Oregon Department of ENERGY

Energy Facility Siting Council Meeting

Virtual Meeting

January 28,2022





Opening Items:

- Call to Order
- Roll Call
- Announcements



Announcements:

- Reminder that this meeting is being held in its entirety via teleconference and webinar.
- Reminder to Council and to anyone addressing the Council to please remember to state your full name clearly, and no not use the speakerphone feature, as it will create feedback.
- You may sign up for email notices by clicking the link on the agenda or the Council webpage.
- You are also welcome to access the online mapping tool and any documents by visiting our website.



Announcements continued:

- Please silence your cell phones
- Please use the "Raise Your Hand" feature in Webex to speak during the public comment period, or press *3 to raise your hand if you are participating by telephone.
- Energy Facility Council meetings shall be conducted in a respectful and courteous manner where everyone is allowed to state their positions at the appropriate times consistent with Council rules and procedures. Willful accusatory, offensive, insulting, threatening, insolent, or slanderous comments which disrupt the Council meeting are not acceptable. Pursuant to Oregon Administrative Rule 345-011-0080, any person who engages in unacceptable conduct which disrupts the meeting may be expelled.



Agenda Item A (Action Item & Information Item)



- December Council Meeting Minutes
- Council Secretary Report



Agenda Item B (Action Item)

Annual Financial Assurance Update

January 28, 2022 Sisily Fleming, ODOE Fiscal Analyst



Annual Financial Assurance Update

2022 Proposed Financial Institutions

Financial Institutions			
Letter of Credit	Bond		
Bank of America N.A.	Federal Insurance Co		
Bank of Nova Scotia (NY Agency)	Fidelity & Deposit Co of MD		
Bank of the West	Hanover Insurance Group		
Barclay's Bank, PLC (NY Branch)	Liberty Mutual Insurance Company		
Citibank, N.A.	SAFECO Insurance Co of America		
CoBank	Travelers Casualty & Surety Co of America		
Helaba (NY Branch of Landesbank Hessen-Thueringen GZ)	Westchester Fire Insurance Co		
JP Morgan/Chase Bank, N.A.			
MUFG Bank, N.A.			
Natixis (NY Branch)			
Royal Bank of Canada (NY Branch)			
Royal Bank of Scotland Connecticut Branch			
US Bank			
Wells Fargo Bank, N.A.			
Sumitomo Mitsui Banking Corporation (SMBC, NY Branch)			

ENERG

Annual Financial Assurance Update

Proposed Bond Template Modification

(page 2, section 6)

6. If the Surety provides written notice of intent to cancel this bond prior to the Principal fulfilling its obligation to retire the facility and restore the site, but Principal does not provide alternate financial assurance approved by the Council within 90 (ninety) 60 (sixty) days after the date the notice of intent to cancel is received by the Obligee from the Surety, the Surety will be obligated to pay monies to the Obligee, limited to the penal sum of this bond, upon demand by the Obligee prior to the effective date of the cancellation.



Annual Financial Assurance Update

Proposed LOC Template Modification

(page 1, paragraph 4)

It is a condition of this Letter of Credit that it shall be automatically extended without amendment for successive one (1) year periods from the present or any future Expiration Date hereof, unless we provide you with written notice by overnight courier or registered mail of our election not to extend this Letter of Credit at least sixty one hundred twenty (60120) days prior to any such Expiration Date (the present or any future expiration date as aforesaid is referred to herein as the "Expiration Date").



Council Decision Options

Option 1 Staff Recommendation

Approve recommended templates and financial institutions for use in 2022

Option 2

Approve recommended templates and financial institutions for use in 2022, with changes



Agenda Item C (Information Item)

2022 Legislative Session Overview

January 28, 2022 Christy Splitt, ODOE Government Relations Coordinator



2022 SESSION

Concepts that involve the Oregon Department of Energy

- Two Bills Involving Heat Pump Incentive Programs
- Energy Security Plan (Critical Energy Infrastructure Hub Bill)
- Environmental Justice Council Changes
- HB 2021 Responsible Labor Standards Fix
- Landscape Sprinkler Efficiency Standard
- Oregon Global Warming Commission Natural and Working Lands Next Steps

This slide will be updated after 2022 session bills are released on Monday, January 24th.



2022 SESSION

Other Energy Legislation Oregon Energy is tracking...

- Allowing local jurisdictions to adopt Oregon's reach code as their building code
- Community solar property tax exemption

This slide will be updated after 2022 session bills are released on Monday, January 24th.



LOOKING AHEAD TO 2023

- Legislative Concepts
- February 25, 2022: agency proposals due to Director Benner
- April 15, 2022: due to Department of Administrative Services
- June 3, 2022: DAS approved concepts due to LC
- December 9, 2022: Pre-Session Filing Deadline

Agency Budget

- March 18, 2022: agency proposals due to Director Benner
- May 30, 2022: current service level budget due to DAS
- June 30, 2022: agency recommended budget numbers due
- July 29, 2022: agency budget narrative due to DAS



Agenda Item D (Information Item)

PUBLIC COMMENT

Phone Commenters: Press *3 to raise your hand to make comment, and *3 to lower your hand after you've made your comment.

Webinar Commenters: Open the Participant list, hover over your name and click on the "Raise Your Hand

icon".





How to Raise Your Hand in Webex:

Webinar Participants

The bottom right of the main window is a set of icons:

Click on "Participants"

The bottom right of the participant window is a hand icon, click on the hand:

Clicking on it again will lower your hand.

Phone Participants

Press *3 on your telephone keypad to raise your hand.

Press *3 again on your telephone keypad to lower your hand.











Agenda Item E (Action Item)

Stateline Wind Project

Council Review/Decision on the Proposed Order on Request for Amendment 6 of the Site Certificate

January 28, 2022 Chase McVeigh-Walker, ODOE Senior Siting Analyst



Presentation Overview

- Facility Overview and Site Certificate History
- Request for Amendment 6 (RFA6) Proposed Changes and Procedural History
- Proposed Order (Action Item)



Facility Overview

Certificate Holder: FPL Energy Vansycle, LLC (Stateline 1&2) and FPL Energy Stateline II, Inc. (Vansycle II)

Parent Company: NextEra Energy Resources LLC.

Type of Facility:222 MW (operational) wind facility made up of two units:Stateline 1 & 2: 123 MWVansycle II: 99 MW



Facility Site/Site Boundary Location

Site Boundary

• Private land, within Umatilla County, near Helix

Site Certificate History

Site Certificate effective Sept. 14, 2001 Site Certificate Amended Five Times:

- May 2002
- June 2003
- June 2005
- March 2009
- May 2019





Requested Amendment Components

Proposed Wind Turbines Changes

- Replace blades and nacelles (repower) of 43 existing wind turbines
- Decommission and replace up to 4 existing wind turbines
- Construct and operate up to 2 wind turbines
 - Total not to exceed 45, 2.6 MW wind turbines (99 to 119 MW)
- Construct and operate 50 MW of battery energy storage
- Temporary and Permanent disturbance of up to 210.9 acres, and 12.1 acres respectively (temp. road improvements, laydown areas)





RFA6 Procedural History

Requirement	Responsible Party	Date
Preliminary Request for Amendment 6	Certificate Holder	July 23, 2021
Type A Determination	ODOE	Oct. 19, 2021
Complete RFA6 Received	Certificate Holder	Nov. 19, 2021
Draft Proposed Order Issued	ODOE	Nov. 23, 2021
DPO Public Hearing	EFSC	Dec. 16, 2021
Council Review of Draft Proposed Order	EFSC	Dec. 17, 2021
Proposed Order and Notice of Request for Contested Case Issued	ODOE	Dec. 21, 2021
Deadline to Request Contested Case	DPO Commentors	Jan. 20, 2022



RFA6 Procedural History Cont'd

Requirement	Responsible Party	Date
Council Review of Proposed Order as Final Order	EFSC	Today, Jan. 28, 2022
Council Issuance of Final Order and possible issuance of Amendment Site Certificate	EFSC	Today, Jan. 28, 2022



Summary of Changes

- Amended Conditions based on Council's review and comments on the DPO
- Updated findings of fact to Section III.K. *Historic, Cultural, and Archaeological Resources,* Section III.P.1. *Public Health and Safety Standards for Wind Energy Facilities,* and Section III.P.2. *Cumulative Effects Standard for Wind Facilities* based on Council's review and comments on the DPO
- Administrative updates to Section I. *Introduction*, and Section II. *Amendment Process*
- Administrative updates made to Draft Amended Site Certificate reflecting changes made to DPO conditions



Standards where there were no new impacts or where no new/amended conditions were recommended:

- Section III.F. Protected Areas (DPO pg. 61-67)
- Section III.I. Threatened and Endangered Species (DPO pg. 83-84)
- Section III.J. Scenic Resources (DPO pg. 84-86)
- Section III.L. Recreation (DPO pg. 92-94)
- <u>Section III.P.1. Public Health and Safety Standards for Wind Energy Facilities (DPO pg. 106-110)</u>
- Section III.O. Division 23 Standards (DPO pg. 106)
- Section III.P.2. Cumulative Effects Standard for Wind Energy Facilities (DPO pg. 111-114)
- Section III.Q.1. Noise Control Regulations (DPO pg. 116-119)
- Section III.Q.2. Removal-Fill (DPO pg. 119-121)
- Section III.Q.3. Water Rights (DPO pg. 121-123)

OREGO

Summary of Changes – Amended Conditions			
Standard	Condition(s)	Summary of Changes	
Structural	Conditions 140 and 141	Modified to require foundation suitability analysis; annual inspection and monitoring scheme for repowered wind turbines; and, establish foundation mitigation or remediation	
Soil Protection	Condition 152	Not incorporated into Proposed Order; Condition numbering adjusted	
Land Use	Condition 152 (was Condition 153)	Clarified CUP requirement and included specification for zoning permits	
	Condition 153 (was Condition 154)	Clarification for Emergency Response Plans requirements and distribution	
	Condition 154 (was Condition 155)	Include GIS data requirement and clarified setback requirement	
F&W Habitat	Condition 156 (was Condition 158)	Clarify the intent of the review and approval process of the final Noxious Weed Control Plan	
R&FA	Condition 157	Not incorporated into Proposed Order	
Waste Min	Condition 144	Specify management of waste and recycled materials; and include recycling evaluation	



Structural Standard [OAR 345-022-0020]

Proposed Order, Section III.C. (Starting on p. 35)

Conditions 140 and 141 – Modified to require certificate holder to (prior to repowering):

- Complete a foundation suitability analysis
- Develop and implement a minimum annual inspection and monitoring scheme for the 43 repowered wind turbines, and submit scheme to the Department for review and approval in consultation with DOGAMI or a third-party consultant
- Establish that any foundation mitigation or remediation deemed necessary through the final turbine foundation suitability analysis be described and submitted to the Department to determine whether the changes require a site certificate amendment



Soil Protection [OAR 345-022-0022]

Proposed Order, Section III.D. (Starting on p. 42)

Condition 152 – Not incorporated into Proposed Order; <u>condition numbering</u> <u>adjusted</u>



Land Use [OAR 345-022-0030]

Proposed Order, Section III.E. (Starting on p. 51)

Condition 152 – Clarified CUP requirement and included specification for zoning permits

Condition 153 – Clarification for Emergency Response Plans requirements and distribution

Condition 154 – Include GIS data requirement and clarified setback requirement



Fish and Wildlife Habitat [OAR 345-022-0060] Proposed Order, Section III.H. (Starting on p. 94)

Condition **156** – Clarify the intent of the review and approval process of the final Noxious Weed Control Plan



Retirement and Financial Assurance [OAR 345-022-0050] Proposed Order, Section III.N. (Starting on p. 82)

Condition 157 – Not incorporated into Proposed Order



Waste Minimization [OAR 345-022-0120]

Proposed Order, Section III.N. (Starting on p. 121)

Condition 144 – Specify management of waste and recycled materials; and include recycling evaluation



Council Decision on the Proposed Order

Option 1 Staff Recommendation	Option 2	Option 3
*Approve Proposed	Approve Proposed	Deny Proposed Order,
Order and Adopt Final	Order with	direct staff to make
Order	Modifications and	changes and re-issue
	adopt Final Order	Proposed Order

*Changes from Proposed Order to Final Order would be non-substantive and administrative in nature only. Examples include updating Department "recommended findings" to "Council findings" and updates to the procedural history (Section I.D. of the proposed order).



Agenda Item F (Information Item)

Biglow Canyon Wind Farm Transformer Failure Overview

January 28, 2022 Duane Kilsdonk, ODOE Compliance Officer Lenna Cope, Portland General Electric Senior Environmental Specialist


BIGLOW CANYON WIND FARM

- 450 MW Wind Energy Facility with 217 Wind Turbines
- Site Certificate issued on June 30, 2006
- Operating since December 21, 2007
- Amended 3 times last amendment was October 2008
- Owned and operated by Portland General Electric
- Located in northeast Sherman County



BIGLOW CANYON WIND FARM







BIGLOW CANYON WIND FARM

- 9 Transformer spills in 15 years of Operation
- Approximately 3,222 gallons of non-PCB mineral oil spilled and cleaned up
- Reporting Requirements
 - Condition 37 Public Health and Safety Standards for Wind Energy Facilities, OAR 345-024-0010
 - Condition 81 Waste Minimization, OAR-022-0120
- Reporting to ODOE has occurred consistent with conditions in all 9 instances <u>except</u> that one incident was reported late in 2017



Biglow Canyon Wind Farm Oil Releases

LENNA COPE

PORTLAND GENERAL ELECTRIC JANUARY 28, 2022 ENERGY FACILITY SITING COUNCIL MEETING



PGE Wind Power Assets

Site	Year Operational	Capacity (MW)	# Turbines	Turbine Type
Biglow Phase 1	2007	125	76	Туре І
Biglow Phase 2	2009	150	71	Type IV
Biglow Phase 3	2010	175	70	Type IV
Tucannon	2014	267	116	Type IV
Wheatridge	2020	100	40	Type III

PGE

Transformer Tank Rupture Causes



- Load and temperature changes degrade transformer oil hydrocarbons
- High variability of load on wind turbine transformers increases degradation, compared to standard (transmission & distribution) transformers with less variability
- Resultant dissolved gases build up in oil
- If not removed, gas accumulation will over-pressurize the tank and may cause a rupture
- Tank rupture typically results in release of transformer fluid



Transformer Loading Differences

Wind transformers loaded differently compared to load serving utility transformers

- Graph represents the same timespan for transformers at Biglow as compared to load serving transformers
- Load serving transformers have predictable peaks and valleys and follow a consistent usage pattern
- Wind transformers experience unpredictable peaks and valleys, with no consistent usage pattern



Load Serving



Wind



Biglow Canyon

Installed capacity: Construction started: Last phase operational:

450 MW 2007 2010



OERS #	Location	(gallons)	Phase
2021-1546	#353	300	2
2020-2358	Substation	100	NA
2020-1048	#365	166	2
2019-2155	#457	400	3
2017-1897	#9	600	1
2016-3006	#4	~200	1
2013-2462	#69	600	1
2011-1524	#415	476	3
2010-2207	#457	100	3

Phase 1: 76 – 1.65 MW Type I turbines Phase 2: 71 – 2.3 MW Type IV turbines Phase 3: 70 – 2.3 MW Type IV turbines



Wind Turbine – Transformer Technology

Early wind technology (e.g., all three phases of Biglow)

- Scaled technology quickly to meet rapidly increasing interest in wind power
- Essentially copied existing utility distribution transformer design specifications

Industry recognized transformer design vulnerabilities approx. 2012

- Increased rate of dissolved gas generation
- Frequent failures

New PGE design standards have improved reliability

- Current industry standards do not address the issue
- PGE specifications add features based on operational and reliability observations and features have been implemented across our fleet

Industry Monitoring standards are lacking

- No industry standard to compare results for decision making, PGE making prudent choices
- Online monitoring is cost prohibitive









Agenda Item G (Information Item)

Overview of Electrical Generation and Consumption in Oregon and the Region

January 28, 2022 Adam Schultz, ODOE Senior Policy Analyst Stephanie Kruse, ODOE Facilities Engineer 3



Agenda

- Electric System 101: Electric power system basics
- Northwest today: Current resource build
- Northwest tomorrow: Modeled resources to achieve carbon goals
- Concluding Thoughts: Big picture context





Electric System 101

Yaquina Head Lighthouse, Newport, Oregon

Overview of Electricity System Delivery





Generated by power plants <u>HI</u>I PRESS.



And delivered into your home









Comparing Electricity to Milk: What's Missing?

Comparing Electricity to Milk



Comparing Electricity to Milk



Electricity is just like Milk!

- (1) Pour a bowl of cereal
- (2) Walk to your front door
- (3) Milk you need is produced in *real-time* by the cow
- (4) Milk you need is delivered at that moment by the milk man
- (5) You open your front door and receive that fresh, cold milk
- (6) Pour that milk onto your cereal & enjoy!



What's Missing: Storage



GASOLINE AND NATURAL GAS: ROLE OF **STORAGE**



Generated by power plants <u>HI</u>I PRESS.



And delivered into your home





WHY DOES STORAGE MATTER?

Figure 1: Days of End-Use Fuel Storage in the U.S. Based on Average Daily U.S. Consumption by Fuel Type²





Derived from U.S. EIA data comparing average volumes of stored energy to average daily consumption for total gasoline (barrels consumed vs. weekly stocks); natural gas (mcf consumed vs. working natural gas in storage); and electricity (MWh of daily consumption vs. MWh of stored electricity).

Energy & Capacity (...and flexibility)

Energy 101: Energy vs. Capacity

Demand trend

System demand, in megawatts, compared to the forecasted demand in 5-minute increments.





Demand trend

System demand, in megawatts, compared to the forecasted demand in 5-minute increments.





Net demand trend

System demand minus wind and solar, in 5-minute increments, compared to total system and forecasted demand.





Net demand trend

System demand minus wind and solar, in 5-minute increments, compared to total system and forecasted demand.





Supply trend

Energy in megawatts broken down by resource in 5-minute increments.



Impacting the Power Sector in the PNW Today



Mid-Columbia Average Hourly Prices



Shifting Needs Throughout the Year





Source: US EIA

Dispatching Power Plants

HYPOTHETICAL UTILITY DEMAND PROFILE



Capacity Planning vs. Power Markets





ORE

ENERGY












OREGOI

ENERGY



Hypothetical Utility Demand Profile: Typical Summer Day







Hypothetical Utility Demand Profile: Typical Summer Day







Hypothetical Utility Demand Profile: Typical Summer Day





Variability of Regional Hydro Energy Output

Figure 12. 80 years of hydro generation





Balancing Authorities in the West

Responsibility of each Balancing Authority:

- Reliably planning and operating the high-voltage grid
- Matching generation with demand in real-time
- Managing imports and exports





Transmission Lines in the Western Electricity Coordinating Council





Current Electricity Resource Build in the Pacific Northwest

PNW: Installed Capacity vs. Annual Energy



* Energy generating capability of hydro based on average water year conditions.





Long-view: Development of NW Power Capacity



Energy Output in the Northwest by Month







Forecasting the Future: Regional Resource Build Necessary to Achieve Decarbonization Goals

Haystack Rock, Cannon Beach

2021 Plan: Baseline Projection of West-wide Build



Deep Decarbonization: Renewable Build in PNW

Cumulative New Resource Build

Wind

GW

Gas



87

Coal Retirements Across the West Continuing



Electricity Generation

Generation Mix

% Total Generation



Pacific Northwest Electricity Mix in 2050





EVOLVED ENERGY RESEARCH

Deep Decarbonization Pathways:

Projected electricity resource mix in the Pacific Northwest in 2050

Battery Storage: Fast-moving Target

CAISO Transmission Planning Process: Base Case Forecast of Battery Storage Capacity





90

Off-shore Wind: Over the horizon?

Off-shore wind potential in Oregon:

- World-class resource off southern Oregon coast
- Deep waters require floating platforms
- HB 3375 requires <u>ODOE to study</u> key issues in report due in September 2021





Source: Wind Power Engineering



91



Concluding Thoughts

Trillium Lake, Mt. Hood

Oregon's Total Energy Flow



Numbers are in trillions of British thermal units (Btus) 93

Energy by the Numbers | Page 1

Oregon's Electricity Production (2018)





Oregon's Electricity Consumption (2019)

Resources Used to Generate Oregon's Electricity

Based on 2019 data, this chart shows the energy resources used to generate the electricity that is sold to Oregon's utility customers.

Oregon Electricity Mix Over Time



Energy by the Numbers | Pages 9-10 Report includes 2018 data; ODOE now has 2019 data available

Comparing Generation and Consumption

Oregon's Electricity Generation and Consumption (2018)



Final Thoughts

- Variability: Variability is a major driver in the electric sector—in terms of renewable generation output and end-use consumption
- Exports: Electricity exports from Oregon are mostly driven by surplus hydropower output in the spring months
- Imports: Major differences exist across the energy sector—while much of Oregon's electricity consumption comes from in-state generation, it imports nearly 100% of its transportation fuels





Thank you!

Adam Schultz

Lead, Electricity & Markets Policy Group Adam.Schultz@energy.Oregon.gov

Stephanie Kruse

Energy Facilities Engineer <u>Stephanie.Kruse@energy.Oregon.gov</u>

Agenda Item H (Information Item)

Golden Hills Wind Project Council Review of Construction Compliance

January 28, 2022 Duane Kilsdonk, ODOE Compliance Officer Sarah Esterson, ODOE Senior Policy Advisor



Golden Hills Wind Project

Certificate Holder: Certificate Holder Owner: Facility Location:

Golden Hills Wind Farm, LLC Avangrid Renewables, LLC Sherman County

<u>Approved</u> 400 MW, 51 turbines

<u>Final Design</u> 200 MW, 51 turbines



Construction Status

Phase 1 (O&M building)June 18, 2020 (commencement)Phase 2 (51 wind turbines +)April 2022 (completion







Compliance Update

Excess Disturbance/Topsoil Management/Erosion

Applies to: Conditions GEN-MC-02, GEN-OE-03, CON-SP-01, PRE-LU-08, GEN-SP-01

- > ODOE Records Requests on: Aug. 19, Sept 8, Dec. 13
- > ODOE Site Inspections on: Sept 1, Nov 5, Dec 8, Dec. 14
- Cert holder Responses on: Aug 24, Sept 17, Dec 16
- > Next Steps: ODOE to issue request for corrective action plan from cert holder

1200-C Permit Requirements/Waters of the State

Applies to: Condition GEN-SP-01

- > DEQ issuance of violation/pre-enforcement notification on: Oct 4, Dec 21
- Cert holder: self-reported noncompliance on Dec 15 and issued stop-work order at the site; initiated corrective action plan process. Corrective action plan expected in January 2022



Agenda Item I (Information Item)

Cascade Renewables Transmission Project Overview of Potential EFSC-Jurisdictional Facility

January 28, 2022 Christopher Hocker, Cascade Renewable Transmission, LLC





Cascade Renewable Transmission Project

ODOE EFSC Council Meeting



1/28/2022

- Introductions
- Project Overview
- Technical Considerations


Introductions

CRTS Team

- Chris Hocker, PowerBridge Planning
- Ernie Griggs, PowerBridge Project Manager
- Chris Benson, PowerBridge Operations Manager
- Susan Brown, PowerBridge Project Coordinator
- Kelly Goodman, Project Representative
- Corey Kupersmith, Sun2o Partners, Managing Partner

- Victor Holten, Sun2o Partners, Managing Partner
- Suzy Cavanagh, HDR EFSC Lead
- Amy Dammarell, HDR Compliance Lead
- Rona Spellecacy, HDR Project Manager
- Mike Ott, HDR Section 408 Review Lead
- Malia Bassett, HDR Environmental Planner



Project Drivers



Policy Proximity Deficiency



Cascade Project can help the PNW meet climate policies while maintaining system reliability

Renewable Energy Need

Washington

Oregon

- Washington utilities need to procure significant quantities of new renewable energy to meet Clean Energy Transformation Act ("CETA") targets in 2030
- PSE has estimated a renewable energy need of over 2GW of nameplate capacity by 2030 ⁽¹⁾
- Driven both by siting feasibility and economics, new utility scale renewable projects will be almost solely located east of the Cascades
- Passage of HB 2021 in 2021, requiring PGE and PacifiCorp to have renewables supply 80% of energy mix by 2030, and 100% by 2040, necessitate a significant ramp up in renewable procurement to meet Oregon Public Policy
- Load growth driven by electrification and renewable interest of large corporate customers could result in additional near-term renewable energy procurement needs as well



PSE 2021 IRP, Annual Resource Addition Preferred Portfolio.

Per PGE Filing in Docket UM 2166, assuming 30% renewable resource capacity factor, September 13, 2021, and PGE filing in Docket UM 1953 September 17, 2021.

Cross Cascade Constraint







Source: BPA ATC Less Pending Queue as of 10/5/2021, BPA Active Generator Interconnection Queue as of 10/5/2021. Includes interconnection requests Received, In Study, and Completed Study. Does not include Withdrawn or Energized projects or any proposed stand alone Energy Storage projects.



9/23/2021 Source: Esri World Topographic Map

Project Components

- In-river construction
- Land to water transitions
- Upland construction
- Converter stations

Photos: (top) A cable lay barge supports the jet plow installation of Neptune Regional Transmission System's 500kV HVDC underwater cable in New Jersey's Raritan River during 2005; and (bottom) Transbay Cable HVDC VSC Converter Station in San Francisco, CA.





In-River Construction

- Jet plow Installation
 - Buried cable bundle (2 main cables + fiber optic)
 - 18-inch trench width
 - Resettlement of sediment
 - Rate of advancement
- Installation Considerations
 - Depth
 - Bedrock
 - Constraints (Human/Natural)
 - Utility crossings



Photos: The Neptune marine cable bundle is secured aboard the installation barge and fed into New Jersey's Raritan River.



Land to Water Transition

- Horizontal Directional Drilling
 - Size
 - Placement + Direction
 - Installation Considerations
 - Depth
 - Distance to shore
 - Constraints (Human/Natural)

Photo: A typical layout of key elements in an HDD water-to-land cable transition as seen from a proposed HVDC submarine project in New York's Hudson River.



Interconnections (OR)

- Converter station at both ends of HVDC cable, sited near utility substations
- Western termination in Portland at PGE Harborton substation via underwater (HDD) AC cable connecting to CRTP converter station.
- Eastern termination in The Dalles at BPA Big Eddy substation via overhead AC transmission line connecting to CRTP converter station

Timing and Schedule

	2021	2022	2023	2024	2025	2026
Northern Grid	1					
Planning Process			* 2			
WECC Path						
Rating						
Permitting		Į				
Financing						
Real Estate						
Engineering						
Procurement						
Construction						-
Interconnection						-
Testing						
Commercial						
Operation						~



Technical Considerations

- Natural and Cultural Resources
- Bonneville Dam Vicinity
- Navigation Features





9/22/2021 Source: Esri World Topographic Map

Natural Resources

- Species protected under the Endangered Species Act
- Important native migratory fish
- Work "windows" (seasonal restrictions)
- Water quality considerations; inclusive of the Willamette Superfund site
- Wetlands and waters of the U.S.



Photo: Pacific Lamprey.

Bonneville Dam

- Physical Routing and Considerations
- Ownership verification
- Considerations/Input from USACE



Navigation Features

- Working in proximity to channel
- Minimum depths and other considerations
- Pre-dredging options and related sediment management



Photo: The USACE dredge vessel Essayons.

Agenda Item J (Action Item)

Nolin Hills Wind Power Project Hearing Officer Appointment

January 28, 2022 Sarah Esterson, ODOE Senior Policy Advisor



Nolin Hills Wind Power Project

Proposal: 600 MW wind and solar PV energy generation facility

Site Boundary: 48,196 acres with 1,896 acres (2.9 sq. miles) of solar PV

Location: Northwest Umatilla County, near Echo

Applicant: Nolin Hills Wind, LLC (Capital Power Corporation)

Status: Reviewing preliminary ASC for completeness





Oregon Office of Administrative (OAH) Hearings

- Provides an independent and impartial forum for citizens and businesses to dispute state agency actions
- 65 professional administrative law judges (ALJ) for approximately 70 state agencies
- ODOE/EFSC is one of the few agencies not required to utilize OAH
- Entered into agreement with OAH in 2017 based on their expertise in contested cases and the number of ALJ's who could serve as Hearing Officers for EFSC
- To date EFSC has appointed the OAH ALJ's as Hearing Officers for the following projects:
 - o B2H Transmission Line ALJ Allison Greene Webster
 - Obsidian Solar Center ALJ Joe Allen
 - Bakeoven Solar Project ALJ Joe Allen
 - Madras Solar Energy Facility ALJ Joe Allen
 - Eugene to Medford Transmission Line Amendment 4 ALJ Joe Allen
 - Wagon Trail Solar Project Joe Allen



Staff Recommended Hearing Officer

Kate Triana

- Has conducted contested cases for 14 other state agencies since 2013
- Oregon State Bar Certified
- Juris Doctorate from Willamette University College of Law
- Bachelor's Degree in Psychology from Colorado State University



Council Options

Option 1

Appoint ALJ Kate Triana as Hearing Officer (staff recommendation)

Option 2

Do not appoint ALJ Kate Triana as Hearing Officer for specified reasons



Council Deliberation



Adjourn



