SITING AND ENVIRONMENTAL BEST PRACTICES FOR CLEAN ENERGY PROJECTS AND THE 2023 PROCUREMENTS

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/ AGENDA



9:30-11:30 Welcome, Introduction, Solar:

Introduction:

- Clean Energy Investments & Benefits
- Session Goals
- DEEP Procurement Details
- General Project Considerations
- Workshop Framework

Solar Siting and Procurement:

- STEPS update
- Solar Siting and Procurement
- Feedback

11:30-12:30 Lunch Break

12:30-3:30 Additional Renewable Resources:

- Land-Based Wind Siting and Procurement
- Feedback
- Offshore Wind Siting and Procurement
- Feedback
- Additional Renewables
- Feedback
- Public Comment Period

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/ HOUSEKEEPING



- 1. This meeting is being recorded and will be available on <u>DEEP's Energy Filing webpage</u>.
- 2. If you have a question, please submit your name, affiliation, and question into the Chat. The Chat will be monitored for questions, feedback, and technical difficulties.
- 3. During the Feedback portions of the workshop today, please use the raised hand function to speak and you will be promoted to do so. Please keep your microphones muted until called upon. Please identify yourself and your affiliation and turn on your video.
- 4. DEEP will provide an overview of the upcoming procurement and siting best practices and will reserve time for feedback at the end of each section.
- 5. During the Feedback portions, please be mindful to give others an opportunity to speak, please avoid off-topic comments, and please avoid inflammatory language.
- 6. Written comments to help inform development of DEEP's RFPs can be submitted to <u>DEEP.EnergyBureau@ct.gov</u> by 5pm on April 12, 2023. Please include "2023 RFP Comments" in the email subject line. Comments will be posted under the <u>proceedings</u> for the RFPs. There will be a separate public comment period on the draft RFPs once they are released.

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WELCOME: DEPUTY COMMISSIONER HANK WEBSTER & ACTING DEPUTY COMMISSIONER TRACY BABBIDGE

/ INTRODUCTION CLEAN ENERGY INVESTMENTS



Why are we making investments in clean energy?

- Governor Lamont's 100% zero carbon electricity target is now law, making it essential to prioritize zero emission energy sources going forward
- The state's clean energy procurement plan, as articulated in the <u>Integrated Resource Plan</u> and subsequent <u>Procurement Plan Update</u> is an energy investment plan to secure clean, affordable, and reliable energy for Connecticut's residents and businesses

What will our clean energy investments do?

- Secure cost-effective zero carbon resources that can improve the reliability of the electric grid
- Improve affordability by reducing dependence on fossil fuels that are subject to volatile pricing and delivery constraints

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/ INTRODUCTION BENEFITS TO CT RESIDENTS



Clean energy benefits to CT residents:

- Mitigation of impacts from climate change
- Improved reliability
- Bring more cost-effective energy sources online, including by leveraging federal funding opportunities to secure clean energy at lower rates
- Retire inefficient peaking gas and oil powered plants in vulnerable and disproportionately impacted communities
- Create jobs and workforce development opportunities

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/ INTRODUCTION SESSION GOALS



To brief stakeholders on the upcoming offshore wind and grid-scale zero-carbon energy procurements To receive stakeholder feedback on siting best practices and possible procurement criteria To provide an update on potential siting best practices for eligible resources in the procurements

/ INTRODUCTION DEEP PROCUREMENTS



- DEEP is tasked with conducting procurements for grid-scale renewable and zero carbon resources to support Connecticut's greenhouse gas emissions targets, diversify fuel sources, and improve reliability
- Since 2011, DEEP has conducted 9 procurements for grid-scale resources and is working to procure additional zero carbon Class I resources

Scope of the procurements for today:

- Offshore wind procurement
- Zero carbon resources procurement (solar, storage, onshore wind, offshore wind, hydropower, zero carbon fuel cells)

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/ 2023 PROCUREMENT ELIGIBLE TECHNOLOGIES

DEEP Procurement Authority and Eligible Technologies				
	PA 13-303		15-107	19-71
	Sec. 6	Sec. 7	Sec. 1	Sec. 1
Total Authority Granted Under Statute (% of load*, MWh, or MW)	<u><</u> 4%	<u><</u> 5%	<u><</u> 10%	2000 MW
Remaining Authority**	1.4%	5%	7.6%	1196 MW
Eligible Technologies Included in Current Procurements				
Energy Efficiency/Demand Response			Х	
Zero Carbon Fuel Cells	Х	Х	Х	
Geothermal	Х	Х	Х	
Hydropower (run-of-river)	Х	Х	Х	
Landfill Methane Gas	Х	Х	Х	
Offshore Wind	Х	Х	Х	Х
Onshore Wind	Х	Х	Х	
Solar	X	Х	X	
Energy Storage	Х	Х	Х	

* Estimated total load is 26,000,000 MWh

** Total authority less contracted projects from previous procurements

/ 2023 PROCUREMENT QUESTIONS?

Please ask your questions in the Chat and state your name and affiliation. We will answer questions at this time.

/ PROJECT CONSIDERATIONS AND PERMITTING

/ PROJECT CONSIDERATIONS



- Siting best practices are informed by the ongoing Sustainable, Transparent, and Efficient Practices for Solar and the offshore wind Commission on Environmental Standards (CES) stakeholder processes, previous procurements (i.e., SCEF and Zero Carbon), and lessons learned.
 - CES must be convened for each offshore wind procurement under Public Act 19-71



/ PERMITTING RESOURCES



Solar Permitting Environmental Factsheet

Useful for Energy Storage and Zero Carbon Fuel Cell projects too

Offshore Wind Permitting Environmental Factsheet

• For on shore staging, turbine construction, and O&M

Farm-based Anaerobic Digesters Environmental Permitting Factsheet

Useful for any AD project

Siting Clean Energy on Brownfields

Pre-application Permit Assistance

/ ENVIRONMENTAL JUSTICE & EQUITY CONSIDERATIONS



Actions that project applicants could take to maximize benefits to Environmental Justice communities:

- Have a detailed community outreach plan, including providing education on renewable energy
- Conduct an analysis of benefits and burdens to EJ communities
- Provide a description of any siting impacts on EJ communities, including noise and other environmental and health stressors
- Incorporate Diversity, Equity, and Inclusion into professional development and staffing
- Avoid displacing important cultural resources

DEEP's Environmental Justice and Equity webpages

Workforce and Community Development through <u>PA 21-43 An Act Concerning a Just Transition</u> to Climate-Protective Energy Production and Community Investment

- Department of Labor requires a workforce development program
- If >5MW, requires a community benefit agreement

/WORKSHOPFRAMEWORK



For Solar, Land-based Wind, Offshore Wind, and Additional Renewable Technologies, We Will:

- Present Siting Best Practices
- Review Past Procurement Criteria
- Get Feedback on Potential Procurement Criteria for Upcoming Procurements

/ SOLAR

First: a STEPS Update

- 1. Present Siting Best Practices
- 2. Review Past Procurement Criteria
- 3. Feedback on Potential Procurement Criteria for Upcoming Procurements

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/ STEPS UPDATE *OBJECTIVES*

Ensure that new solar generation projects can be sited and built in a predictable, efficient, and transparent manner Include consideration of local laws concerning zoning, the environment or public health and safety

Avoid, or minimize and mitigate, to the maximum extent practicable, adverse impacts on the environment, agricultural, and natural resources

Promote equity and environmental justice through community engagement Ensure that state and/or ratepayer-supported procurements align with the objectives above

/ STEPS UPDATE OVERVIEW



<u>STEPS</u>

- Summer 2021 Scoping Sessions
- Fall 2021 Topics Analysis
- Winter 2021-22 Benchmarking Solar with Northeast States
- Summer 2022-Present Drafting Solar Siting Guidance

/ STEPS UPDATE MORE ON SCOPING SESSIONS

- 45 stakeholders commented citizens, environmental advocates, energy organizations, developers, appointed councils, and municipalities
- 106 comments received, posted on <u>STEPS Website</u>

Key Takeaways:

- Familiarize stakeholders with available guidance on permitting, siting, and other topics
 - Make review process transparent through guidance materials
 - Distinguish between Siting Council's jurisdiction and DEEP's role
- Overarching public wish to re-use developed land, instead of siting on undeveloped land
- Developers noted that locations are limited due to infrastructure
- Developers looking for timely processes when considering brownfield redevelopment
- Consider socio-economic impacts, including additional costs of development, improving economic circumstances, local engagement

/ STEPS UPDATE TOPICS ANALYSIS



Topics Analysis:

- Internal STEPS Team organized scoping comments into 13 topics
- Benchmarking on Identified Topics:
 - 6 Northeast States MA, ME, NH, VT, NY, RI
 - Informs RFP development

Primary Siting Topics	Other Topics of Interest	
• Brownfields	CT Siting Council	
Environmental Justice	Municipal Involvement	
Agricultural Land	 Canopy and Rooftop Solar 	
• Landfills	 Interconnection Challenges 	
 Wildlife (Endangered and Threatened Species) 	 Energy Storage 	
• Stormwater Management and Water Quality	Outreach/Education	
Forests and Wetlands		

/ STEPS UPDATE SOLAR SITING IN CT GUIDANCE



Solar Siting in Connecticut - Best Practices Guidance in the works!

DRAFT Brownfields Guidance

- Drafting team DEEP (Office of Planning and Program Development and Bureau of Energy & Technology Policy) and DECD (Office of Brownfield Remediation and Development)
- Deep dive into best siting practices on brownfields
- Use of scoping comments and benchmarking info
- Incorporation of Environmental Justice practices
- Posted on <u>STEPS Website</u> for stakeholder feedback (<u>DEEP.STEPS@ct.gov</u>)

DRAFT Agrivoltaics Guidance

- Drafting team DEEP (Office of Planning and Program Development and Bureau of Energy & Technology Policy) and Department of Agriculture
- Co-location of solar and agriculture
- Use scoping comments and benchmarking info
- Outreach to stakeholders for feedback

/ STEPS UPDATE FOR MORE INFO





STEPS webpage: <u>https://portal.ct.gov/DEEP</u> <u>/Planning/Steps-for-</u> <u>Solar-Development</u>



STEPS email: DEEP.STEPS@ct.gov



STEPS Newsletter: Sign up to receive email updates to stay up-to-date on STEPS to Solar Development.

/ STEPS UPDATE QUESTIONS?

Please ask your questions in the Chat and state your name and affiliation. We will answer questions at this time.

/ SITING BEST PRACTICES SOLAR



BENEFICIAL SITING as identified through STEPS:

- Use of brownfields promotes cleanup and redevelopment of polluted properties. Makes use of available infrastructure and interconnections.
- Avoid prime farmland. If farmland must be used, co-locating intensive agricultural use (e.g., shade crops, grazing animals, etc.) with solar energy production is preferred.
- Provide for wetland and watercourse buffers of 100 ft.
- Avoid core forest and chose sites that involve limited disturbance.
- Promote on-site mitigation opportunities for vegetation impacts.
- Follow Appendix I in the Stormwater Construction General Permit by reducing grading, addressing runoff, maintaining vegetation, and avoiding steep slopes.
- Have a decommissioning plan.

/ SITING BEST PRACTICES SOLAR AND STORMWATER



Construction Stormwater General Permit

- <u>Appendix I</u> developed in response to stormwater runoff issues specific to large-scale solar
- Developed in coordination between DEEP, engineering consultants, and solar industry representatives
- Includes measures to address:
 - Site slopes
 - Panel row spacing & orientation
 - Soils
- Proximity to wetlands & property line
- Must consider panels impervious for steep slopes or close spacing
- Inspections require Professional Engineer
- May be required to have independent inspections by Conservation District
- Letter of credit required for \$7,500 or \$15,000 per disturbed acre depending on size
- Must control stormwater peak flow discharges

/ SITING BEST PRACTICES SOLAR AND FORESTLAND HABITAT



CORE Forest Impact Map Screening Tool

- For proposed solar arrays greater than two megawatts entering the Siting Council as a Petition
- "Core forest" means unfragmented forest land, three hundred feet or greater from the boundary between forest land and nonforest land (CGS 16a – 3k)
- Petition for a Declaratory Ruling Requires a letter from DEEP Bureau of Natural Resources indicating that the project will not have a material impact upon core forests
- If material impact, a Certificate of Environmental Compatibility and Public Need is required



/ PAST PROCUREMENT CRITERIA SOLAR



THRESHOLD

- No portion of project or interconnection are in core forest, as defined in statute
- Slopes: SCEF: greater than 15% slopes were not accepted, with the exception of landfills where no more than 10% of the project site could be on slopes greater than 15%
- Slopes: 2018 Procurement: No more than 10% of project site and interconnection can be on slopes greater than 15%
- Must include a decommissioning plan
- Avoid ridgelines and ridgeline setbacks (CGS Section 8-1aa)

PREFERRED CRITERIA

- Preferred re-development of land including brownfields, landfills, sand and gravel operations
- Preliminary environmental assessment of the project site for wetlands and watercourse impacts (including public and private drinking water supply), DEEP's Forestland Habitat Impact Map, land use impacts, NDDB species impacts, and impacts to prime farmland and agricultural soils
- Required explanation of potential impacts, proposed mitigation or avoidance measures

/ PROCUREMENT CRITERIA FEEDBACK SOLAR



DEEP is seeking feedback on these criteria. (<u>DEEP.EnergyBureau@ct.gov</u>) Should we incorporate in the RFP and, if so, how?

- Clear process for community engagement and tangible benefits for EJ Communities
- Siting on landfills and brownfields
- Dual use energy generation (agrivoltaics) on unused farmland/farm structures with percentage of farmland maintained for agricultural production
- Co-location of renewable technology with energy storage
- Information and requirements for Decommissioning Plan

To provide comments, please use the raise hand function and state your name and affiliation when called upon.

If you have questions, please add them into the Chat with your name and affiliation.

LUNCHBREAK

/ LAND-BASED WIND

- 1. Present Siting Best Practices
- 2. Review Past Procurement Criteria
- 3. Feedback on Potential Procurement Criteria for Upcoming Procurements

/ SITING BEST PRACTICES LAND BASED WIND



- Certain ridgelines are protected by statute as a natural resource (mostly the traprock ridgelines)
 CGS section 8-1aa (2019) defines ridgeline setback areas and specific locations
- No Material Effect on Core Forest
- Avoid need for large disturbances of land
- Avoid major migratory corridors, including having the ability to adjust speed or operation to avoid key impacts times
- Avoid river floodplain areas (e.g., open locations along the CT river) as they are also key migration routes and could increase strike hazards.
- Incorporate technology to reduce the likelihood of bat strikes, such as pre- and post-installation monitoring approved by DEEP's Wildlife Division.
- Locate where impacts from installation of associated transmission line is minimized

/ PAST PROCUREMENT CRITERIA LAND BASED WIND



- Must have ownership or site control
- Interconnection route has been planned or is currently in review
- No portion of the project or interconnection route located in CT core forest must use mapping tool, as presented in solar section
- Limited impacts to water resources, natural resources including threatened or endangered species, and land use including prime farmland and agricultural soils
- Establish measures to lessen or avoid impacts

/ PROCUREMENT CRITERIA FEEDBACK LAND BASED WIND

DEEP is seeking feedback on this topic. (<u>DEEP.EnergyBureau@ct.gov</u>)

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name and affiliation.

/ OFFSHORE WIND

- 1. Present Siting Best Practices
- 2. Review Past Procurement Criteria
- 3. Feedback on Potential Procurement Criteria for Upcoming Procurements

/ SITING BEST PRACTICES OFFSHORE WIND



- Follow <u>BOEM guidance</u> for construction and operation plan
- Include plans and designated funding for decommissioning
- Consistency with goals and policies of <u>DEEP's Long Island Sound Blue Plan</u>
- Coordination with <u>National Estuarine Research Reserve designation</u>
- Regional/collaborative approach to mitigation and monitoring
- Transparency for data sharing

/ SITING BEST PRACTICES OFFSHORE WIND, LANDING, CABLE

- 3 best locations for interconnection based on current infrastructure New London, Waterford, Bridgeport
- Landing sites should have a mitigation plan for protection of state listed species, especially shorebirds and wading birds
- Bridgeport, Waterford, and New London have very specific considerations for listed species
- Robust stakeholder engagement on cable routing and landing
- Offshore Wind Permitting Environmental Factsheet
- For on shore staging, turbine construction, and O&M

/ SITING BEST PRACTICES OFFSHORE WIND & CABLE



Fisheries

- Avoid or minimize impacts to commercial fishing industry and long-term federal scientific surveys to greatest extent possible
- Mitigate for unavoidable impacts (e.g., lost fishing revenue)
- Robust stakeholder consultation to ensure navigational safety

Wildlife

- Minimize risks from underwater sound, collision, altered animal behavior, electromagnetic fields, and cumulative impacts
- Mitigation plans must address marine mammals, sea turtles, birds, bats, fish, invertebrates, and habitats
 including state and federally listed species as well as species expected to be disproportionately affected

/ SITING BEST PRACTICES OFFSHORE WIND & CABLE



- Consistency with the Long Island Sound Blue Plan (Blue Plan Viewer):
- Choose least impactful routes through Ecologically Significant Areas (e.g., areas of hard bottom and soft sediments)
 use mitigation techniques if impacts will occur
- Co-locate cable installation with others to reduce impact to environment and natural resources
- Avoid/minimize impacts to intertidal flats and coastal wetlands
- Avoid adverse impacts to Significant Human Use Areas (e.g., dredge/disposal areas, ferry routes, recreational fishing, and aquaculture areas)
- Commit to a robust stakeholder engagement process in determining most appropriate cable routes through LIS
- Wildlife and Fisheries impacts avoiding activities during certain seasons, minimize turbidity during cable installation
- Avoid significant displacement of commercial fishing and related activity to the maximum extent practicable, consultation with sector is required
- Use established BMPs for cable burial (6 ft or more as appropriate, concrete aprons where that is not possible, etc.)
- Account for sea level rise and resiliency

/ 2019 COMMISSION ON ENVIR. STANDARDS FOR OFFSHORE WIND



Statute: Section 1 of Public Act 19-71, codified under CGS §16a-3n (a)4

Purpose: To provide input on best practices for avoiding, minimizing, and mitigating any impacts to wildlife, natural resources, ecosystems, and traditional or existing water-dependent uses, including, but not limited to, commercial fishing, during the construction and operation of offshore wind facilities eligible pursuant to the Act.

Timeframe: Commission meetings were held in June and July of 2019, and the <u>Report and Recommendations of the CES for Minimizing and Mitigating Environmental and Commercial Impacts of the Construction and Operation of Offshore Wind Facilities</u> was finalized on August 7, 2019. Quarterly meetings for Park City Wind Project updates have occurred December 2021 to present.

Commission Members:

- Representative David Michel
- Senator Heather Somers
- Representative Anne Hughes
- Senator Paul Formica
- Nick Sisson, NOAA Fisheries

- Gary Yerman, Commercial Fisherman
- Aaron Williams, Commercial Fisherman
- Joe Gilbert, Commercial Fisherman
- Charles Rothenberger, Save the Sound
- Sid Holbrook, Southern New England Fisherman and Lobstermen's Association

- Nathan Frohling, *The Nature Conservancy*
- Corrie Folsom-O'Keefe, Audubon CT
- Sylvain DeGuise, UConn/CT Sea Grant
- Michelle Morin, BOEM
- Zach Cochrum, National Wildlife Federation

/ PAST PROCUREMENT CRITERIA OFFSHORE WIND



2019 OSW RFP:

- Ensure consistency and coordination with marine spatial plans (Coastal and water dependent uses), where
 plans are present for the state/location of proposal
- If activities are proposed within LIS, must show consistency with the goals and policies set forth in CGS Sections 22a-92 and 25-157t(b) (development of a LIS Resource and Use Inventory and LIS Blue Plan)
- Identify and analyze water impacts
- Establish stakeholder engagement
- Describe fishery, avian, and marine mammal impacts and mitigation measures
- Interconnection location onshore Ensure consistency with land use plans (such as Plan of Conservation and Development)

/ PAST PROCUREMENT CRITERIA OFFSHORE WIND

- Provide all necessary documentation for site control and plans to acquire property rights, if needed
- Proposals that include in-water activities outside of CT waters in LIS must include details on how project consistency with all applicable marine spatial plans, including but not limited to, the New York Ocean Action Plan, the Rhode Island Ocean SAMP, the Massachusetts Ocean Plan, and the Northeast Regional Ocean Plan
- Provide environmental and fisheries mitigation plan
- Stakeholder involvement must be well established
- Water impacts are clearly identified and analyzed

/ PROCUREMENT CRITERIA FEEDBACK OFFSHORE WIND & CABLE



- Stakeholder consultation to assess navigational safety of array design and transit lanes
- Compensation of commercial fishermen for lost revenue during various stages of project
- Commitments to facilitate co-existence of commercial fishing and offshore wind development
- Coordination with NY for any project in Long Island Sound
- Sharing survey assessment info publicly or with DEEP
- Use of common cable corridor or designation of preferred routes through LIS
- Use of single point of interconnection
- Components of a plan for sea level rise and resiliency
- Use of CT workforce and supply chains/ CT Business to support offshore wind operations and maintenance

To provide comments, please use the raise hand function and state your name and affiliation when called upon.

If you have questions, please add them into the Chat with your name and affiliation.



OTHER RENEWABLE RESOURCES

- Present Siting and Permitting Practices
- 2. Review Past Procurement Criteria
- 3. Feedback on Potential Procurement Criteria for Upcoming Procurements

/ DEEP DAM SAFETY PERMITTING HYDROPOWER



Step 1: Run of river needed to participate in this procurement

Step 2: Contact FERC to determine if the project is under FERC jurisdiction or non-jurisdictional

- <u>HydropowerPrimer.pdf (ferc.gov)</u>
- FERC requires a 401 Water Quality Certification from DEEP with Fish Passage and Water Quality considerations

Step 3: If FERC determines that the project is non-jurisdictional, DEEP <u>Dams Safety (ct.gov)</u> regulates the dam

- Fish passage must be part of design, developed with DEEP Fisheries consultation in advance of submittal of the dam safety permit application
- The dam should be inspected by a licensed engineer before initiating any project
- Dams regulated by DEEP Dam Safety that are being converted to new or upgraded hydropower will require a Dam Safety permit. In most cases an individual permit will be necessary. Permitting Questions?
 <u>DEEP.DamSafety@ct.gov</u>
- Dams that have a Hazard Classification of High or Significant (C or B) will require an Emergency Action Plan

/ PAST PROCUREMENT CRITERIA HYDROPOWER



2018 Zero Carbon procurement

Impacts to Water Resources:

- Utilize existing dam
- Proposed interconnection route and site improvements have no long-term impacts on water quality and wetland resources
- Consistency with Planning, Conservation and Development plans for the area (Connecticut only)

Impacts to Natural and Ecological Resources:

- Consultation with DEEP Fisheries on need for fish passage (Connecticut projects)
- Mitigation proposed if needed. Design allows for minimum flow in river to support aquatic life.
 Land Use Impacts:
- Existing dam and impoundment, no zone changes are required
- No potential impacts to properties upstream or downstream of dam
- No impacts to core forest or prime farmland

/ OTHER RESOURCES

- Zero Carbon Fuel Cells
- Co-located Energy Storage
- Geothermal
- Landfill Methane Gas
- Interested parties can always come in for a pre-application meeting to learn more about potential permitting requirements.

/ PROCUREMENT CRITERIA FEEDBACK OTHER RESOURCES



DEEP is seeking feedback on these topics. (<u>DEEP.EnergyBureau@ct.gov</u>) Should we incorporate in the RFP and, if so, how?

- Decommissioning of photovoltaic cells, fuel cells, and wind turbines
- Material reuse
- Elements of decommissioning plan equipment and restoration
- Financial assurance

To provide comments, please use the raise hand function and state your name and affiliation when called upon.

If you have questions, please add them into the Chat with your name and affiliation.

/ NEXT STEPS



- Consider feedback from today for incorporation into the draft RFPs.
- Stakeholders can also submit written comments for DEEP's consideration as we draft the RFPs to <u>DEEP.EnergyBureau@ct.gov</u> by 5pm on April 12, 2023. Please include "2023 RFP Comments" in the email subject line. Comments will be posted under the <u>proceedings</u> for the RFPs.
- Commission on Environmental Standards will convene to discuss best practices for the offshore wind RFP.
- For STEPs DEEP will continue to develop siting guidance and share with stakeholders. To review the Solar Siting in Connecticut Guidance: Brownfields, please go to the <u>STEPS website</u> and provide comments to <u>DEEP.STEPS@ct.gov</u>.
- Draft RFPs will later also be released for public comment.

/ PUBLIC COMMENT

1. To provide comments, please use the raise hand function and state your name and affiliation when called upon.

2. If you have questions, please add them into the Chat with your name and affiliation.