three gigawatts of capacity). Overcoming these challenges requires a **tremendous scale and variety of new renewable energy and storage projects capable of complementing each other, and the hydropower system, to ensure the grid is supplied with a reliable and clean power mix.**

FOSW has the potential to add diversity and be a complementary renewable resource due to its ability to generate electricity during different times than other renewables (i.e., when the grid needs energy most). The generation output profile of the wind energy resource adjacent to Oregon's coast has been studied by Pacific Northwest National Lab (PNNL). PNNL found that FOSW can provide complementarity to Oregon's customer load as well as complementarity with land-based solar, wind, and hydropower generation.⁶ A 2021 National Renewable Energy Lab (NREL) study explored FOSW's complementary annual output profile, and found that FOSW adjacent to Oregon's southern coast has between a 60-75% capacity credit for the Western Interconnection.⁷ Capacity credit is a metric that indicates the value an energy resource can provide to the grid when energy is most needed, such as when other renewable energy generation is not available. For comparison, the same study found the average capacity credit for the top performing land-based wind resources to be 20%. **These findings demonstrate the significant diversity value that FOSW is capable of providing to clean power systems in Oregon and across the West to help ensure reliability.**

⁶ T. Douville, et. al., "Exploring the Grid Value Potential of Offshore Wind Energy in Oregon," PNNL, May 2020, https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-29935.pdf

⁷ Jorgenson, Jennie, et.al., "A systematic evaluation of wind's capacity credit in the Western United States," Wind Energy, 2021, <https://doi.org/10.1002/we.2620>

Non-Energy Value of FOSW (reduced land-use)

If FOSW is not available, more land-based solar, wind, and storage projects will likely need to be developed to meet Oregon’s decarbonization and clean energy goals. All energy generation resources come with trade-offs, including potential impacts to ocean/land users and the environment. In Oregon, onshore renewable energy and transmission development can come into conflict with other important resources and uses. Renewable energy development on land frequently intersects with alternative land uses including military uses (air, land, and sea space) and conservation of working farm and forest lands, natural resources, and wildlife habitat. For example, the central and southeastern parts of the state have the highest solar potential but also the greatest concentration of special use airspace, military flight corridors, sage grouse habitat, and other sensitive areas.⁸ **FOSW can also provide critical non-energy benefits across Oregon by reducing the need for developing new renewable energy, transmission, and storage projects on land.**

Costs of FOSW

FOSW projects have significant costs related to infrastructure development projects, supply-chain development, and construction activities necessary to deploy FOSW projects and interconnect them to the grid. There may also be costs associated with potential impacts to ocean users and the environment from FOSW projects, as well as costs related to not developing FOSW projects - including societal and environmental costs of GHG emissions and climate change that deploying FOSW could help mitigate. ODOE supports decision-making processes on FOSW that consider all potential costs.

- Water Depth

Water depth is a critical technoeconomic factor affecting the costs of FOSW and a concern that has been raised by many potentially affected parties, including commercial fishing stakeholders. National Renewable Energy Lab modeling and analysis shows the technoeconomic feasibility of offshore wind is limited to 1,300 meter ocean depths.⁹ The 1,300 meter limit is largely because the ocean floor quickly begins to drop from 1,300 meters to 3,000 meters, creating a steep slope. Therefore, in order to avoid this slope, projects would need to be at a 3,000 meter depth. While this depth may avoid fishing conflicts, the costs of going deeper than 1,300 meters are not incremental but are a step-change. **Costs would significantly increase beyond 1,300 meters** due to the need for much longer cabling lines for anchoring (potentially 3 times longer), much longer power export cables, and more specialized sea vessels for installation. **The magnitude of cost increases would make those projects less economically viable under least-cost, least-risk utility planning in Oregon’s energy markets.**

For these reasons, outreach and data gathering efforts conducted by BOEM and the State focused on areas with water depths up to 1,300 meters as a reasonable limit for potential near-term development of FOSW. While FOSW technology is rapidly evolving, the technology for ultra-deep FOSW projects may not be cost-effective until much later

⁸ See *Oregon Renewable Energy Siting Assessment* (ORESAs) project deliverables, available at <https://www.oregon.gov/energy/energy-oregon/Pages/ORESAs.aspx>

⁹ W. Musial, “Updated Oregon Floating Offshore Wind Cost Modeling,” NREL, Sept. 2021, p. 17 <https://www.nrel.gov/docs/fy22osti/80908.pdf>

into the maturation of the FOSW industry which could prevent FOSW from contributing to Oregon's timeline to achieve 100% clean by 2040. ODOE supports statements made by Governor Kate Brown in her January 13, 2022 letter to BOEM recommending that BOEM consider areas that provide the flexibility for the potential use of waters beyond 1,300 meter depth that could be technically and financially viable for development in the near or distant future. ODOE would be concerned if expansion of the currently identified call areas to include deeper waters would require significant delays in BOEM's current process and timeline.

On this topic, ODOE appreciates BOEM's specific ask for feedback from the FOSW industry on the considerations involved with FOSW in deep waters, including water depths greater than 1,300 meters, and in areas where the seafloor slope is greater than 10 degrees. Any additional information BOEM receives with respect to cabling lines for anchoring and power export, and other deep water considerations such as available floating technology, transmission distance, water depth, seafloor conditions, and operations and maintenance feasibility and costs will be very valuable and should be considered in future BOEM engagement.

- *Onshore Transmission Availability*

The availability of onshore transmission capacity is another key factor affecting the costs of FOSW. Without available transmission capacity to deliver the energy generated by a FOSW project to a load center, costs for interconnecting a FOSW project to the grid would substantially increase. NREL estimated that approximately **2.6 gigawatts of offshore wind could be physically integrated into Oregon's onshore power system without major trans-coastal upgrades or curtailments** if it were distributed along five existing points of interconnection along the Oregon coast.¹⁰ Of the five points of interconnection studied by NREL, Wendson and Fairview are both closest to the two identified call areas, and also have the most available transmission capacity.¹¹

While both the Wendson and Fairview substations have some available transmission capacity (in the order of hundreds of megawatts), both would likely require upgrades to accommodate an injection of FOSW energy at the gigawatt-scale. These upgrades could be costly, but would likely be less costly than upgrades to the other three points of interconnection that were studied further north along Oregon's coast.

Therefore, ODOE is supportive of BOEM's identification of the Coos Bay and Brookings call areas as they provide **the best opportunity in terms of potential energy value and transmission costs for potential FOSW projects to be economically viable for commercial development.**

¹⁰ Novacheck and Schwarz, "Evaluating the Grid Impact of Oregon Offshore Wind," NREL, Oct. 2021, p. xv, <https://www.nrel.gov/docs/fy22osti/81244.pdf>

¹¹ Id., p. 14

Timing is Critical

FOSW has **long-lead times with respect to infrastructure development, supply-chain development, and construction activities necessary to deploy FOSW projects and interconnect them to the grid.** There is no Oregon port that is currently deep enough nor large enough to accommodate the capabilities and activities necessary to construct and deploy FOSW projects. Port upgrades would likely require at least two to four years of planning and development activities, and possibly longer depending on siting and permitting processes. Oregon's coastal transmission infrastructure proximate to the two call areas is not robust enough to accommodate the interconnection and delivery of gigawatt-scales of FOSW to load centers. Minor onshore transmission upgrades to accommodate up to 1 gigawatt of FOSW would likely require several years of planning and upgrade activities. Major onshore transmission upgrades to accommodate up to 3 gigawatts would likely require the construction of new high-voltage lines (greater than 230kV) which would require even longer timelines – upwards of 10+ years based on the historical timeframes involved with transmission planning, siting and permitting processes, and construction activities.

FOSW involves many **timing factors related to state decarbonization and clean energy goals, federal OSW goals, expiring federal tax credits, and coordination of FOSW activities with neighboring states** – each of which are deserving of BOEM's consideration in the timeline of this process.

- *Oregon's Decarbonization and Clean Energy Goals*
As noted earlier, the Governor's E.O. 20-04 calls for the state to reduce its GHG emissions by at least 45 percent below 1990 levels by 2035, and at least 80 percent by 2050. Most recently, HB 2021 requires Oregon's investor-owned utilities and electricity service suppliers to supply 100 percent greenhouse gas-free electricity by 2040. A delay in BOEM's identification of WEAs could jeopardize FOSW along Oregon's coast from contributing to achieving these important decarbonization and clean energy goals and timelines.
- *White House Offshore Wind Goals*
The Biden Administration has set a federal goal for deploying 30 gigawatts of offshore wind by 2030. This goal supports the Administration's decarbonization goals, and a delay in BOEM's identification of WEAs could jeopardize progress toward achieving this important deployment goal and timeline.
- *Expiring Federal Tax Credits*
The federal Taxpayer Certainty and Disaster Tax Relief Act of 2020 provides a 30% Investment Tax Credit (ITC) for offshore wind projects that have commenced construction prior to December 31, 2025 and that are completed in no later than 10 years. A delay in BOEM's identification of WEAs could jeopardize offshore wind projects from qualifying for the Federal Investment Tax Credit set to expire at the end of 2025.

- *Coordination on FOSW Activities*

Coordination with other states and entities can lead to cooperative offtake agreements that can leverage economies of scale that reduce the costs and risks of procuring FOSW for utilities, thereby reducing the costs and risks to ratepayers. Coordination with other states and entities can also help optimize the costs and risks of developing large-scale infrastructure projects like port upgrades and transmission upgrades that are necessary for FOSW deployment and interconnection to the grid, respectively. Delay in BOEM's identification of WEAs could detract from Oregon's coordination efforts with other states and entities on optimizing common infrastructure needs to support an emerging FOSW industry on the West Coast and to help reduce the costs and risks of FOSW for Oregon ratepayers.

Considering the above timing factors, ODOE is supportive of BOEM continuing its process to the next step of identifying a subset of smaller WEAs for further study from the larger call areas.

Oregon's HB 3375 FOSW Study

The Oregon legislature specifically addressed FOSW with the passage of Oregon HB 3375. This bill declared many legislative findings, including the state's recognition that the activities of the BOEM Oregon Intergovernmental Task Force could lead to potential FOSW development in federal waters off the Oregon coast.¹² Other legislative findings of key significance included the state's recognition that FOSW could yield a multitude of potential benefits to the state, along with the state's recognition that FOSW could have potential impacts to ocean and land users and the environment.¹³

In furtherance of the legislature's findings, HB 3375 declared a goal for the state to **plan for the development of up to three gigawatts of FOSW projects within the federal waters off the Oregon coast by 2030** – and a goal that state planning be conducted in a manner that will maximize benefits to Oregon while minimizing conflicts between FOSW, the ocean ecosystem and ocean users.¹⁴

While HB 3375 declared a general goal for the state to plan for the development of FOSW, the bill did not create a state incentive or mandate for the procurement of FOSW by Oregon utilities, nor did it provide specifics about how the state should plan for FOSW. HB 3375 concluded by directing ODOE to study the benefits and challenges of integrating up to three gigawatts of FOSW into Oregon's electric grid by 2030; and to provide the legislature with a report – which summarizes the study's key findings, including opportunities for future study and engagement. ODOE is currently writing a draft report, and the final report is due to the legislature by September 15, 2022.

As directed by HB 3375, ODOE's report on the benefits and challenges of integrating gigawatt-scales of FOSW into Oregon's electric grid by 2030 will provide information to the legislature to inform any additional state policy or planning direction pertaining to FOSW. ODOE encourages

¹² [Oregon HB 3375](#) (2021), See Section 1 (1)(a) – (j) for all findings.

¹³ [Oregon HB 3375](#) (2021), Section 1 (1)(g).

¹⁴ [Oregon HB 3375](#) (2021), Section 1 (2)(a) and (b).

BOEM to review and consider the final report as part of the next step in its process – which is identifying WEAs for environmental assessments and potential leasing.

Conclusion

ODOE appreciates BOEM’s consideration and balancing of the benefits and concerns shared in all the comments it receives in response to its call for information – including the comments of Oregon’s state agencies. ODOE recognizes that floating offshore wind has the potential to provide tremendous value in achieving Oregon’s decarbonization and clean energy goals, and also recognizes that FOSW may have potential impacts to ocean users and the environment. Below is a summary of the key points from this comment letter:

1. There is a tremendous need for rapid development of gigawatt-scales of new renewable energy projects over the next several decades to meet decarbonization and clean energy goals as soon as possible, and balancing this need with the potential impacts of energy project development will be critical to successfully meeting the challenge of mitigating the effects of climate change.
2. FOSW can provide diversity and complementary value to land-based renewables as part of an optimized solution that balances the aggregate costs, risks, and potential effects of developing gigawatt-scales of renewables on land and in the ocean. In addition to the energy value FOSW can provide toward clean power systems and meeting decarbonization goals, FOSW can also provide non-energy values by reducing the land used for additional new renewable energy projects.
3. Costs of FOSW should be considered in relation to the value it can provide. FOSW projects have significant costs related to infrastructure development projects, supply-chain development, and construction activities necessary to deploy FOSW projects and interconnect them to the grid. There may also be costs associated with potential impacts to ocean users and the environment from FOSW projects, as well as costs involved with not developing FOSW projects - including societal and environmental costs of GHG emissions and climate change that deploying FOSW could help mitigate. All potential values and costs should be considered in decision-making on developing FOSW.
4. Regarding the identified water depths of call areas and costs of FOSW at depths greater than 1,300 meters, NREL and industry have identified this depth as the current technoeconomic limit for near-term commercial viability due to the step-change in costs associated with the steep slope and drop-off distance to 3,000 meters that quickly occurs beyond 1,300 meters. While floating offshore wind technology is rapidly evolving, the technology for ultra-deep FOSW projects may not be cost-effective until later into the 2030s. ODOE would be concerned if expansion of the currently identified call areas to include deeper waters would require significant delays in BOEM’s current process and timeline.

5. Regarding the location of call areas, ODOE is supportive of BOEM's identification of the Coos Bay and Brookings call areas because they are proximate to available onshore transmission capacity, and in terms of potential energy value and transmission costs, provide the best opportunity for potential FOSW projects to be economically viable for commercial development.
6. There are long-lead times associated with infrastructure development, supply-chain development, and construction activities necessary to deploy FOSW projects and interconnect them to the grid. FOSW involves many timing factors related to state decarbonization and clean energy goals, federal OSW goals, expiring federal tax credits, and coordination FOSW activities in neighboring states. Because delays could jeopardize meeting federal and state goals or qualification for federal tax credits, and because delays could also detract from coordination efforts with other states and entities, ODOE is supportive of BOEM continuing its process to the next step of identifying a subset of smaller WEAs for further study from the larger call areas.

ODOE appreciates that BOEM's extensive engagement has centered around efforts to thoughtfully consider and balance Oregon's need for rapid development of gigawatt-scales of new renewable energy and the potential impacts to ocean users and the environment that this scale of development could have. ODOE looks forward to continuing to collaborate with Oregon constituents, stakeholders affected by FOSW, Tribes, sister state agencies, state legislators, Oregon's Congressional delegation, and BOEM in moving forward with thoughtfully assessing the opportunity for potential FOSW development off Oregon's coast.

Sincerely,

A handwritten signature in cursive script that reads "Janine Benner". The signature is written in black ink and is positioned above the printed name and title.

Janine Benner
Director, Oregon Department of Energy



Oregon

Kate Brown, Governor



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www.oregon.gov/energy

July 13, 2022

To the Joint Office of Energy and Transportation:

The Oregon Department of Energy is proud to support The Oregon Department of Transportation's National Electric Vehicle Infrastructure Program State Plan. ODOE's mission is to help Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations. The transportation sector accounts for about 40 percent of Oregon's harmful greenhouse emissions, so encouraging electric transportation options can help us achieve our mission's aim to protect the environment and public health. ODOT's plan builds on long-standing collaborative work between our agencies to inform electric vehicle charging needs across the state and ensure equitable access to EVs and their many benefits.

Oregon is a leader in EV adoption, supporting access to EV charging for more than a decade. In 2009, ODOE and ODOT partnered on a successful application for Transportation Investment Generating Economic Recovery (TIGER) grants and used the funds to establish the West Coast Electric Highway EV charging stations along Interstate 5. This work, in collaboration with California and Washington, built a charging corridor for EV drivers from Mexico to Canada. This history of partnership and collaboration continues as our two agencies work together on EV program and policy development, in support of Governor Kate Brown's Executive Order 17-21 *Accelerating Zero Emission Vehicle Adoption in Oregon to Reduce Greenhouse Gas Emissions and Address Climate Change* and her direction to ODOT to collaborate with ODOE on the development of the *Transportation Electrification Infrastructure Needs Analysis* completed in 2021.

Today the need for transportation electrification cannot be overstated. Oregon has witnessed first-hand the devastating effects of climate change, from damaging wildfires, lingering drought conditions, and deadly heat waves. With the state's electricity providers moving toward 100 percent clean energy goals, now is the time to invest in bolstering EV adoption. ODOT's plan is a major step to supporting this clean transportation system future, and ODOE is pleased to support it.

Sincerely,

Janine Benner, Director
Oregon Department of Energy