Massachusetts Solicitation and Procurement Effectiveness Report

Massachusetts Department of Energy Resources

With Levitan and Associates

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Acronyms

AB	Assembly Bill
AC	Alternating current
AGO	Attorney General's Office
BIL	Bipartisan Infrastructure Law
BOEM	Bureau of Ocean Energy Management
BTM	Behind the meter
CAISO	California Independent System Operator
CAR	Capacity Auction Reforms
CCIS	Capacity Capability Interconnection Standard
CECONY	Consolidated Edison Company of New York Inc.
CECP	Clean Energy and Climate Plan
CECs	Clean Energy Certificates
CES	Clean Energy Standard
CGS	Connecticut General Statutes
CLCPA	Climate Leadership and Community Protection Act
CNR	Capacity Network Resource
COD	Commercial operation date
COP	Construction and Operations Plan
CPEC	Clean Peak Energy Certificates
CPUC	California Public Utilities Commission
CRIS	Capacity Resource Interconnection Service
CSI	Competitive Solar Incentive
CVOW	Coastal Virginia Offshore Wind
DEEP	Department of Energy and Environmental Protection
DEI	Diversity, equity, and inclusion
DGS	Department of General Services
DOER	Department of Energy Resources
DPS	Department of Public Service
DPU	Department of Public Utilities
EDCs	Electric Distribution Companies
EEA	Energy and Environmental Affairs
EO	Executive Order
EPA	Environmental Protection Agency
ERCOT	Electric Reliability Council of Texas
FERC	Federal Energy Regulatory Commission
GCA	Green Communities Act
GEO	Governor's Energy Office
GHG	Greenhouse gas
GIP	Grid Innovation Program
GW	Gigawatts

GWh	Gigawatt-hour
GWSA	Global Warming Solutions Act
HVDC	High voltage direct current
IE	Independent Evaluator
IPP	Independent power producer
IRA	Inflation Reduction Act
IRP	Integrated resource planning
ISC	Index Storage Credit
ISO-NE	Independent System Operator of New England
kW	Kilowatt
kWh	Kilowatt-hour
LCS	Larrabee Collector Station
LI	Long Island
LIPA	Long Island Power Authority
LMP	Locational marginal pricing
LSR	Large-scale renewables
LTTS	Longer-Term Transmission Study
MassCEC	Massachusetts Clean Energy Center
MOU	Memorandum of Understanding
MW	Megawatts
MWh	Megawatt-hours
NECEC	New England Clean Energy Connect
NESCOE	New England States Committee on Electricity
NHSEC	New Hampshire Site Evaluation Committee
NJBPU	New Jersey Board of Public Utilities
NR	Network Resource
NYC	New York City
NYISO	New York Independent System Operator
NYSERDA	New York State Energy Research and Development Authority
OBC	Overburdened Community
OER	Office of Energy Resources
ORECs	Offshore wind renewable energy certificates
OSW	Offshore wind
OTN	Offshore transmission network
OWEDA	Offshore Wind Economic Development Act
PBI	Prebuild Infrastructure
PJM	Pennsylvania-New Jersey-Maryland Interconnection
PLA	Project Labor Agreement
POI	Point of interconnection
POWER	Promoting Offshore Wind Energy Resources Act
PPA	Power Purchase Agreement
PPTN	Public Policy Transmission Need
PSA	Purchase and Sale Agreement
PSC	Public Service Commission

PUC	Public Utility Commission
PURA	Public Utility Regulatory Authority
RECs	Renewable Energy Certificates
RES	Renewable Energy Standard
RFP	Request for Proposals
RIE	Rhode Island Energy
RPS	Renewable Energy Portfolio Standards
RSP	Resource Solicitation Plan
RTO	Regional Transmission Organization
SAA	State Agreement Approach
SCC	State Corporation Commission
SGD	Solicitation Guidance Document
SIP	Storage Incentive Program
SPC	Storage performance credit
TO	Transmission Owner
TSUC	Transmission System Upgrade Cost

Summary

There are limitations to the current single-state, technology-specific procurement model used in Massachusetts. The clean energy procurement process must be revised to achieve the necessary scale and cost-efficiency for new clean energy development to meet emission reduction targets. Massachusetts has significant experience completing clean energy procurements that have resulted in new clean energy projects and a growing offshore wind industry. With each procurement, the process is reviewed and refined. The development and implementation of each solicitation has an open and transparent record with robust public comment. This report reviews past procurements and provides recommendations that will improve and continue to grow the clean energy procurements in Massachusetts.

Introduction

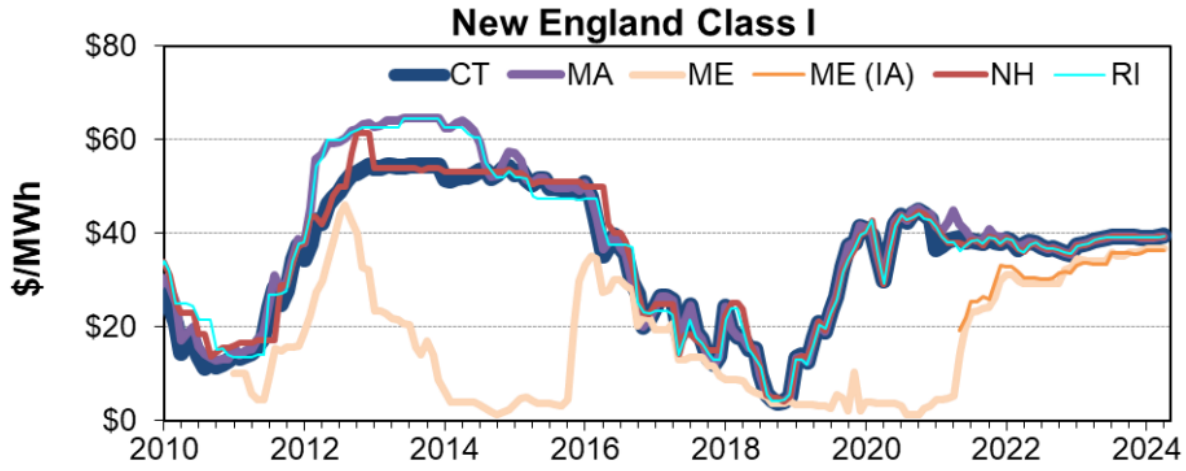
Massachusetts has ambitious greenhouse gas (GHG) reduction targets, including reducing sector-wide GHG emissions to net-zero by 2050. The Commonwealth's strategies to achieve net-zero are described in the Executive Office of Energy and Environmental Affairs' (EEA) Clean Energy and Climate Plan (CECP) for 2025/2030 and 2050. Meeting the Commonwealth's emission reduction targets will require several policies, including the Renewable Energy Portfolio Standard (RPS) and the Clean Energy Standard (CES). The Massachusetts RPS and CES require that retail energy suppliers annually increase the use of renewable and clean energy generation when supplying Massachusetts electricity customers. Under these programs, clean energy generation is incentivized through the creation of transferable energy certificates (RECs and CECs) that are sold by generators at a market price to retail electricity suppliers for their RPS and CES compliance obligations.[1]

The bilateral market for RECs and CECs can often be volatile over the course of a project's lifetime (Figure 1). Market volatility challenges developers to accurately forecast projected REC and CEC market revenue and secure sufficient project financing. To stabilize future revenue, the Commonwealth facilitates financing of new clean energy projects by requiring the electric distribution companies (EDCs) to

[1] Clean Energy Markets Report; Executive Office of Energy and Environmental Affairs in consultation with the Department of Energy Resources and Department of Public Utilities May 24, 2023; available at https://www.mass.gov/doc/final-clean-energy-markets-report/download

solicit and enter into long-term contracts with eligible clean energy projects. These solicitations and procurements are commonly known as the Clean Energy Procurements. The resulting long-term contracts provide secure revenue and improved financing for contracted projects. Section 116 of Chapter 239 of the Acts of 2024, *An Act Promoting a Clean Energy Grid, Advancing Equity and Protecting Ratepayers* (2024 Climate Act) requires the Department of Energy Resources (DOER) to conduct a review to determine the effectiveness of the Commonwealth's solicitations and procurements.[2] This report meets the requirements of the 2024 Climate Act and provides recommended legislative language to improve the procurement process in Massachusetts and support meeting our clean energy goals cost-effectively and in a timely manner.

Figure 1: REC Market Pricing in New England (2010-2024)[3]



Clean Energy Procurements in Massachusetts

Beginning in 2008, Section 83 of the Green Communities Act (GCA) required the Massachusetts EDCs to "solicit proposals from renewable energy developers and, provided reasonable proposals have been received, enter into cost-effective long-

[2] The Clean Energy Procurements are required by sections 83 to 83E, inclusive, of Chapter 169 of the Acts of 2008.

[3] Lawrence Berkeley National Laboratory, Galen Barbose, U.S. State Renewables Portfolio & Clean Electricity Standards: 2024 Status Update, pg 33; available at https://eta-publications.lbl.gov/sites/default/files/lbnl_rps_ces_status_report_2024_edition.pdf
Per 225 CMR 14.08(3)(a)2, the Alternative Compliance Payment for Class I was set at $50/MWh for 2022 compliance year, and $40/MWh for the 2023 and 2024 compliance years.

term contracts to facilitate the financing of renewable energy generation ...." Since the first Section 83 procurements, the GCA has been amended several times, including the additions of Section 83A, Section 83C, Section 83D, and Section 83E. These authorities and subsequent procurements have resulted in the execution of contracts between the Massachusetts EDCs and several clean energy projects.

Figure 2: Current Procurement Process Framework

While legislation has amended solicitation requirements and the Clean Energy Procurement drafters have refined the process over time, the framework for the Clean Energy Procurements has remained consistent. The core document that defines the solicitation is the Request for Proposals (RFP). DOER, the EDCs, and the Independent Evaluator (IE), in consultation with the Attorney's General Office (AGO), draft the RFP. This group, the Drafting Parties, develop an RFP that meets legislative requirements, including ensuring that the solicitation results in fair and open competition. The role of the IE, which was required starting with the Section 83D procurement, is to help ensure an open, fair and transparent solicitation and bid selection process that is not unduly influenced by an affiliated company, and to assist the Department of Public Utilities (DPU) in its consideration of long-term contracts filed for approval.

Table 1: Common Procurement Parties and Their Roles

Procurement Party	Role in Procurement Process
Department of Energy Resources (DOER)	DOER is the State Energy Office, the primary energy policy agency for the Commonwealth. DOER supports the Commonwealth's clean energy goals as part of a comprehensive Administration-wide response to the threat of climate change. In the Clean Energy Procurements, DOER contributes to the RFP drafting and jointly files the RFP at the DPU. DOER is a member of the Evaluation Team and is authorized to select a winning project or projects in consultation with the IE. DOER may monitor contract negotiations.
Electric Distribution Company (EDC)	The EDCs are investor-owned utilities that serve the ratepayers in the Commonwealth. In the Clean Energy Procurements, the EDCs contribute to the RFP drafting and jointly file the RFP at the DPU. The EDCs provide draft contracts for the RFP. The EDCs are members of the Evaluation Team and provide technical advice to DOER for selection. The EDCs negotiate and execute contracts with the selected projects and file contracts with the DPU. The EDCs administer compliance with the contracts and purchase any energy or attributes under the contract. The EDCs either use or sell what they

	purchase under the contract. The EDCs will either recover any cost incurred under the contract or provide any financial benefit to their customers according to a DPU approved tariff.
Attorney General's Office (AGO)	The AGO is the statutory ratepayer advocate in Massachusetts. It uses all tools at its disposal to address the existential threat of climate change and to fight for environmental justice to ensure that all Massachusetts residents can live in healthy and safe communities. In the Clean Energy Procurements, the EDCs and DOER consult with the AGO on RFP drafting. The AGO intervenes in the DPU contract approval proceeding as the ratepayer advocate and to protect the public interest.
Independent Evaluator (IE)	DOER and the AGO jointly select the IE to monitor and report on the solicitation and bid selection process. The IE assists DOER in determining whether a proposal is reasonable. The IE supports the DPU review of the RFP and the contracts by issuing two reports: (1) in the RFP proceeding that analyzes the timetable and method of solicitation and the solicitation process and (2) in the contract proceeding that summarizes and analyzes the solicitation and bid selection process and provides an independent assessment of whether all proposals were evaluated in a fair and non-discriminatory manner. DOER, at its discretion, may request the IE to monitor contract negotiations.
Department of Public Utilities (DPU)	The DPU is a regulatory agency overseen by a three-member Commission. It is responsible for oversight of investor-owned electric power, natural gas, and water utilities in the Commonwealth. In the Clean Energy Procurements, the DPU reviews the draft RFP. The DPU must approve a long-term contract before it can become effective. The DPU review the contracts for being cost-effective to ratepayers over their terms and in the best interest of ratepayers.
Evaluation Consultant	To robustly evaluate the submitted proposals, the EDCs contract with an Evaluation Consultant to help the Evaluation team develop and implement quantitative evaluation protocols. The Evaluation Consultant records the evaluation process and outcomes in the Quantitative Evaluation Report that the EDCs file in the contract approval proceeding at the DPU.
Stakeholders	There are several points in the Clean Energy Procurement process where members of the public, including industry, environmental and energy justice advocates, or other interested parties, can provide comment and advice. The Drafting Team provides draft RFPs or questions for stakeholders for public comment before any filings at the DPU. Additionally, parties can intervene, if allowed, or provide public comment as part of the DPU review proceedings.

DOER and the EDCs jointly file the RFP at the DPU as required by the GCA to review the timetable and method of solicitation.[4] For procurements with an IE, the IE submits

[4] For references to each DPU review of Clean Energy Procurement RFPs, please see Appendix A.

a report to the DPU in the proceeding that analyzes the timetable and method of solicitation and drafting process. The DPU reviews the IE report and the record of evidence in their adjudication to determine if the RFP's timetable and method meets the legislative requirements. If approved, DOER and the EDCs make any required changes from the order and post the RFP. Eligible bidders can develop bids that meet the requirements in the RFP and submit them by the bid deadline.

Before the bid deadline, DOER and the EDCs, monitored by the IE (these three parties are referred to as the Evaluation Team), develop a detailed evaluation protocol. For offshore wind procurements beginning with 83C Round IV, the Executive Office of Economic Development (EOED) is also a member of the Evaluation Team. The Evaluation Team is supported by an Evaluation Consultant with significant energy market experience that helps develop and implement electric sector modeling as part of the evaluation protocols. Following bid submittal, the Evaluation Team reviews the confidential bid information, implements the protocols, and scores projects. DOER, in consultation with the IE, and with the technical advice from the EDCs, may select one or more projects that will provide benefits to the Commonwealth. The EDCs enter into contract negotiations with selected projects. The EDCs file executed contracts at the DPU for their review and approval. Once contracts are approved, the selected project developers can use the executed contracts to secure financing. This allows the developers to begin capital investment in their project development. Reviews of previous procurements demonstrated that selected bidders were able to finance projects based on the awarded power purchase agreements (PPAs).[5]

Once online, projects sell clean energy and/or associated environmental attributes to the EDCs through the executed contracts at pre-defined prices. The EDCs sell the energy and any attributes they do not use to meet their basic service supply RPS and CES obligations. This sale of extra attributes allows retail electric suppliers, such as those that supply energy through municipal aggregations, to purchase attributes for RPS and CES compliance.

[5] Study on Long-Term Contracting Under Section 83 of the Green Communities Act, Peregrine Energy Group, Inc., December 31, 2012, at 3; available at https://archives.lib.state.ma.us/server/api/core/bitstreams/f32a1f85-bac5-4b72-bf28-9209523d49f3/content

Evaluation Structure

All Clean Energy Procurement authorizing legislation requires that contracts meet specific criteria, including being cost-effective to Massachusetts electric ratepayers over the term of the contract. To make sure that selected bids meet legislative requirements and are in the public interest, the Evaluation Team robustly evaluates bid costs and benefits. The evaluation framework and bid scoring are defined in (1) the RFP and (2) the evaluation protocols. The RFP describes the evaluation framework in enough detail that bidders know the types of costs and benefits the Evaluation Team will consider. The RFP outlines a three-stage evaluation structure: Stage 1: Threshold and Eligibility Criteria, Stage 2: Quantitative and Qualitative Evaluation, and Stage 3. The Evaluation Team develops protocols for each Stage after the RFP has been posted and before any bids are opened that define the modeling and calculations that prescribe the detailed evaluation and scoring. These protocols ensure that each bid is evaluated fairly and consistently. The protocols are not shared with bidders before bid submittal to ensure that there is no gaming of the scoring.

To determine if contracts meet the legislative cost-effective requirement, the DPU considers "all costs and benefits associated with [a proposed contract], including the non-price benefits that are difficult to quantify" (D.P.U. 10-54).[6] The Evaluation Team therefore develops evaluation protocols that address all known costs and benefits, whether they can be quantified (in terms of project price and market benefits) or not (qualitative). The Evaluation Team also must relatively weight quantitative and qualitative benefits to rank proposals, which is achieved through weighted scoring. As qualitative requirements have been added to the Clean Energy Procurement legislation, the Evaluation Team has changed score weighting from 80/20 quantitative/qualitative in Section 83 to 70/30 in the most recent Section 83C procurement.

Energy Market and Price Evaluation - Quantitative

The Clean Energy Procurement authorizing legislation requires that selected projects be cost-effective. The Clean Energy Procurements incentivize proposals with lower prices through competition by being fair and open. Developers bid competitive pricing to increase their chances of securing long-term contracts that reduce their financial risk. Therefore, the majority of each bid's score is for the proposal's

[6] D.P.U. 10-54, Final Order, November 22, 2010, pg. 71; available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom//9274703

quantitative benefits, which reflect the market benefits of the project at the bid price. The Evaluation Team assesses the project's costs over the term of the contract, based on its price offer, and compares those costs to all the quantifiable energy and market benefits of the project over the same term. This is evaluated as a "but for" scenario – what are the electricity system costs without the project in service (the base case) and what are the electricity system costs with the project in service (the proposal case). The difference between these two cases is the total benefit of the proposed project.

This evaluation method requires electric system modeling for the term of the contract. The Evaluation Team develops the base case assumptions with the Evaluation Consultant, who ultimately implements the modeling. The Quantitative Evaluation Report, which is filed with the contracts at the DPU, outlines the base case assumptions and the quantitative calculations. The base case changes with each procurement as energy system forecasts, such as natural gas prices or power plant retirements and planned additions, are updated. A project's quantitative costs and benefits will depend on the project's bid price, capacity size, interconnection point where it connects to the onshore electric grid, commercial operation date when it will begin delivering energy, and other factors.

Quantitative benefits can either be direct or indirect. Direct costs and benefits are associated with the contract cost of the products the project is proposing to sell (i.e. energy and attributes) compared to the expected market costs of those products. Indirect benefits are the impacts to wholesale energy and environmental attributes markets, such as market forecast changes due to increased clean energy supply.

The 83C Round IV RFP notes that the Evaluation Team may consider the following quantitative benefits:

i. The impacts of changes in locational marginal pricing (LMP) paid by ratepayers in the Commonwealth, taking into consideration contracts already executed by the Distribution Companies;
ii. The impacts on RPS and/or Clean Energy Standard compliance costs paid by ratepayers in the Commonwealth;
iii. Additional impacts, if any, from the proposal on the Commonwealth's GHG emission rates and overall ability to meet Global Warming Solutions Act (GWSA) requirements will be evaluated using an economic proxy value for their contribution to GWSA requirements, as determined by the Evaluation Team;

iv. Indirect impacts, if any and to the extent the Evaluation Team determines such impacts are reliably quantifiable, for retail ratepayers on the capacity or ancillary services market prices with the proposed project in service;
v. The impact on contributing to reducing winter electricity price spikes;
vi. Indirect impacts for retail ratepayers on Clean Peak Energy Certificates (CPEC) market prices, if any and to the extent the Evaluation Team determines such impacts are reliably quantifiable and meaningful, with the proposed project in service; and
vii. Indirect impacts from additional project capacity under agreement for contract to third-party off-takers (e.g., businesses, nonprofit organizations, municipalities or municipal aggregations).

Non-Price Evaluation – Qualitative

The Clean Energy Procurement can influence bids' non-price commitments through both (1) requiring specific threshold and eligibility standards that all bids must meet and (2) preferring or providing more qualitative points for specific commitments or criteria.

For example, the Section 83 Procurements include non-energy requirements for all bidders as part of the Stage 1: Threshold and Eligibility evaluation. The Section 83C Procurement Round IV RFP includes the following non-energy bidder requirements:

- Site control and related agreements
- Technical and logistical viability
- Ability to finance the proposed project
- Bidder experience
- Adequately demonstrate project viability in a commercially reasonable timeframe
- Contribution to employment economic development benefits
- Environmental and Fisheries Mitigation Plan
- Benefits to environmental justice populations and low-income ratepayers in the Commonwealth
- Diversity, equity, and inclusion (DEI) plans for workforce and suppliers

Bidders must meet each of these Stage 1: Threshold and Eligibility requirements to be eligible for the solicitation.

In addition to the threshold and eligibility non-energy requirements, the Section 83 procurement process includes preferences for non-energy requirements, which are considered during evaluation. The Evaluation Team develops a Qualitative Evaluation

Protocol that describes the criteria for scoring, as well as the maximum number of points each bidder can receive for each criterion. Point allocations remain confidential, even at the time of filing contracts, to prevent bidders from gaming the scoring. Criteria generally fit into two categories: project viability and economic development. Project viability criteria address the likelihood that a project will successfully move from selection to operation of the provided project development schedule. Economic development criteria address the investments the project will make in generating employment and economic benefits, as well as socio-economic impacts like environmental mitigation.

In the Section 83C Round III Procurement, the Qualitative Evaluation Protocol included the following non-price criteria:[7]

- Experience of the Bidder: This criterion addresses the relative experience and expertise of the bidder and eligible project team to successfully develop, finance, construct, and operate and maintain its proposed eligible project.
- Critical Path Schedule/Commercial Operation Date Certainty: This criterion addresses whether or not the schedule proposed by the Bidder is complete and credible for meeting the proposed construction start date and commercial operation date (COD). "Credible" means that the project has a likelihood of meeting the milestones in a timely manner to ensure the project meets its in-service date. In addition, the Bidder has identified the tasks on the critical path and any potential impediments to project development and has a reasonable plan to mitigate the impediment.
- Interconnection Status and Viability of Plan: This criterion assesses the status of the Bidder regarding Independent System Operator of New England's (ISO-NE) interconnection requirements and the credibility of the proposed interconnection plan. Projects which are further along in the ISO-NE interconnection process will be preferred in this criterion.
- Financing Plan and Financial Strength of Bidder: This factor addresses the comprehensiveness and reasonableness of the financial plan for the project.
- Energy Resource Plan: This criterion addresses the quality of the wind energy resource plan proposed. Projects must clearly demonstrate the availability of the required wind resource and the credibility of the proposed delivery profile. The quality of the resource plan, the availability and quality of resource data,

[7] An updated Section 83C Round IV Evaluation Protocol will be filed at the DPU with the executed contracts for approval.

and other supporting information will be considered to provide assurance that the generation facility will be able to meet its projected production estimates for the full term of the PPA.

- Site Status: This criterion relates to the status of site control and property rights of the project sponsor, as well as the current status of efforts to secure site control and real property rights necessary for the project, including transmission and interconnection facilities.
- Permit Approval including Zoning and Conformance with Applicable Federal Energy Regulatory Commission (FERC) Regulatory Requirements: This criterion evaluates the credibility of the Bidder's plan to obtain required permit approval (including obtaining any required easement, zoning variances or zoning changes), the status of the permitting process, and the degree of certainty offered by the Bidder in securing the necessary permits and approvals.
- Stakeholder Engagement: This criterion assesses the status and completeness of project stakeholder engagement plan, including demonstrated evidence of past and current productive relationships with project stakeholders.
- Reliability Benefits and Energy Storage: This criterion evaluates the degree to which the Bidder's proposal may provide reliability benefits to Massachusetts separate from and in addition to those addressed in the Quantitative Analysis and the extent to which the proposed project for Offshore Wind Energy is to be paired with energy storage systems that demonstrate reliability and/or operational benefits consistent with the proposed operational requirements and commitments.
- Exceptions to Pro Forma PPA: This factor addresses the extent to which bidders accept provisions of the Pro Forma PPA. Bidders who propose material changes to the PPA that may significantly and adversely change the risk allocation in the PPA to the detriment of the buyers and their customers will not be highly scored.
- Environmental Impacts from Siting – Natural Resources: This factor addresses the extent to which a project demonstrates an understanding of potential adverse environmental impacts during construction and operation of the offshore wind generation facility. Bidder provides a feasible plan that details, to the extent practical, specific measures the bidder will take to avoid, minimize, and/or mitigate potential biological and ecological impacts on natural resources.
- Socioeconomic Impacts from Siting – Commercial Fishing, Tourism, Recreation, Visual/Aesthetic, Cultural Impact: Bidder provides a comprehensive assessment that details, to the extent practical, specific measures the Bidder

will take to avoid, minimize, or mitigate potential socioeconomic impacts from siting associated with the commercial fishing industry, tourism, recreation, cultural resources, or visual and aesthetic impacts (including both the scope and scale of the impacts both at night and during the day).

- Economic Benefits to the Commonwealth; Benefits to Low Income Ratepayers: This factor evaluates the extent to which bids "where feasible, create and foster employment and economic development in the Commonwealth," per the Green Communities Act, Section 83C (d)(5)(xi).[8]

Non-Energy Commitments

The Clean Energy Procurement legislative language directs the EDCs to enter into power purchase agreements for energy and/or associated environmental attributes. This limits the EDCs from securing other non-energy commitments as part of the contracting process. In order to secure bidder non-energy requirements that were either required or preferred during the solicitation, the Section 83C procurements have utilized parallel agreements between the selected bidders and DOER and MassCEC (Massachusetts Clean Energy Center) (DOER/MassCEC Agreement). The first such agreement was part of the Section 83C Round I solicitation with Vineyard Wind. In the most recent Section 83C Round IV, a draft DOER/MassCEC Agreement for bidders to markup was included as Appendix L of the RFP.[9] As part of their bids, the project developers will outline proposed investments to third parties, which could include funds for workforce training, environmental mitigation, or low-income ratepayer benefits. All the selected project's direct investments and financial commitments are secured with a backstop agreement to pay MassCEC any funding that was unable to be assigned to the third party as planned.

The DOER/MassCEC Agreement requires that the selected projects provide written annual progress reports that describe progress in achieving the wind industry development goals, the direct economic investment commitments, the workforce and supply chain initiatives, and the wildlife and habitat assistance funding.

While the Clean Energy Procurements typically have not required that developers executed project labor agreements (PLAs) and prevailing wages, successful projects are likely to meet these standards to receive favorable tax treatment under the

[8] Qualitative Evaluation Protocol, D.P.U. 20-16/20-17/20-18 WP Support Tab D.
[9] MA D.P.U. 23-42, IE Report at 10. Appendix L, available at https://macleanenergy.com/wp-content/uploads/2023/08/83c-rd4-rfp-8.30.2023.pdf

Inflation Reduction Act (IRA). The IRA requires eligible projects to meet a prevailing wage requirement and an apprenticeship requirement in order to receive the Investment Tax Credit or Production Tax Credit. The prevailing wage requirement is detailed in Internal Revenue Code 45(b)(7)(A), which states that "The requirements … with respect to any qualified facility are that the taxpayer shall ensure that any laborers and mechanics employed by the taxpayer or any contractor or subcontractor in … the construction of such facility, and ... the alteration or repair of such facility, shall be paid wages at rates not less than the prevailing rates for construction, alteration, or repair of a similar character in the locality in which such facility is located as most recently determined by the Secretary of Labor…" The prevailing wage rates required are published as wage determinations by the Department of Labor's Wage and Hour Division. Taxpayers are required to maintain sufficient records to demonstrate that they met this requirement. The apprenticeship requirement consists of the labor hour requirement, ratio requirement, and participation requirement. There is a Good Faith Effort Exception, which states that a taxpayer is deemed to have satisfied the apprenticeship requirements with respect to a qualified facility if the taxpayer has requested qualified apprentices from a registered apprenticeship program and the request is denied or not responded to within five business days.[10]

[10] U.S. Department of Labor, Inflation Reduction Act Prevailing Wage and Apprenticeship Requirements, U.S. Department of Labor Presentation, available at https://www.dol.gov/sites/dolgov/files/WHD/IRA-presentation.pdf

Outcomes Of Previous Procurements

Table 2: Previous Procurements in Massachusetts

Clean Energy Procurement	Year	Size	Project(s)
Section 83	2010	Approx. 150 MW (reached commercial operation)	Onshore Wind, Hydroelectric, Cape Wind (cancelled)
Section 83A and Multi-State	2013 2014	Approx. 500 MW (reached commercial operation)	Onshore Wind and Solar
Section 83D	2017	9.55 TWh	New England Clean Energy Connect (NECEC)
Section 83C Round I	2017	800 MW	Vineyard Wind 1
Section 83C Round II	2019	804 MW	SouthCoast Wind (formerly Mayflower Wind) – Contract Cancelled
Section 83C Round III	2021	1600 MW	Commonwealth Wind and SouthCoast Wind (formerly Mayflower Wind) - Contracts Cancelled
Section 83C Round IV	2023	1878 MW	New England Wind 1 (formerly Park City Wind) and SouthCoast Wind – Contracts Under Negotiation. Vineyard Wind 2 (Exited Negotiation)
Section 83C Round V	2025	*TBD*	
Section 83E Round I	2025	*1500 MW*	

Section 83

The Clean Energy Procurements were established with the enactment of chapter 169 of the Acts of 2008, the GCA. Section 83 required each EDC to solicit proposals from renewable energy developers and enter into long term contracts that facilitate the financing of eligible projects. This Section 83 language established the framework for the procurement process that is still in effect today.

Section 83 resulted in two processes. The first was an RFP filed by the EDCs in consultation with DOER in September 2009, approved by the DPU in December 2009, and posted in January 2010 (D.P.U. 09-77). The second process was a memorandum of understanding (MOU) between National Grid, DOER, and Cape Wind Associates, LLC (Cape Wind) (D.P.U. 09-138). This MOU outlined the agreement National Grid had with Cape Wind to purchase energy and RECs from the future 468 megawatt (MW) offshore wind project. In approving the MOU, the DPU noted the final contract would be subject to DPU approval as well.

Section 83 required that projects be located within the jurisdictional boundaries of the Commonwealth, including state waters, or in adjacent federal waters. This language was challenged as being in violation of the Commerce Clause of the United States Constitution as it discriminated against out-of-state generators.[11] Following this legal challenge, the DPU exercised its authority under Section 83 and suspended the requirement for in-state resources in the previously approved RFP. To preserve the competitiveness of the procurement for out-of-state resources, the RFP was revised and opened for new and refreshed bid submissions (D.P.U. 10-76).

In February 2011, NSTAR Electric Company sought approval for three contracts for renewable energy and RECs resulting from the approved Section 83 RFP (D.P.U. 11-05; D.P.U. 11-06; D.P.U. 11-07). Additionally, Unitil sought approval for one contract with a hydroelectric facility on March 14, 2011 (D.P.U. 11-30). As part of the DPU proceedings, the EDCs described the evaluation and selection process, demonstrating that the process was fair and open. The DPU reviewed key issues raised by the parties, including facilitating the financing, enhanced reliability, moderation of system peak load requirements, employment benefits and cost-effectiveness. The AGO provided recommendations on future procurements but the DPU found that the current proceedings were not the appropriate forum as the RFP drafting process is in collaboration with DOER who was not a filing party. The DPU approved the EDC contracts for energy and RECs from onshore wind and hydroelectric facilities for a 10-year and 15-year term.

Section 83A

Chapter 209 of the Acts of 2012, *An Act Relative to Competitively Priced Electricity in the Commonwealth*, expanded the Section 83 procurements by increasing the number of solicitations and modifying the procurement process. For the first solicitation under Section 83A, the EDCs originally filed 24 contracts for approval, although withdrew 12 from consideration before the final order due to a termination for one project and failure to post security for two others. Ultimately, the DPU reviewed and approved 12 contracts with a term of 15 years for over 1 gigawatt-hour (GWh) of onshore wind energy (D.P.U. 13-146; D.P.U. 13-147; D.P.U. 13-148; D.P.U. 13-149).

The second procurement under Section 83A is often referred to as the Multi-State 83A Procurement as Massachusetts conducted the solicitation, evaluation, and

[11] TransCanada Power Marketing Ltd. v. Bowles et al, Civil Action No. 4:10-cv-40070-FDS

contract negotiation with Connecticut and Rhode Island. DPU approved the RFP in D.P.U. 15-84 and the EDCs opened the solicitation in November 2015. Eligible projects had a commercial operation date on or after January 1, 2013, and any technology eligible for the Massachusetts RPS. As the RFP was done in coordination with Connecticut and Rhode Island, the solicitation also sought qualified large-scale hydropower resources and/or from developers of transmission projects to provide for the delivery of incremental clean energy into the New England system. The three states collaborated on a single, consensus evaluation and scoring of each project and a single ranking of all 19 bid proposals.[12] Massachusetts selected and filed executed contracts with 10 solar and onshore wind projects.[13] Although the Multi-State 83A solicitation received bids for transmission capacity, there were no selected projected with transmission capacity because "the authority to purchase hydropower was explicit with Connecticut, in the case of Massachusetts, the purchase of large hydropower is not explicit in Section 83A."[14]

Section 83D

Chapter 188 of the Acts of 2016, *An Act to Promote Energy Diversity,* inserted new solicitation authority, Sections 83B, 83C and 83D, into an *Act Relative to Green Communities*. These new Sections built upon the structure of the Section 83 and Section 83A solicitation but added new eligible resources and new targets. The new legislation required the Section 83D solicitation be posted by April 1, 2017. Therefore, the EDCs and DOER proceeded with Section 83D before Section 83C.

The EDCs in coordination with DOER filed the draft Section 83D RFP at the DPU in February 2017.[15] The draft RFP, pursuant to Section 83D of the GCA, solicited proposals for incremental Clean Energy Generation and associated environmental attributes and/or RECs under long-term contracts, which may include associated transmission costs. The Drafting Parties developed the draft RFP in consultation with the AGO and monitored by an IE – the first Clean Energy Procurement with an IE.

The 83D solicitation sought proposals for clean energy generation, including firm hydroelectric or Class I RPS-eligible renewable energy, to provide 9,450,000 megawatt-hours (MWh) of annual energy. The RFP was released on March 31, 2017,

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[12] MA D.P.U. 17-117/D.P.U. 17-118/ D.P.U. 17-119/ D.P.U. 17-120, Joint Testimony of Waltman/DiDomenico/Glover, p. 25; available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom//9173697
[13] Id. at 41.
[14] Id. at 39.
[15] MA D.P.U. 17-32.

and resulted in 53 distinct bid proposals from various generating facilities located across New England, as well as in adjacent control areas.

DOER and the EDCs evaluated all the bids received using the three-stage evaluation process. The 83D statute authorized the EDCs to select, but since the EDCs were unable to reach consensus on a selection, DOER, in consultation with the IE, made the final selection decision. The two top-ranked projects following the evaluation were the Northern Pass project and the New England Clean Energy Connect (NECEC) project, both of which were proposals for energy and transmission to deliver firm hydroelectric energy from Hydro Quebec.

DOER, in consultation with the IE, initially selected the Northern Pass project because it had a proposed in-service date in 2020, which was two years earlier than the NECEC project, and would therefore enable earlier emissions reductions and GWSA benefits for Massachusetts ratepayers.[16] However, shortly after DOER announced the selection of Northern Pass, the New Hampshire Site Evaluation Committee (NHSEC) voted on February 1, 2018, to deny a Certificate of Site and Facility for Northern Pass.[17]

Following the NHSEC decision, DOER and the EDCs determined that the denial of this key permit had the potential to significantly affect the timeline of the Northern Pass project's in-service date. The EDCs began contract negotiations with the NECEC project and in March 2018, the EDCs terminated contract negotiations with Northern Pass. The EDCs executed long-term contracts with NECEC and filed at the DPU for approval. Parties in the DPU approval proceeding challenged the EDCs and DOER's evaluation of incremental clean energy versus new clean energy and the interpretation of the legislative directive that the solicitation procure approximately 9,450,00 MWh of annual energy. Ultimately, DPU approved the contracts as executed on June 25, 2019.[18]

83C Round I and Offshore Wind Study

DOER and the EDCs launched the first round of offshore wind solicitations under Section 83C with the release of an RFP on June 29, 2017, following DPU approval

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[16] DOER, RE: Petitions for Approval of Proposed Long-Term Contracts for Renewable Resources Pursuant to Section 83D of Chapter 188 of the Acts of 2016, D.P.U. 18-64, 18-65, 18-66, pg. 3; available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom//9637594.
[17] Id.
[18] MA D.P.U. 18-64; D.P.U. 18-65; D.P.U. 18-66, Order; available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom//10881348.

(D.P.U. 17-103). The solicitation generated 18 proposals from three developers: Bay State Wind, Deepwater Wind, and Vineyard Wind.[19] The outcome of the solicitation was the selection of the 800 MW Vineyard Wind 1 project, and the EDCs executed PPAs with Vineyard Wind on July 2, 2018. The DPU reviewed and approved the contracts on April 12, 2019.

The successful solicitation for the Vineyard Wind project was a historic milestone for Massachusetts, representing the first contract for a utility-scale offshore wind project in the United States. The contract price, at an average of $89/MWh in nominal dollars,[20] was significantly lower than the contract price for the Cape Wind project and signaled to other market participants that offshore wind was a cost-competitive clean energy resource for the region.

Following the successful first solicitation under Section 83C, in 2018, the Governor signed into law *An Act to Advance Clean Energy*, Chapter 227 of the Acts of 2018, which required DOER to study the necessity, benefits and costs of requiring the EDCs to conduct additional solicitations and procurements for up to 1,600 MW of additional offshore wind. The legislation also directed DOER to evaluate the previous 1,600 MW solicitation under Section 83C and the associated procurement process and make recommendations for any improvements.

The Offshore Wind Study was published on May 31, 2019. The DOER Offshore Wind Study used extensive stakeholder outreach and quantitative energy sector modeling. DOER found that an additional solicitation of 1,600 MW would likely provide greater benefits for Massachusetts ratepayers than the anticipated costs of the contracts as long as offshore wind pricing remains similar to the first 83C solicitation or continues to decline. DOER therefore recommended and required the EDCs to proceed with an additional 1,600 MW of offshore wind generation solicitations.[21]

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[19] Joint Testimony of Waltman/Brennan/Glover, D.P.U. 18-76/18-77/18-78, filed July 31, 2018. See page 18, lines 12-16.

[20] MA D.P.U., DPU Order on Vineyard Wind 1 contracts, available at https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/10617252.

[21] MA DOER, Letter to the TUE Committee regarding the Offshore Wind Study (May 31, 2019), available at .https://www.mass.gov/doc/offshore-wind-study-committee-letter-may-2019/download.

Section 83C Round II

DOER and the EDCs issued an RFP for a second round of offshore wind solicitations under Section 83C on May 23, 2019. The RFP solicited up to 800 MW of offshore wind. The RFP was revised and reissued on August 7, 2019, in response to legislative changes. Section 83C as originally drafted required all proposals to have a price less than the price resulting from the previous solicitation (referred to as a "price cap" requirement). *An Act Relative to Offshore Wind Contract Pricing* (Chapter 48 of the Acts of 2019) temporarily eliminated the price cap requirement for the Section 83C Round II solicitation and the 83C Round II RFP was revised to remove this requirement.

The 83C Round II solicitation generated 18 proposals from three developers: Bay State Wind, Mayflower Wind,[22] and Vineyard Wind.[23] The outcome of the solicitation was the selection of the 804 MW Mayflower Wind project, and the EDCs executed long term contracts with Mayflower Wind on December 13, 2019. The DPU reviewed and approved the contracts on November 5, 2020.

Section 83C Round III

Prior to launching the third 83C solicitation, the RFP Drafting Parties, consisting of DOER, the EDCs, and the AGO, released a draft version of the RFP for public comment on February 8, 2021. Stakeholders, including prospective offshore wind bidders, environmental and advocacy non-profit organizations, industry groups, and individual residents submitted comments to the RFP Drafting Parties.

The final RFP for the 83C Round III solicitation was released on May 7, 2021, soliciting up to 1,600 MW of offshore wind. The 83C Round III RFP included new provisions directing bidders to describe potential impacts on Environmental Justice Populations and to include a DEI Plan covering workforce and supplier diversity. The RFP also increased the share of evaluation points allocated to qualitative factors from 25 to 30 out of 100.

The 83C Round III solicitation generated six proposals from two developers: SouthCoast Wind (formerly known as Mayflower Wind) and Commonwealth Wind.[24] The outcome of the solicitation was the selection of two projects: 1,200 MW of a

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[22] Note that Mayflower Wind subsequently changed its business name to SouthCoast Wind.
[23] Joint Testimony of Waltman/Brennan/Glover, D.P.U. 20-16/20-17/20-18, filed February 10, 2020, see page 20, lines 6-10.
[24] Joint Testimony of Waltman/Wilson/Brennan Glover, Exhibit JU-1, D.P.U. 22-70/ 22-71/ 22-72, filed May 25, 2022, see page 19, lines 15-18.

1,232 MW project from Commonwealth Wind and 405 MW of a 480 MW project from SouthCoast Wind. The EDCs executed PPAs with both project developers on March 28, 2022. The DPU reviewed and approved the contracts on December 30, 2022.

However, in the summer of 2023, the EDCs filed agreements with the DPU, at the request of the developers, to terminate the Commonwealth Wind and SouthCoast Wind contracts. For SouthCoast Wind, the termination represented the full 1,200 MW project selected through both 83C Round II and 83C Round III solicitations. Both SouthCoast Wind and Commonwealth Wind requested termination because the development of the projects was no longer tenable due to significant inflationary pressures and supply chain issues. The negotiated termination agreements between the developers and the EDCs included Termination Payments totaling $108 million, which were credited back to Massachusetts ratepayers.

Section 83C Round IV

The *Act Driving Clean Energy and Offshore* Wind, signed by Governor Baker in 2022, included several changes to the Section 83C statute, which were reflected in the 83C Round IV solicitation. The *Act* established DOER, in consultation with the IE, as the party that selects winning proposals from a Section 83C solicitation, as opposed to the EDCs, as in prior solicitations. The *Act* also changed the evaluation process such that proposals were subject to review by DOER and the Executive Office of Economic Development, in consultation with the IE, with the EDCs offering technical advice. The Act included other new required evaluation criteria relating to economic development and environmental impacts. These statutory changes were reflected in the 83C Round IV RFP.

In February 2023, the RFP Drafting Parties issued a request for public comment on a fourth round 83C solicitation. Developers and stakeholders submitted comments regarding the procurement size and schedule, how best to design the procurement to respond to macroeconomic factors like inflation, and how to maximize ratepayer benefits from federal funding opportunities available through the IRA and Bipartisan Infrastructure Law (BIL). Following the public comment process, the RFP Drafting Parties submitted a final RFP to the DPU for review, which was subsequently approved and issued on August 30, 2023.

In response to the macroeconomic volatility that led to the Round III contract terminations, the 83C Round IV RFP included an option for bidders to propose an

alternative Indexed Price Bid,[25] which would be subject to an Indexing Adjustment one year following an Order from the DPU approving the long-term contracts resulting from the solicitation. The Indexing Adjustment would increase or decrease the Indexed Price Bid price by up to 15% based on the change in a set of macroeconomic and/or commodity indices.

Prior to receiving bids under the Round IV RFP, Massachusetts entered into a historic multi-state MOU with Connecticut and Rhode Island on October 3, 2023.[26] This Multi-State MOU outlined how the three states may coordinate selection of offshore wind as each state solicits offshore wind energy generation through their respective state procurements. The goal of the MOU was to allow the three states to seek multi-state offshore wind proposals that would expand benefits for the region, capture cost reductions by developing projects at scale, and develop into viable projects.

DOER and the EDCs extended the deadline for bid submission for 83C Round IV by approximately two months to allow bidders greater certainty regarding important tax credits available from the federal government. On March 27, 2024, three bidders submitted confidential proposals in response to the 83C Round IV solicitation: Avangrid, SouthCoast Wind, and Vineyard Offshore.

Massachusetts coordinated its review of multi-state proposals with Connecticut and Rhode Island. Following a complete review and evaluation of all bids received, Massachusetts announced its selection of projects from the 83C Round IV solicitation on September 6, 2024. Massachusetts and Rhode Island together selected 2,878 MW of offshore wind from three projects. Massachusetts selected 1,087 MW of the 1,287 MW SouthCoast Wind multistate project, the entire 791 MW New England Wind 1 project, and up to 800 MW of the 1,200 MW Vineyard Wind 2 project.

Following the selection announcement, the Massachusetts and Rhode Island utilities entered into contract negotiations for the selected projects. In December 2024, Vineyard Offshore withdrew its Vineyard Wind 2 project from contract negotiations because they were not able to secure contracts for the full 1,200 MW project. As of April 2025, contract negotiations for New England Wind 1 and the SouthCoast Wind multistate projects are ongoing.

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[25] MA DOER, 83C Round IV RFP Section 2.2.1.5, available at https://macleanenergy.com/wp-content/uploads/2023/08/83c-rd4-rfp-8.30.2023.pdf

[26] https://www.mass.gov/doc/ma-ri-ct-offshore-wind-procurement-collaboration-memorandum-of-understanding/download?_gl=1%2A1v0wbf0%2A_ga%2ANzUwNDI5MDE3LjE2NTA5ODEyMjQ.%2A_ga_SW2TVH2WBY%2AMTY5NjM3MzE1My44OS4xLjE2OTYzNzMzMDEuMC4wLjA.

Section 83E

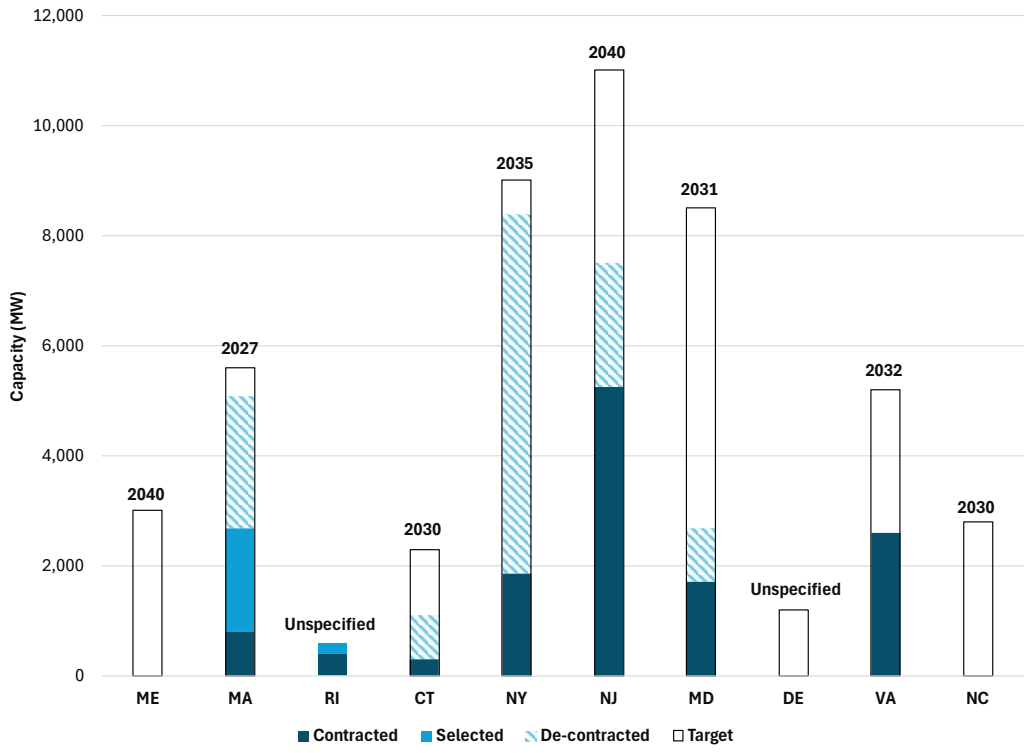
In 2024, *An Act promoting a clean energy grid, advancing equity and protecting ratepayers* (S.2967) inserted a new Clean Energy procurement into the GCA, focused on "financing of beneficial, reliable energy storage systems." The Section 83E Procurement will solicit 5,000 MW of energy storage by July 31, 2030. The Act requires that the first RFP is reviewed and approved before posting by July 31, 2025. The Drafting Parties are working on the first RFP for energy storage and solicited public comment on key issue areas including the schedule, environmental attributes, Clean Peak qualification, eligible bids, financing, commercial operating date, resource types, contract length, safety, project viability, resilience, economic development, environmental justice, and more. Comments are posted on the Clean Energy Procurement website.[27]

Other States Procurements

The states in the Northeast and Mid-Atlantic have set ambitious offshore wind targets along the Atlantic coast, aiming for a collective 48 gigawatts (GW) of capacity by 2040. Total procurement targets vary significantly by state. In recent years, interest in the offshore wind market has grown, driven by mechanisms such as PPAs and Offshore Wind Renewable Energy Certificates (ORECs), which provide EDCs with utility rate recovery directly or indirectly under the state sanctioned funding mechanism. At this time, 28 GW has been selected for development, 13 GW are under active contract, 2 GW have been selected through a competitive process but has yet to secure contracts, and 13 GW have been canceled due to supply chain challenges, global interest rates, and perceived federal regulatory uncertainties surrounding the Bureau of Ocean Energy Management (BOEM) permitting process.

[27] Massachusetts Clean Energy, available at https://macleanenergy.com/request-for-public-comments/

Figure 3: Offshore Wind target, Contracted Capacity by State



Maine has established an offshore wind target of 3 GW by 2040 but has not yet conducted any offshore wind solicitations. The Governor's Energy Office (GEO) is working in collaboration with the Maine Public Utilities Commission (PUC) to develop a process for offshore wind procurement.[28]

Rhode Island set a goal to achieve 100% renewable energy by 2033 (2022-S 2274A). The Affordable Clean Energy Security Act (2022-S 2583) directed the state to procure an additional 600 to 1,000 MW of offshore wind capacity, building on the existing Block Island Wind Farm and the approved 400 MW Revolution Wind project. This legislation ultimately led to the 2023 RFP, where Rhode Island participated in a multi-state offshore wind procurement with Massachusetts and Connecticut. Offshore wind procurements in Rhode Island are managed by Rhode Island Energy's Long-Term Clean Energy Procurement Program, which began in 2018 with the awarding of 400 MW[29] to Revolution Wind. As a result of the 2023 Multi-State RFP, 1,287 MW were awarded to the SouthCoast Wind project with 1,087 MW allocated to Massachusetts

[28] Maine Offshore Wind Initiative, available at https://www.maineoffshorewind.org/procurement/
[29] Deepwater Wind Claims Rhode Island Offshore Wind Prize, May 23, 2018, available at https://www.offshorewind.biz/2018/05/23/deepwater-wind-claims-rhode-island-offshore-wind-prize/

and 200 MW to Rhode Island. Upon approval of the 200 MW SouthCoast Wind Project, Rhode Island's total active offshore wind contracts will stand at 600 MW.

Connecticut has an offshore wind (OSW) goal of 2 GW by 2030. OSW solicitations are managed by the Connecticut Department of Energy and Environmental Protection (CT DEEP) in consultation with the EDCs. The first offshore wind project was awarded in 2018 with 304 MW going to Revolution Wind. In 2019, CT DEEP opened a solicitation for up to 2,000 MW, which led to the selection of Park City Wind (804 MW).[30] In 2023, Connecticut participated in the multi-state OSW procurement alongside Massachusetts and Rhode Island, but ultimately did not select any projects.[31] With the cancellation of Park City Wind, which is now part of New England Wind in Massachusetts' latest procurement round, Connecticut's active OSW capacity stands at 304 MW.

New York has set an OSW goal of 9 GW by 2035. OSW procurements in New York are managed by New York State Energy Research and Development Authority (NYSERDA).[32] The first solicitation in 2018 awarded 1,696 MW total to two projects: Empire Wind 1 (816 MW) and Sunrise Wind (880 MW).[33] The second solicitation in 2020 awarded 2,490 MW to Empire Wind 2 (1,260 MW) and Beacon Wind (1,230 MW), but both projects were later canceled due to industry-wide economic challenges. The third solicitation, held in 2022, provisionally awarded 4,032 MW, including Attentive Energy 1 (1,404 MW), Community Offshore Wind (1,314 MW), and Excelsior Wind (1,314 MW). Due to technical and commercial complexities, NYSERDA announced in April 2024 that the solicitation was concluded without final awards. The fourth solicitation in 2023 resulted in the selection of Empire Wind 1 (810 MW) and Sunrise Wind (924 MW)—both re-bid projects from the first solicitation.[34] The fifth solicitation, launched in 2024, received 6,870 MW in proposals, including 4,100 MW

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[30] Connecticut Department of Economic and Community Development, CONNECTICUT'S OFFSHORE WIND STRATEGIC ROADMAP, October 2023 page 7; available at https://portal.ct.gov/offshorewind/-/media/offshorewind/state-of-connecticut-osw-strategic-roadmap-2023.pdf?rev=fde65d1cc9fa4cef9b971d13428745b6

[31] Adnan Memija, Connecticut Takes a Pass on Offshore Wind in Latest Auction, December 23, 2024, available at https://www.offshorewind.biz/2024/12/23/connecticut-takes-a-pass-on-offshore-wind-in-latest-auction/

[32] NYSERDA, Offshore Wind Solicitation, Accessed 02/28/2025, available at https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/Focus-Areas/Offshore-Wind-Solicitations

[33] NYSERDA, Launching New York's Offshore Wind Industry: Phase 1 Report, October 2019, available at https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Offshore-Wind/osw-phase-1-procurement-report.pdf

[34] If these projects had not been awarded, their contract from the first solicitation would have been terminated.

of projects that were provisionally awarded in the third solicitation, but ultimately not contracted.[35] These submissions are currently under evaluation with award announcements and contract execution expected in 1H 2025. Currently, New York has 1,866 MW of contracted OSW capacity, including 1,734 MW from NYSERDA's Offshore Wind Program and 132 MW from South Fork Wind which is contracted by Long Island Power Authority (LIPA). More than 6,500 MW of previously awarded projects have been de-contracted or provisionally awarded but not contracted.

New Jersey has committed to 11 GW of OSW by 2040, with solicitations administered by the New Jersey Board of Public Utilities (NJBPU). The first solicitation in 2019 awarded 1,100 MW to Ocean Wind 1. The second, in 2021, awarded 2,658 MW to Atlantic Shores Offshore Wind (1,510 MW) and Ocean Wind 2 (1,148 MW). The third round, in 2023, selected 3,742 MW, including Leading Light Wind (2,400 MW) and Attentive Energy 2 (1,342 MW). The fourth solicitation, launched in 2024 with a target of 1,200–4,000 MW, concluded without an award.[36] Two out of three bidders withdrew from the solicitation. The remaining project, Atlantic Shores Offshore Wind 1, is subject to uncertainty following Shell's withdrawal of its equity commitment to the joint venture.[37] In August 2024, Orsted formally withdrew Ocean Wind 1 & 2,[38] reducing New Jersey's active offshore wind contracts to 5,252 MW.

Maryland has a non-binding target of 8.5 GW of offshore wind procured by 2031, with procurement overseen by the Maryland Energy Administration as part of the Promoting Offshore Wind Energy Resources (POWER) Act. In 2016, the state awarded 368 MW to Skipjack Offshore Energy and US Wind. [39] In 2021, Maryland conducted a second procurement, awarding 1,654.5 MW, including Skipjack Wind Phase 2.1 (846

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[35] NYSERDA, Summary from Public version of submitted proposals, available at https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/Focus-Areas/Offshore-Wind-Solicitations/2024-Solicitation

[36] NJBPU, New Jersey Board of Public Utilities Statement on New Jersey's Fourth Offshore Wind Solicitation, available at https://www.nj.gov/bpu/newsroom/2024/approved/20250203.html

[37] Atlantic Shores Offshore Wind 1 was re-bid into the fourth solicitation following its award in the second solicitation. The contract from the second solicitation has not been formally terminated.

[38] NJBPU Board Order, August 14, 2024, available at https://capemaycountynj.gov/DocumentCenter/View/12154/BPU-Document-81424

[39] Maryland PSC, Maryland PSC Awards ORECS to Two Offshore Wind Developers, May 11, 2017, available at https://www.psc.state.md.us/wp-content/uploads/PSC-Awards-ORECs-to-US-Wind-Skipjack.pdf

MW) and US Wind's Momentum Wind (808.5 MW).[40] In January 2025, Ørsted announced a withdrawal from the Maryland Public Service Commission (PSC) orders approving the Skipjack 1 and 2 projects. In May 2024, Governor Wes Moore signed House Bill 1296, mandating a review of revised schedules, sizes, or pricing for approved Round 2 offshore wind projects and similar requests for Round 1. US Wind was the sole applicant in this review. In revised round 2 results, Maryland PSC awarded additional ORECs to US Wind with the total capacity of 1,710 MW from both rounds.[41] With the withdrawal of Ørsted Skipjack 1 & 2 and revised round 2 capacity, Maryland's active offshore wind capacity is 1,710 MW. As part of the POWER Act, the Maryland Department of General Services (DGS) is also required to procure offshore wind. DGS is currently engaged in negotiations for a sole-source procurement with Orsted.[42]

OSW procurements in Delaware are authorized by the Delaware Energy Solutions Act of 2024. The Act authorizes the Delaware State Energy Office to procure up to 1,200 MW of OSW. No solicitations have yet been issued, nor have any other details been released on any upcoming procurements or procurement timelines related to the Act.

Virginia has an offshore wind goal of 5.2 GW by 2032 under the Virginia Clean Economy Act. The state currently has an active offshore wind project, Coastal Virginia Offshore Wind (CVOW), with a nameplate capacity of 2.6 GW, expected to be completed by February 2027. The project received approval and certification from the Virginia State Corporation Commission (SCC) in early August 2022.[43] The project is owned and developed by Dominion Energy, one of the largest vertically integrated utilities in the U.S. In February 2024, Virginia lawmakers postponed a decision on Senate Bill 578, which proposed introducing competition into the state's offshore

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[40] Maryland PSC, Maryland PSC Decision Expands Offshore Wind Development, December 17, 2021, available at https://www.psc.state.md.us/wp-content/uploads/Maryland-PSC-Decision-Expands-Offshore-Wind-Development_12172021.pdf

[41] Maryland PSC, Maryland PSC Awards Additional ORECs to US Wind, January 24, 2025, available at https://www.psc.state.md.us/wp-content/uploads/MD-PSC-Awards-Additional-ORECs-to-US-Wind_01242025.pdf

[42] Maryland Public Service Commission, Maryland Offshore Wind Roadmap to 8.5 GW, December 18, 2024, see page 14; available at https://www.psc.state.md.us/wp-content/uploads/HB1296-Offshore-Wind-Report-and-Recommendations_Final.pdf

[43] Virginia regulators approve Dominion Energy's 2.6-GW, $9.8B offshore wind farm, Aug. 8, 2022, available at https://www.utilitydive.com/news/dominion-offshore-wind-SCC/629085/

wind procurement. Dominion Energy opposed the bill, arguing that the current model is effective, and that competition would not necessarily lower costs.[44]

North Carolina has set offshore wind targets of 2.8 GW by 2030 and 8 GW by 2040 under an executive order (EO). As is the case in Virginia, North Carolina does not have a competitive procurement process. The state's largest utility, Duke Energy, owns one of the two Carolina Long Bay lease areas, which has the potential to support up to 1.6 GW of offshore wind. The site is currently under development and is expected to reach commercial operation by the 2030s.[45] Based on Duke Energy's 2023 IRP, the offshore wind development is under consideration; the utility plans for offshore wind to be part of the resource mix in 2035.[46]

Trends in Procurement Requirements

Other states' procurements for clean energy vary in size, timing, technology preference, procurement authority, and the process for regulatory approval. Although some states have established procurement target limits (e.g., New Jersey, Rhode Island, North Carolina) through EOs, the authority to procure clean energy generally originates with statutory authorization from the state's legislature. Project selection and evaluation in Connecticut, Massachusetts, and Rhode Island are made by the EDCs and/or state policy agencies, but approval by each state's utility regulator is still required once projects are selected and contracts are executed.

Other states, such as Maine, Maryland, New Jersey, and New York, evaluate and select proposals with their respective utility regulators' staff. Ultimately, approval of contracts and PPAs is the responsibility of the commissioners, who have final say on the recovery of program costs through utility rates.

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[44] Virginia lawmakers delay decision on Dominion Energy's offshore wind monopoly, February 15, 2024, available at https://www.canarymedia.com/articles/enn/virginia-lawmakers-delay-decision-on-dominion-energys-offshore-wind-monopoly

[45] Duke Energy, Timeline of Carolina Long Bay area east of Wilmington, N.C. Available at https://www.duke-energy.com/-/media/pdfs/our-company/carolongbay/carolina-long-bay-timeline-13h.pdf?rev=6e9bad6a7fff4d61a5bf30408a7c4782

[46] 2023 Carolinas Resource Plan, Chapter 4 Execution Plan, Table 4-2: Supply-Side Near-Term Actions Plan 2023 to 2026, page 10-11; available at https://www.duke-energy.com/-/media/pdfs/our-company/carolinas-resource-plan/chapter-4-execution-plan.pdf?rev=ccb35fc247e54eefbdcda2499a56764b

Table 3: Summary of Procurement Products and Authorities

State	Authorization for Procurement	Products Procured	Who Issues the RFP	Who approves the RFP?	Who selects projects?	Who signs the contract?	Who approves the contracts?
CT	CGS Section 16a, which were codified by many previous legislative Acts	Energy + Class 1 RECs purchased by EDCs	CT DEEP. Draft PPA is primarily EDC doc	No formal approval, but draft RFP is released for public comment by CT DEEP	CT DEEP	EDCs	EDCs submit contracts to the CT PURA for regulatory approval.
MA	Section 83, Section 83A – Multi-State, Section 83D, Section 83C Round I, Section 83C Round II, Section 83C Round III, Section 83C Round IV, Section 83C Round V	Energy + Class 1 RECs purchased by EDCs	DOER/EDCs issues the RFP	MA DPU approves draft before final issuance	MA DOER seeks consensus with EDCs, but MA DOER makes selection decision in consultation with IE	EDCs	EDCs submit contracts to the DPU for regulatory approval.
NY	Various NY PSC Orders; Climate Leadership and Community Protection Act; Clean Energy Standard	REC and OREC price paid to developer is net of reference values for energy and capacity	NYSERDA	No formal docketed approval proceeding, but DPS staff is consulted prior to RFP issuance	NYSERDA	NYSERDA negotiates contracts with selected projects.	DPS staff are consulted prior to awards, but there is not a formal docketed proceeding.
NJ	Offshore Wind Economic Development Act; and Governor's EOs establishing MW targets; Solar Act of 2021.	REC and OREC price paid to developer is net of actual energy and capacity revenues	NJ BPU Staff	NJ BPU Commissioners	NJ BPU Staff	NJ PBU	Selected projects submitted to NJ BPU Commission. Commission issues NJ BPU Order
RI	Affordable Clean Energy Security Act, R.I. Gen. Laws § 39-31-5	Energy + Class 1 RECs purchased by EDCs	Rhode Island Energy (RIE)	RI PUC must approve RFP. RI OER and DPUC may offer testimony	RIE	RIE negotiates PPA with selected project. Submits	PPA to RI PUC for approval, allowing RIE to recover costs in retail rates.

DE	Delaware Energy Solutions Act of 2024[47]	Energy, Capacity, Ancillary Services, and/or RECs.[48]	DE State Energy Office	No formal approval. The DE State Energy Office drafts and issues the RFP and also has the authority to negotiate contracts.	DE State Energy Office	DE State Energy Office	DE PSC must review and approve the selected projects' contracts.

Maine

OSW procurement in Maine is authorized through LD 1895, An Act Regarding the Procurement of Energy from Offshore Wind Resources (LD 1895). According to LD 1895, the Maine GEO drafts the RFP and submits it to the ME PUC for approval. Based on the statutory language, the PUC releases the RFP and has the decision-making authority to select winning bidders. The Maine PUC has the discretion to consult other state agencies and the GEO in performing its evaluation. No RFP has yet been issued.

Connecticut

Procurement of clean energy is established by law in Connecticut. Procurements are codified in Connecticut General Statutes (CGS) 16a for OSW and all other Class 1 RECs (and other REC Class levels).[49] Other clean energy procurements are procured in increments that are expressed as a percentage of load.[50] DEEP administers all procurements, issues the RFP, and has the sole authority in making awards. CT DEEP reviews and evaluates proposals in consultation with the Office of Consumer Counsel,

[47] The Delaware Energy Solutions Act of 2024. Available at https://legis.delaware.gov/json/BillDetail/GenerateHtmlDocument?legislationId=141232&legislationTypeId=1&docTypeId=2&legislationName=SB265#:~:text=WHEREAS%2C%20this%20Act%20shall%20be,best%20opportunities%20for%20Delaware%20and

[48] The Delaware Energy Solutions Act of 2024 indicates that "The State Energy Office is authorized and directed to develop and conduct a solicitation or solicitations, as it may deem necessary and appropriate, through a request for proposals for a single or multiple Offshore Wind Contracts relating to energy, capacity, ancillary services and RECs, or only RECs." It appears that the DE State Energy Office has the discretion to determine exactly what products may be purchased. Given that an RFP has not yet been released it is not yet know which products will actually be procured by DE.

[49] Connecticut Chapter 295 – Energy Planning, GGS 16a. Available at https://www.cga.ct.gov/2023/pub/chap_295.htm#sec_16a-3g

[50] Sec. 16a-3f (Class 1) allows for procurement up to 4% of load. CGS Sec. 16a-3g (Class 1 and Large Hydro) allows for procurement up to 5% of load. CGS Sec. 16a-3h (Small Hydro, Landfill Gas, Biomass, Fuel Cell, OSW, Anaerobic Digestion, ESS) allows for procurement up to 6% of load. CGS Sec. 16a-3j (Demand Response, Class 1, Class 3, Hydro) allows for procurements up to 10% of load. CGS Sec. 16a-3n (OSW) allows for procurement up to 2GW of OSW. Available at https://www.cga.ct.gov/2023/pub/chap_295.htm#sec_16a-3g

the State Attorney General, EDCs, and other state agencies as needed. Once the projects are selected, CT DEEP directs the EDCs to enter into contract negotiations with the developers of selected projects. When contract negotiations are finalized and contracts are executed, the EDCs submit the contracts to the CT Public Utilities Regulatory Authority (PURA) for contract review and approval through a docketed proceeding. CT DEEP may submit testimony and evidence through that PURA docketed proceeding. The EDCs are the signatories and therefore bear the evidentiary burden to justify the selection before PURA.

Rhode Island

Procurements for clean energy in Rhode Island are set forth in the Affordable Clean Energy Security Act, R.I. Gen. Laws § 39-31-5,[51] the Long-Term Contracting Standard for Renewable Energy,[52] and multiple EOs.[53] Procurement amounts are established in the aforementioned laws and have also been set through EOs. RFPs are issued by RIE. Once RIE selects proposals, RIE negotiates PPA with selected project developers. RIE then submits the executed PPAs to the Rhode Island PUC for regulatory approval.[54] The Rhode Island Office of Energy Resources (OER) may submit testimony as part of the proceeding.

Maryland

Procurement of OSW in Maryland has been authorized by the Offshore Wind Energy Act (2013), Clean Energy Jobs Act of 2019, and the Promoting Offshore Wind Energy Resources (POWER) Act (2023). The Maryland PSC Staff evaluates the proposals, but it engages an IE to supplement PSC Staff's OSW expertise. Once the MD PSC Staff selects the proposals, the Maryland PSC Commissioners provide ultimate approval.

The total number of ORECs that must be purchased annually from the selected projects are established in the Maryland PSC Order. Once the project is approved by

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[51] Rhode Island Legislature, Affordable Clean Energy Security Act. Available at https://law.justia.com/codes/rhode-island/title-39/chapter-39-31/

[52] Rhode Island Department of State, Long-Term Contracting Standards for Renewable Energy (810-RICR-40-05-1). Available at https://rules.sos.ri.gov/regulations/part/810-40-05-1

[53] Rhode Island Office of the Governor, Press Release, Rhode Island and Massachusetts Announce Largest Procurement of Offshore Wind in Nation's History, May 23, 2018. Available at https://www.ri.gov/press/view/33287. Also see Rhode Island Office of the Governor, Executive Order 20-01, Advancing a 100% Renewable Energy Future for Rhode Island by 2030, January 17. 2020. Available at https://governor.ri.gov/sites/g/files/xkgbur236/files/2021-06/Executive-Order-20-01.pdf

[54] Rhode Island Division of Public Utilities and Carriers, Rhode island Ratepayer Funded Clean Energy Programs, March 20, 2024. Available at https://ripuc.ri.gov/sites/g/files/xkgbur841/files/2024-03/Ratepayer%20Funded%20Clean%20Energy%20Programs%203.20.2024.pdf

the Maryland PSC, it requires electricity suppliers, who are also referred to as OREC Purchasers, to purchase the necessary number of ORECs based on load share to satisfy their RPS obligations.[55]

New Jersey

The State's OSW procurements are authorized by the 2010 Offshore Wind Economic Development Act (OWEDA).[56] Of all the state legislation examined in this section, OWEDA provides, by far, the most detailed and granular requirements for the State's OSW procurements. In early 2018, Governor Murphy signed EO #8, which directs the State to fully implement OWEDA in order to meet a goal of obtaining 3.5 GW of OSW by 2030.[57] In late 2019, Governor Murphy signed EO #92, which raised the State's OSW goal from 3.5 GW by 2030 to 7.5 GW by 2035.[58] In September 2022, Governor Murphy signed EO #307, which raised the State's OSW goal from 7.5 GW by 2035 to 11 GW by 2040. It also directed the State to study the feasibility of increasing the OSW goal further.[59]

Solar expansion is authorized through the Solar Act of 2021.[60] Procurement targets expressed as total OSW targets rather than an amount per solicitation have been set through the EOs, with the exception of the Solar Act of 2021 which authorized 3.75 GW of solar energy by 2026. The NJ BPU Staff is charged with preparing each RFP and administering the solicitation process and evaluation, subject to the Board Commission's approval prior to issuance of the RFP. NJ BPU Staff evaluates proposals

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[55] Maryland Department of General Services, Offshore Wind Power Purchase Agreement Terms Sheet. Available at https://dgs.maryland.gov/Documents/DCE%20-%20Energy/Offshore%20Wind%20Power%20Purchase%20Agreement%20Terms%20Sheet.pdf. Also *see* Maryland Public Service Commission, Maryland Offshore Wind Roadmap to 8.5 GW, December 18. 2024. Available at https://www.psc.state.md.us/wp-content/uploads/HB1296-Offshore-Wind-Report-and-Recommendations_Final.pdf. Also see Maryland PSC, Order No. 90011, Skipjack Offshore Energy, LLC and US Wind, Inc.'s Offshore Wind Applications under the Clean Energy Jobs Act of 2019, Order Granting Offshore Wind Renewable Energy Credits, December 17, 2021. Available at https://www.psc.state.md.us/wp-content/uploads/Order-No.-90011-Case-No.-9666-Order-Granting-Offshore-Wind-Renewable-Energy-Credits.pdf

[56] The New Jersey State Senate, "Offshore Wind Economic Development Act," June 21, 2010, available at ()https://pub.njleg.state.nj.us/Bills/2010/S2500/2036_R2.PDF)

[57] Office of the Governor of New Jersey, "Executive Order No. 8," January 31, 2018, available at ()https://nj.gov/infobank/eo/056murphy/pdf/EO-8.pdf)

[58] Office of the Governor of New Jersey, "Executive Order No. 92," November 19, 2019, available at ()https://nj.gov/infobank/eo/056murphy/pdf/EO-92.pdf)

[59] Office of the Governor of New Jersey, "Executive Order No. 307," September 21, 2022, available at ()https://dep.nj.gov/wp-content/uploads/offshorewind/docs/eo-307.pdf)

[60] New Jersey Legislature, Chapter 169, Solar Act of 2021, available at https://pub.njleg.gov/Bills/2020/PL21/169_.PDF

with consultation from other state agencies and the IE engaged by NJ BPU. Bid fees are used to fund the services of the IE, among other things. BPU Staff evaluates the proposals and makes recommendations to the Board for approval. Project costs are approved for apportionment to the four NJ EDCs for cost recovery.

New York

Clean energy procurement solicitations in New York are generally conducted and administered by NYSERDA. NYSERDA issues solicitations for OSW and Large-Scale Renewables (LSR, e.g. PV, Wind, etc.), which were mandated by the New York CES.[61] The 2019 Climate Leadership and Community Protection Act (CLCPA) mandates that at least 70% of New York's electricity come from renewable energy sources by 2030 and calls for the development of 9 GW of OSW energy by 2035. The New York PSC allows NYSERDA to conduct annual solicitations for LSR to contract for RECs from these clean energy projects. These LSR contracts are separate solicitations from OSW, where NYSERDA solicits specifically ORECs.[62] OSW is an eligible technology in the LSR solicitations, but is not price competitive, hence the separate OREC solicitations. Department of Public Service (DPS) Staff is consulted regarding the process and framework for selection of LSR and OREC projects prior to issuance of any RFPs. NYSERDA issues the RFP and selects the projects for all OSW and LSR contracts, again in consultation with DPS staff.

NYSERDA is the counterparty signing the contracts with the selected project developers, and as a signatory it agrees to purchase from project developers all right, title, and interest in the RECs or ORECs associated with the selected project during the contract term.[63]

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[61] NYSERDA, Clean Energy Standard. Available at https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Standard. Also *see* NYSERDA, Offshore Wind Solicitation, How NYSERDA Competitively Selects Offshore Wind Projects. Available at https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/Focus-Areas/Offshore-Wind-Solicitations.

[62] NYSERDA, About Offshore Wind, Reaching New York's Nation Leading Climate Goals. Available at https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/About-Offshore-Wind#:~:text=New%20York's%20Commitment%20to%20Clean%20Energy&text=The%20law%20mandates%20that%20at,offshore%20wind%20energy%20by%202035.

[63] NYSERDA, RES Standard Form Agreement. Available at https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00P8z000004O8OGEA0. Also see NYSERDA, Standard Form, Offshore Wind Renewable Energy Certificate Purchase and Sale Agreement, September 26. 2024. Available at https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fportal.nyserda.ny.gov%2Fservlet%2Fservlet.FileDownload%3Ffile%3D00Pcr000002n1uhEAA&wdOrigin=BROWSELINK

Delaware

The Delaware Energy Solutions Act authorizes one or more solicitations for OSW contracts for energy, capacity, ancillary services and RECs, or only RECs. The Act also allows the State Energy Office to coordinate its solicitation in conjunction with other States' procurements and process for multi-state coordination. The State Energy Office is authorized to issue the RFP, select the projects, and negotiate the contracts with selected project developers. Once the final contracts are negotiated the Act requires the State Energy Office to submit the contract to the Delaware Public Service Commission for regulatory approval.

Price Flexibility

Several transaction structures have been adopted to commercialize offshore wind. In New England (MA, CT, RI), a PPA approach has been utilized, where EDCs pay a fixed price to offshore wind suppliers for energy and RECs. The EDCs take title to the energy and attributes and receive the market revenues for these products. Wholesale capacity revenues remain with the sellers. In the mid-Atlantic (NY, NJ, MD), an OREC transaction structure has been utilized, where a price that covers total revenue is set and market revenues are netted out to determine the price of the OREC that is paid to the developer. In New Jersey and Maryland, developers receive the difference between actual wholesale energy and capacity revenues and the set price.[64] In New York, developers receive the difference between reference values for energy and capacity prices and the set price. In Virginia, Dominion owns the coastal lease area and is the largest vertically integrated utility in the state. Dominion is developing the project and has received commission approval to construct the CVOW project and recover costs via utility rates. Duke Energy, the largest vertically integrated utility in the Carolinas, owns one of two lease areas that are likely to supply North Carolina. It is unclear how Duke will commercialize offshore wind.

Following inflation and supply chain pressure caused by the COVID-19 pandemic, many states included price adjustments for inflation and other commodity supply trends in RFPs. Price adjustments are made based on a defined formula that weighs various economic metrics such as Bureau of Labor Statistics indices, commodity prices, and interest rates. Adjustments are made based on calculating the inflation

[64] Future contracts with MD OGS may require a PPA-like structure, as the OGS does not have enough energy demand to commercialize offshore wind on its own, and will likely need to engage with other entities to find off-takers for products.

index at the time of the proposal and then at some future date, generally set based on reaching a defined development milestone.

Table 4: Comparison of Inflation Adjustments in Offshore Wind RFPs

State	Transaction Structure	Inflation Adjustments	Adjustment Cap
Massachusetts	PPA	Yes	15%
Rhode Island	PPA	Yes	16%
Connecticut	PPA	Yes	15%
New York	Index OREC	Yes	None
New Jersey	OREC	Yes	15%
Maryland	OREC	No	N/A
Delaware	TBD	No[65]	N/A

Massachusetts implemented an indexed pricing bid option in 83C Round IV. The adjustment would be made one year following DPU approval of contracts and would be capped at 15%, both upward and downward from the proposed bid price. An inflation adjustment was also part of the Rhode Island and Connecticut offshore wind RFPs in the Multi-State Procurement. Rhode Island allowed for the indexing adjustment to be made at actual financial close or an agreed-upon estimated date for close (whichever is earlier) and capped the adjustment at 16%. Connecticut allowed for the indexing adjustment to be made either a year from PURA approval or at financial close in a similar manner to Rhode Island and capped the adjustment at 15%. New York made inflation adjustments optional in the 2022 solicitation and then mandatory in the 2024 solicitation. New Jersey included an inflation adjustment in its third and fourth solicitation rounds, with a 15% cap. Inflation adjustment dates differ among these solicitations. Maryland has not to date included inflation adjustments in their procurements, but recommendations for future procurements indicate that this mechanism may be added going forward. Though an inflation adjustment is not specifically contemplated in Delaware's Energy Solutions Act of 2024, such an

[65] It is unlikely that Delaware's legislation, which includes a rate cap, can accommodate an inflation adjustment.

adjustment may be incompatible with the Benchmark Price which would represent a cap on the price that would be paid pursuant to a solicitation.

Also, in response to macroeconomic volatility and project terminations, security requirements in form offshore wind contracts have increased. Form contracts included in the various procurements include requirements to post security at various stages of development to incentivize developers to follow through on commitments. The security is forfeit if the contract is terminated. Security requirements are generally expressed in $/MW. Requirements have increased in more recent procurements as various offshore wind projects have been terminated.

In the 2023 Section 83C Round IV RFP, security was set at $80,000/MW to be provided upon contract execution. The security requirement is reduced to $40,000/MW upon commercial operations.[66] Additional security is required if the bidder has previously defaulted or terminated a PPA, or if the project is being built in phases with separate contracts. NYSERDA requires $40,000/MW of contract security ten days after contract execution, and then the security amount increases $20,000/MW on January 1, 2026. Every additional calendar year where the project remains active thereafter adds another $10,000/MW until outer limits on the contract delivery term are reached. During the award period, a comparatively small amount ($1,000/MW) of security is required until an agreement is executed. Prior to ORECRFP23-1, the initial contract security was $5,000/MW. New Jersey required $50,000/MW of security, half of which must be posted within one year of BPU approval, and the other half of which must be posted within three years of BPU approval. Re-bid projects are required to post $100,000/MW of security. Additional security is posted to cover funding of Tier 1 infrastructure investments, which represent large commitments to invest in the state's supply chain. New Jersey's first and second solicitation did not have significant security requirements. Maryland required deposits into their OSW development fund which amount to a relatively small unit amount but declined to add contract security during the Round 2 re-bid process for US Wind.

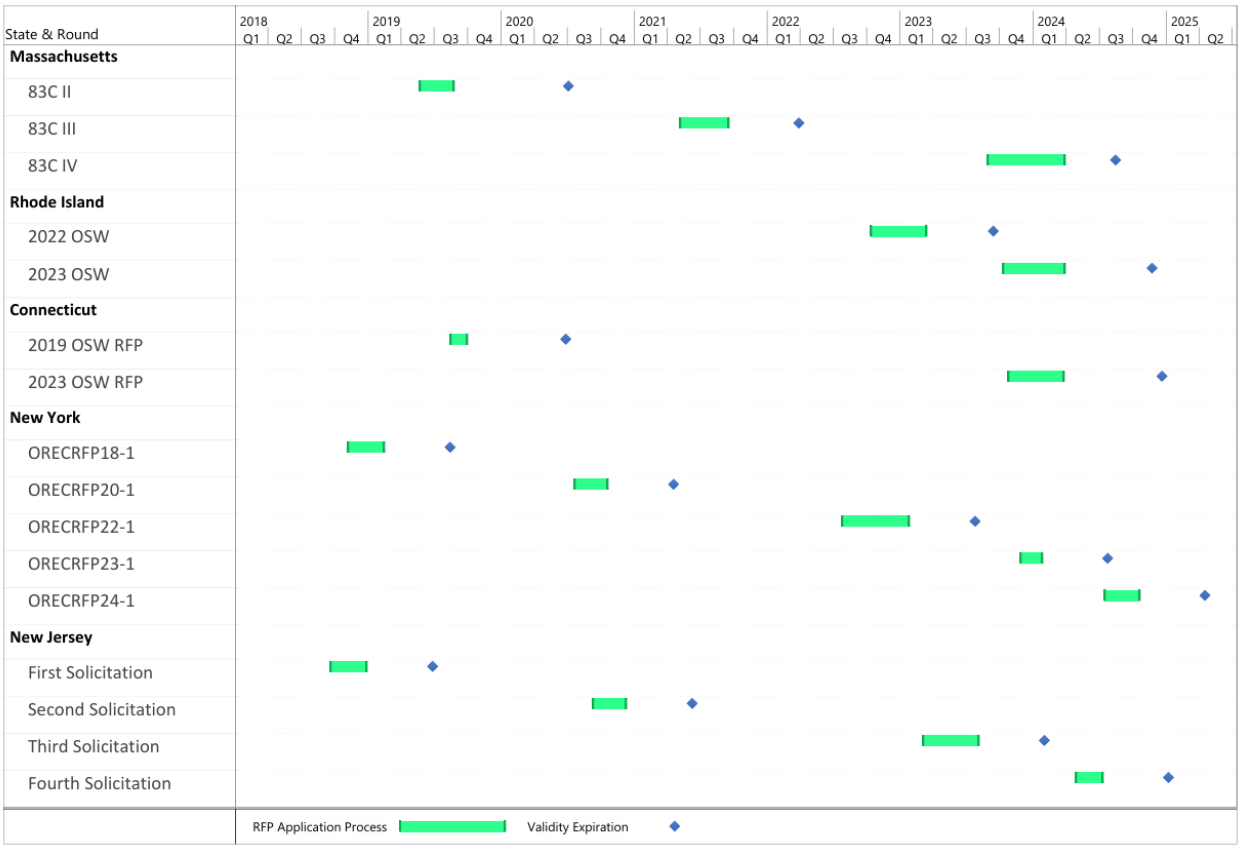
Proposal timelines in terms of submission deadlines and validity have also shifted. Time for responses from RFP issue dates varies from about 50 to 200 days. The time for responses has been affected by many drivers, including coordinating the recent multi-state procurement and contending with changes in federal legislation such as

[66] The Massachusetts RFP required additional security for phased projects with separate PPAs.

the IRA. NYSERDA's 2023 OREC solicitation had a 56-day response period as re-bids were expected and these mature projects had previously been evaluated. In addition, in many cases proposers can review a draft RFP which indicates the expected proposal due date, so additional time could be taken prior to final RFP issuance to prepare bid materials.

Proposal pricing and conditions are typically expected to remain valid for 180 days following submission. In some cases, the window has been somewhat shorter; Connecticut requires that pricing remains valid for longer. These timelines sometimes have been extended to accommodate significant changes to expected pricing (such as Internal Revenue Service guidance on the Investment Tax Credit) or to accommodate bid evaluation and negotiations. In the Maryland process, the 180-day application period opened when the first application was submitted. Proposals were valid for the following 180 days after the application period closed.

Figure 4: Gantt Chart of Offshore Wind RFP Timelines



Contract length is also a key component of pricing. Typically, 20- or 25-year contracts are the standard, though some states allow for 15- or 30-year contracts. Expected life cycles for offshore wind projects are typically 30 to 35 years, so shorter contracts may

capture some of the benefits of inducing new builds in the latter years without locking in costs. Conversely, a longer-term contract may allow for more revenue certainty and reduce bid prices.

Table 5: Summary of Allowed Offshore Wind Contract Lengths by State

State	Contract Lengths	Additional Information
CT	<=20 years	None
DE	>=20 years	No formal solicitation has yet been released. Contract term information is derived from the legislation.[67]
MA	15 to 30 years	Previously 15 to 20 years
MD	>=20 years	20-year contracts for selections
ME	TBD	Legislation does not specify a contract term length, and no solicitation has yet been released.[68]
NY	20 years or 25 years	Bidders must submit a base proposal that is exactly 25 years, but bidders can submit an alternate proposal that can be 20 years; however, a base proposal must still be submitted.
NJ	20 years	Proposal contract term must be exactly 20 years.
RI	15 to 30 years	Bidders must submit a base proposal that can range from 15 to 20 years, but an alternate proposal may be submitted that can be up to 30 years; however, a base proposal must still be submitted.

[67] Delaware Energy Solutions Act of 2024. Available at https://legis.delaware.gov/json/BillDetail/GenerateHtmlDocumentEngrossment?engrossmentId=36511&docTypeId=6

[68] State of Maine, An Act Regarding the Procurement of Energy from Offshore Wind Resources (2023). Available at https://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0766&item=5&snum=131

Evaluation Metrics

The public documents for each state's OSW procurements provide high-level descriptions of the evaluation processes which will be followed to screen, evaluate, and rank proposed projects. The evaluations are generally defined in two parts: (1) "Price-Related" or "Quantitative", and (2) "Non-Price Related" or "Qualitative". Table 7 summarizes the non-price evaluation processes for several recent OSW procurements, based on information available in publicly available documents such as RFPs and utility commission orders.

The quantitative evaluation generally considers the total cost of payments to the project based on bid pricing and projected energy delivery over the contract term, along with adjustments for the estimated value of the products provided by the project (primarily energy and environmental attributes). These direct costs and benefits that flow directly to electric customers are in some cases supplemented by indirect benefits such as reduced market energy and REC prices, which also flow to ratepayers. Also included may be impacts on greenhouse gas emissions reductions and avoided health costs associated with reductions in other fossil power plant emissions; these impacts are more difficult to quantify and flow to society in general. The maximum score is typically applied to the highest-performing project based on quantitative metrics, but RFPs do not necessarily elaborate on how other projects will be scored. NYSERDA affords significant discretion in its RFP:

> *NYSERDA will implement a method designed to cause the scores of Proposals with higher [Levelized Net OREC Cost] (LNOCs) to be sufficiently dispersed below the maximum of 70 points such that the final score that aggregates price, viability, and economic benefits retains the intended scoring emphasis on price to a reasonable extent. (Request for Proposals ORECRFP24-1, p.69.)*

The non-price criteria used by the states generally fall into two broad categories: economic development benefits and project viability. As shown in Table 6, the total evaluation weight or maximum points available for non-price criteria range from 25 to 40. Some states provide a breakdown of the potential points for 2 or 3 major categories in the public documents, but the details of how points are awarded are left to the evaluation teams and remain confidential.

Public documents show that the States have used similar overall weights for the quantitative metrics for ranking purposes. Quantitative scoring accounts for between 60 and 75 percent of the maximum score in all the offshore wind procurements that shared weighting details.

Table 6: Summary of Recent Evaluation Weightings

State	Primary Quantitative Metric	Indirect Benefits Included	Price Weighting	Non-Price Weighting	Non-Price Subcategories
Massachusetts	Real Levelized Net Benefit ($/MWh)	Yes	70%	30%	15% Economic Development 15% Bidder Experience and Project Viability
Rhode Island	Real Levelized Net Benefit ($/MWh)	Yes	70%	30%	24% Project Viability, 6% Economic Benefits
Connecticut	Benefit-Cost Ratio	Yes	75%	25%	Various, but no weightings published
New York	Real Levelized Net OREC Cost ($/MWh)	No	70%	30%	10% Project Viability, 20% Economic Benefits
New Jersey	Nominal Levelized OREC Purchase Price and Nominal Levelized Net OREC Cost ($/MWh)	No	60%	40%	20% Economic Impacts, 10% Environmental and Fisheries Impacts, 10% Likelihood of Successful Operation
Maryland	Retail Rate Impact	Yes	Unknown	Unknown	Economic Benefits, Environmental and Health Benefits

Generally, all competitive procurements request applicants to provide information on economic benefits, labor standards and environmental justice. Some state procurements require additional information or commitments in these areas, such as an input-output analysis of economic benefits, the use of labor agreements, a DEI plan, and information on embodied carbon. An input-output analysis is an economic modeling technique that quantifies the indirect and induced impacts of direct investments made into a geographic region. Indirect impacts represent new economic activity that investments create by adding activity in their supply chain, while induced impacts represent new activity from increased household spending when labor income grows. Embodied carbon represents the emissions created in the full life cycle of a project, from production to transportation to disposal. Embodied carbon requirements are typically light as life cycle analysis of specific projects is very difficult to conduct.

Table 7: Comparison of Non-Energy Commitments by State

State	Input-Output Analysis	Firm Economic Benefit Guarantees	Project Labor Plan and/or Agreements	Prevailing Wage Standards	DEI and/or EJ Plans	Reporting on Embodied Carbon
Maine[69]				✓	✓	
Massachusetts		✓			✓	
Rhode Island		✓	✓	✓	✓	
Connecticut		✓	✓	✓		
New York		✓	✓	✓	✓	✓
New Jersey	✓	✓	✓		✓	✓
Maryland	✓		✓			

All competitive OSW procurements require developers to submit detailed information about their experience, management expertise, financing plan, partnership structure (if applicable), and environmental and fisheries protection plan. Competitive procurements in many states require applicants to address specific economic guarantees, supply chain commitments, and port infrastructure utilization. Relevant topics without specific RFP requirements can be mentioned at the applicant's discretion.

Labor and DEI

Maine

Maine has not yet conducted an OSW procurement. LD 1895 will further the development of responsible OSW projects in the Gulf of Maine in a way that helps the State meet its GHG reduction obligations, stabilize energy prices, benefit the State's economy and residents, and minimize and compensate for any impacts to wildlife, habitat, fisheries and coastal communities. The Act also allows for port development, creating opportunities for all State workers and businesses in the emerging industry, and protecting critical lobster fishing areas from OSW development. The State's OSW program will seek to facilitate collaboration among states on transmission and procurement efforts, sharing of lessons learned, and effective coordination to build a

[69] Maine has not yet conducted a procurement, but legislation includes these requirements.

broader supply chain that will support the growing industry for floating offshore wind in both Maine and the West Coast.

The law specifies some bidder requirements for future OSW solicitations. Bidders will have to submit a plan that meets or exceeds state and federal requirements to achieve DEI in employment and contracting for the project. A similar plan is also required to achieve economic and community benefits, with a focus on the development of ports, supply chains and necessary workforce. Additionally, contractors and subcontractors must ensure that all construction workers earn compensation at or above the main energy industry compensation threshold, follow hiring requirements intended to prioritize disadvantaged populations and state residents, and adhere to inclusive bidding standards. They must also guarantee against strikes, lockouts or similar disruptions. The act does not mention requiring applicants to use union labor or enter into agreements with unions, conduct an input-output analysis of economic benefits, or provide information on embodied carbon.[70]

GEO will coordinate with the Maine PUC and other appropriate state agencies on the development of an OSW solicitation. The solicitation will include important plans related to stakeholder engagement, fisheries protection, environmental considerations, and economic development. The draft RFP will be issued for public comment in early 2025, filed with the PUC for final review in mid-2025, and issued by the PUC in 2026. More information about the first solicitation's procurement requirements will be known when the draft RFP is issued.[71]

Rhode Island

The 2023 OSW RFP[72] required all projects to provide specific and measurable economic benefits to the State. All economic benefits were evaluated in the non-price analysis and had to be specific, measurable and supported by documentation in order to assess the credibility of the proposed commitments. Bidders had to provide annualized estimates for all economic benefits and identify the specific in-state expenditures and employment proposed during the development, construction and

[70] State of Maine, "An Act Regarding the Procurement of Energy from Offshore Wind Resources," July 27, 2023, available at (https://www.mainelegislature.org/legis/bills/getPDF.asp?paper=SP0766&item=5&snum=131)
[71] Governor's Energy Office, "Maine Offshore Wind Solicitation," available at https://www.maine.gov/energy/initiatives/offshorewind/solicitation
[72] Rhode Island Energy, "Request for Proposals for Long-Term Contracts for Offshore Wind Energy," October 12, 2023; available at)https://ricleanenergyrfp.com/wp-content/uploads/2023/10/2023-ri-osw-rfp-final-issued-10-13-2023.pdf)

operation and maintenance phases of the project in Excel format using the Economic Development Summary Sheet. RIE conducted an analysis of the value to the State of each project's economic benefits in relation to the cost and consulted with relevant state agencies on proposed economic benefits.

Preference was given for projects investing in workforce development, such as pre-apprenticeship and apprenticeship programs and OSW training. Each Applicant was required to submit a DEI Plan, a Workforce Diversity Plan, a Supplier Diversity Program and a DEI Stakeholder Engagement Plan.

Successful bidders were required to negotiate and execute a legally binding contractual commitment with the applicable government entity or entities of the State for any specific commitments to economic benefits that are memorialized. In addition, various commitments that are included in the proposal but not reflected in agreements at the time of bidding are included to ensure that the economic benefits are actually obtained and tracked. The contractual commitment is required before a final PPA is executed.

Connecticut

Connecticut's most recent OSW RFP stated that bids must include clear outlines of investment and job creation commitments within the boundaries of the State including, but not limited to, direct employment and wages, supplier spend, and workforce development spend.[73] Should a selected Bidder fail to meet its direct investment or direct job creation commitments at the end of any designated period, the Bidder had to commit at a minimum to both funding the difference between the commitment value and the actual value, plus providing an additional ten percent (10%) of the missed direct investment and direct job creation commitment value for the period. The additional 10% would be deposited into a State-controlled OSW investment fund. The evaluation of economic benefits was done in collaboration with relevant state agencies.

The qualitative evaluation assessed, among other things, meaningful public participation and environmental justice practices, plans for the use of skilled labor and the impact on Connecticut's economic development. The Proposal Submission

[73] Connecticut Department of Energy & Environmental Protection, Request for Proposals for Offshore Wind Facilities, Revised February 14, 2024, available at https://www.dpuc.state.ct.us/DEEPEnergy.nsf/c6c6d525f7cdd1168525797d0047c5bf/5f3d7ee5480fdbb085258a5500500d7c/$FILE/Final%20RFP%20(2023%20OSW)_Revised%20V3.pdf

Instructions Appendix referenced the need for Bidders to demonstrate how they will have contract commitments to pay not less than the prevailing wage for laborers, workmen and mechanics performing construction activities within the United States, as well as how they will engage in good faith negotiations for a Project Labor Agreement (PLA). It also requests information on any plans to use skilled labor.

New York

New York's most recent OSW procurement, ORECRFP24-1, is still in progress.[74] The RFP favored projects with additional incremental economic benefits spending on supply chain investments, disadvantaged communities, domestic iron and steel and minority- and women-owned business enterprises.[75] Each project was required to commit a minimum of $100 million to undesignated supply chain investments. Projects could not be contingent on a specific use of these undesignated funds. The RFP required a minimum of $120,000 per MW of offered capacity worth of iron and steel to be manufactured domestically. It was permissible to count spending on domestic iron and steel as an incremental economic benefit even if the spending did not occur in New York. Applicants provided quantitative project expenditure and economic benefits data in Excel format using the Offer Data Form file as part of their submission. These data were then used to score projects on their incremental economic benefits as detailed in the RFP, with a higher weight being given to near-term economic benefits than long-term.

The RFP provides detailed guidance on PLAs. Each awardee would be required to present for review a plan outlining a list of the expected PLAs to cover all domestic construction activities on the project. Unless otherwise provided in an applicable PLA, all workers performing domestic construction activities on the project are required to earn wages and benefits exceeding the prevailing rates as determined under state labor laws. The Proposer is also required to enter into a Labor Peace Agreement with at least one labor organization representing employees working on the project. Proposals also had to include specific and quantifiable commitments to provide benefits to disadvantaged communities.

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[74] New York State Energy Research and Development Authority, 2024 Offshore Wind Solicitation, July 17, 2024, available at https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/Focus-Areas/Offshore-Wind-Solicitations/2024-Solicitation

[75] New York State Energy Research and Development Authority, "Request for Proposals ORECRFP24-1," August 13, 2024, available at https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00P8z000004Qqk9EAC

New Jersey

New Jersey's most recent RFP (called the Solicitation Guidance Document, or "SGD") provided requirements on economic benefits, labor standards, environmental justice, and embodied carbon.

Applicants were required to submit an Economic Development Plan that described the project's proposed investment in in-State OSW infrastructure, supply chains, labor force development, and any other in-State investments, and how this proposed investment furthered the development of the State as a regional hub for OSW. The SGD strongly encouraged the use of the New Jersey Wind Port for project marshalling and incremental Tier 1 manufacturing facilities. Applicants were also encouraged to source monopiles from EEW-AOS's in-State facility, utilize domestic content to the maximum extent possible, and contribute to the State's efforts on workforce development, education, research and innovation. Applicants were required to provide unconditional spending and jobs guarantees for the development, construction and operational phases of the project. A shortfall compensation mechanism was also required to ensure that the State receives the promised economic benefits. Each project was required to conduct a detailed input-output analysis of its impact on income, employment, wages, taxes and output in the State. The quantitative results of this analysis and detailed bills-of-goods for the project were entered into the application form in Excel format as part of the submission.

The SGD required a detailed Workforce Development plan. This had to include a description of the Applicant's plan to use unionized labor, including the identification of specific unions, and considerations related to prevailing wages, PLAs, labor harmony agreements, union neutrality agreements, provisions for workplace disputes, jurisdictional disputes and other best practices to prevent project disruption. It also contained details on any participation in community benefit agreements that included commitments to local hiring and skills training for local residents, including those in Overburdened Communities (OBCs).

Regarding environmental justice, applicants were required to describe the economic benefits or impacts to environmental justice and OBCs, throughout the planning, development, construction, and operations of the project. These may have included the establishment of education and training opportunities for members of OBCs, the hiring of residents from these communities, or other investments identified as priorities for the community. Applicants had to explain how they intended to deliver

the identified benefits and mitigate any identified impacts. All Applicants were required to explicitly identify how they could design their investments to provide benefits to and reduce burdens on OBCs.

Each Applicant had to submit an Environmental Protection Plan that contained analysis of the environmental benefits and environmental impacts of the project. This had to include a description of any measures that would have been employed to minimize the project's embodied carbon. The application form required quantitative data on the project's CO_2, SO_2 and particulate matter emissions by year in Excel format.

OWEDA requires applicants to include a comprehensive input-output analysis for their project's impact on income, employment, wages, indirect business taxes, and output in the state. While OWEDA does not specifically require embodied carbon to be addressed, it does require the application to include the project's anticipated carbon dioxide emissions impact. An analysis of the project's anticipated environmental benefits and environmental impacts is also required as part of the cost-benefit analysis. OWEDA requires wage information for the project's expected job creation, but does not impose requirements on labor standards, the use of union labor, or DEI initiatives. The State is authorized by OWEDA to require applicants to provide any additional information that it deems necessary to properly evaluate OSW projects.

Maryland

New OSW projects selected after the enactment of the POWER Act will be required to enter into community benefit agreements that guarantee that construction work on the selected projects will be subject to an agreement with labor unions. These agreements will maximize the use of skilled local labor, provide plans for the use of domestic iron, steel, and manufactured goods to the greatest extent practicable, as well as the use of locally and domestically manufactured construction materials and components, and allow worker unionization.[76]

Maryland has not yet conducted a procurement for new OSW projects based on the POWER Act. In Maryland's Round 2 procurement, the evaluation team conducted quantitative analyses including independent forecasts of net ratepayer impacts, in-

[76] Perkins Coie, "Maryland Commits to 8.5 GW of Offshore Wind by 2031, Looks Ahead to Offshore Wind Transmission," April 17, 2023, available at https://perkinscoie.com/insights/update/maryland-commits-85-gw-offshore-wind-2031-looks-ahead-offshore-wind-transmission

State economic impacts, and emission benefits. Their independent forecasts were based on a modeling framework utilizing production cost and capacity expansion modeling to assess impact on the power sector, and economic input-output modeling to assess the impact to the State economy. The quantitative modeling was performed using information provided by the applicants against common sets of assumptions regarding the power market outlook for the 20-year contract duration. This provided the MD PSC with a consistent and impartial basis of comparison for its use in evaluating the applications received. Applicants were required to submit their own input-output analysis with reasonable and verifiable inputs, information on environmental and health impacts, and details on labor commitments, including on union outreach.[77]

The POWER Act specifies numerous procurement requirements relevant to this section.[78] It requires the applicant to provide a detailed input-output analysis of the impact of the project on income, employment, wages, and taxes in the State. Detailed information regarding the expected number, salary and duration of the jobs created by the project must also be provided. All applicants are required to enter into a community benefit agreement, which must contain the applicant's plan for the use of skilled labor, particularly in regard to the construction and manufacturing components of the project, through outreach, hiring, or referral systems that are affiliated with registered apprenticeship programs. Likewise, the community benefit agreement requires projects to use labor agreements. While not required, the evaluation will favor projects that use prevailing wage requirements. DEI and environmental justice are not mentioned by name, but there are rules requiring developers to solicit and interview a reasonable number of minority investors and provide procurement opportunities to minority-owned businesses, among other actions. The law does not mention embodied carbon.

Environmental

While many states do not list specific emissions reporting requirements associated with their RFPs, they may provide supplemental narrative materials more generally describing the emissions reductions associated with clean energy from OSW. Developers will also end up providing some insights into environmental impacts via

[77] "Evaluation and Comparison of MarWin II and Skipjack Wind Proposed Offshore Wind Project Applications," ICF and Mondre Energy, Inc.; September 1, 2021

[78] Maryland General Assembly,"Promoting Offshore Wind Energy Resources Act," April 21, 2023; available at (https://mgaleg.maryland.gov/2023RS/Chapters_noln/CH_95_sb0781e.pdf)

permitting plans, as BOEM reviews environmental impacts during the Construction and Operations Plan (COP) approval process.

New York and New Jersey have specific requirements associated with emissions reporting. New York requires that developers submit a Decarbonization Strategy and then describe a reporting process to validate and track carbon footprint and energy and carbon payback periods. The RFP further describes this accounting:

> *In accounting for the Selected Project's carbon footprint and energy and carbon payback periods, the Selected Project must incorporate Scope 1, 2 and 3 emissions as outlined by the U.S. Environmental Protection Agency (EPA). Scope 1 emissions encompass direct emissions originating from sources owned or controlled by the Selected Project, such as on-site fuel combustion, industrial processes, and fugitive emissions. Scope 2 emissions comprise indirect emissions resulting from the generation of purchased energy, such as electricity and heat. Scope 3 emissions comprise indirect emissions stemming from the Selected Project's value chain, including activities related to purchased goods and services, transportation, employee commuting, and waste disposal. Incorporating all three scopes into the final accounting will provide a comprehensive overview of the emissions of the Selected Project, enabling stakeholders to assess the environmental responsibility and sustainability efforts across the entire spectrum of the Selected Project's operations and supply chain.*[79]

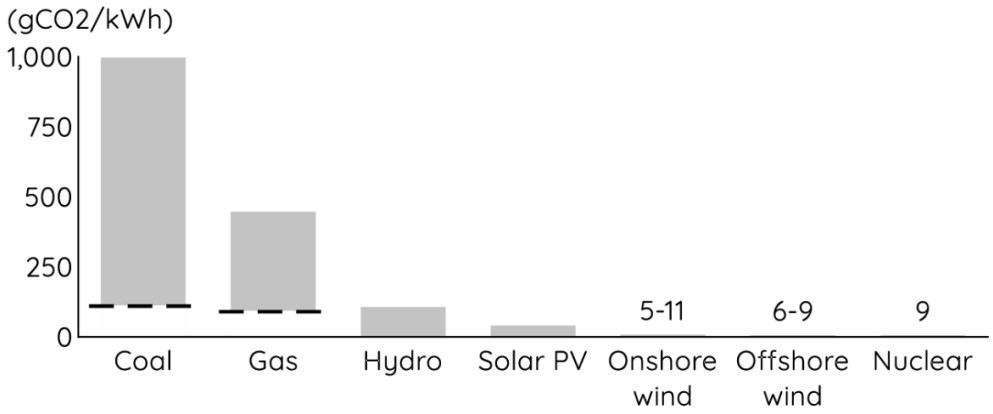
In New Jersey's most recent solicitation, the Emissions Impact sheet of the Application Form required bidders to provide annual direct CO_2, SO_2, NO_X, and $PM_{2.5}$ emissions (in short tons per year) for the development, construction, operational, and decommissioning phases. The same sheet also requires bidders to provide annual avoided CO_2, SO_2, NO_X, and $PM_{2.5}$ emissions for the operational phase. Each Applicant had to submit an Environmental Protection Plan that contained analysis of the environmental benefits and environmental impacts of the project. This plan had to include a description of any measures that would have been employed to minimize the project's embodied carbon.

As noted in Table 7, most procurements do not require a detailed look at embodied carbon in the offshore wind supply chain, though proposers may offer such

[79] NYSERDA ORECRFP24-1, pg. 45-46; available at https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/Focus-Areas/Offshore-Wind-Solicitations/2024-Solicitation

information as part of a stronger proposal narrative. Proposals have varying requirements with respect to explaining how vessels are used and what environmental impacts of their operations may be. Much of the relevant narrative in proposals is redacted in public filings of proposals. Analysis shared by RWE in support of their Community Offshore Wind bid puts into perspective the life cycle emissions associated with offshore wind relative to fossil generators.

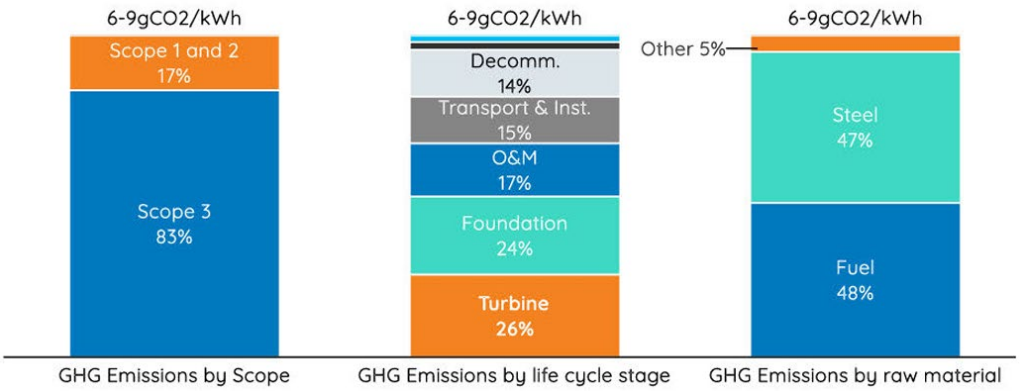
Figure 4: Life Cycle CO_2 Emissions by Technology Type[80]



Of these life cycle emissions, transportation fuel for vessels is a substantial portion of life cycle emissions. Most of the scope 1 and 2 emissions from the direct spend on operations and maintenance of the project come from fueling vessels. About 40% of scope 3 emissions, and a third of overall GHG emissions, come from fueling installation and decommissioning vessels.

Figure 5: Carbon Stack for Typical Offshore Wind Project by Life Cycle Component and Material

[80] National Grid, Community Offshore Wind Public Proposal Narrative, page 508; available at https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Offshore-Wind/COSW_Public-Proposal-Narrative_3-17-23_Redacted.pdf



Several bidders have identified low-carbon fuels or electric motor drive vessels as ways to further reduce embodied carbon. In 83C Round II, Mayflower Wind noted as one of its objectives that it would "Apply the latest proven technologies, such as hybrid LNG [liquefied natural gas]/ Hybrid Battery Service Operations Vessels, to reduce overall Greenhouse Gas Emissions and deploy remote turbine diagnostics to reduce the amount of time that personnel must spend offshore."[81] In the 2022 NYSERDA RFP, Attentive Energy noted the use of hybrid power system vessel with solar decks for surveys rather than larger conventional vessels.[82] In the 2023 NJBPU S3, Attentive Energy noted they made use of uncrewed surface vessels (operated by an onshore pilot) to support offshore site assessment and permitting activities (safer, more environmentally friendly, and are carbon neutral).[83]

Interconnection

Generator interconnection is the set of rules that new electricity generators like wind, solar, natural gas and electric storage units must follow to connect to the electric grid of a Regional Transmission Organization (RTO) to deliver energy.[84] Each RTO in the U.S. has its own rules, but the interconnection process is standard across all RTOs under FERC jurisdiction. ISO-NE is New England's RTO and is responsible for the administration of the interconnection process in accord with the Open Access Transmission Tariff approved by FERC. The process requires every project to undergo

[81] Mayflower Wind Energy LLC. Section 83C Request for Proposal Application Form (Public). Page 225; available at https://macleanenergy.com/83c-ii/83c-ii-bids/
[82] Attentive Energy LLC 2022 OSW Proposal to NYSERDA, p. 411; available at https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Offshore-Wind/ORECRFP22-1-Attentive-Energy-One-Proposal-Narrative---Public-Copy---022423.pdf
[83] Attentive Energy LLC. Attentive Energy Two. New Jersey Board of Public Utilities Offshore Wind Solicitation #3. August 4, 2023. Page 14-4; available at https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2111375
[84] Examples of RTOs are PJM, NYISO, and ISO-NE.

a rigorous, multi-step study to assess potential impacts to the grid from the new generation. These studies typically require the generator to fund any necessary transmission system upgrades to grid infrastructure before securing an interconnection agreement. Any transmission system upgrades identified during the study process must then be paid for and constructed prior to the generator coming online. It usually requires several years for a project to move through the interconnection process.

In general, a project begins the interconnection process by submitting an application and being placed in a queue with other generators that have also applied for interconnection. The generator is required to place a deposit and demonstrate that it is likely to secure land-use agreements to establish site control.

Once the application and deposit have been submitted, the RTO and the affected Transmission Owner (TO) works with the project owner ("the interconnection customer") on a series of studies to assess the project's potential impact on the grid. These studies typically involve a Feasibility Study, a System Impact Study, and a Facilities Study.[85,86] After each study is complete, the interconnection customer makes the determination to advance to the next phase, based on the information provided by the RTO and TO.

After the studies are complete the interconnection customer, the RTO, and the TO will sign an Interconnection Agreement. This agreement details the plans for building the facilities and constructing the transmission system upgrades that will allow the project to connect to the electric grid. A project cannot interconnect until those upgrades are constructed.

The timing of the 83C Round IV RFP overlapped with ISO-NE's overhaul of the interconnection process from the existing first-come, first-served process to a first-ready, first-served pursuant to FERC Order No. 2023. FERC Order No. 2023 was

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[85] The Feasibility Study generally determines whether connecting the project to the grid would cause electrical problems and assesses whether transmission system upgrades are needed to avoid operating constraints. The System Impact Study requires more detailed information from the interconnection customer, and assesses grid impacts in more detail. The Facilities Study estimates in greater detail the costs of equipment, engineering, and construction of the facilities needed (such as wires and substation upgrades) to connect the project to the grid.

[86] It must be noted the proposed FERC Order 2023 will require that projects be studied in groups, also referred to as clusters on a "first-ready", "first-served" basis. However, the compliance filing process for the RTOs/ISOs is still ongoing and so this proposed new process is not fully operational across all RTOs.

issued on July 28, 2023, just one month before the 83C Round IV RFP was issued. ISO-NE spent the second half of 2023 and first half of 2024 developing a compliant study process and submitted their compliance filing to FERC on May 14, 2024. As of the date of this report, ISO-NE has not yet received an order on their compliance filing from FERC, resulting in a delay to the start of the transitional cluster study, which was planned for October 14, 2024. NYISO and PJM already conduct class-based interconnection processes.

The 83C Round IV RFP was also underway prior to the Power Up New England portfolio of transmission projects that were selected to receive funding under the Department of Energy's Grid Innovation Program (GIP). This GIP portfolio includes the Huntsbrook OSW Hub and additional interconnection capability at Brayton Point. The new Huntsbrook POI will accommodate 2,400 MW of offshore wind interconnections. The GIP award is only allowed to cover up to half of the cost of the Huntsbrook OSW Hub and additional Brayton Point capacity. Eversource and National Grid have filed abandoned plant filings at the Federal Energy Regulatory Commission (FERC) for the GIP projects.[87] Approvals of these filings will allow the transmission operators to recover associated project costs if they are required to cease construction before operation for reasons outside their control. FERC reviews these filings for the project risks, ensures reasonable recovery, and reviews the potential for benefits to the region, including system reliability improvements. FERC approved National Grid's request on March 7, 2025.

[87] FERC Docket No. ER25-866-000 (National Grid) and Docket No. ER25-747-000 (Eversource).

Figure 6: Huntsbrook Offshore Wind Hub[88]

As part of ISO-NE's Longer-Term Transmission Studies (LTTSs) process, ISO-NE has established a pathway for needs identified in transmission studies to be developed through a competitive RFP. ISO-NE would develop a transmission RFP to meet a defined need and would select a preferred solution if the benefit-cost ratio is greater than 1. NESCOE would then have the right to either terminate the RFP or move forward with a default cost allocation or some alternative method.[89]

[88] Eversource, Transmission Interconnection Clean Energy Hubs, Eversource, Accessed March 6, 2025, available at https://www.eversource.com/content/residential/about/doing-business-with-us/transmission-interconnections/transmission-interconnection-clean-energy-hubs

[89] ISO New England, Longer-Term Transmission Planning Phase 2: Transmission Planning Process Guide Updates, November 20, 2024, presentation to the Planning Advisory Committee by Michael Drzewianowski of ISO-NE, available at https://www.iso-ne.com/static-assets/documents/100017/a07_ltts_phase_2_tppg_update_pac_presentation.pdf

ISO-NE found in an additional analysis to the 2050 Transmission Study that "Based on the expected 2033 transmission system, a significant amount of offshore wind may be able to be connected without major upgrades or significant curtailment across a variety of potential POIs in New England".[90] However, ISO-NE and NESCOE are planning to move forward with a transmission RFP to address export constraints in Northern Maine to facilitate the connection of onshore wind.[91]

State entities in New Jersey and New York have implemented innovative transmission solutions in their respective procurement processes to accommodate the anticipated OSW entry to meet the various states' carbon reduction goals.

Interconnection Cost Sharing Concepts

Because of the uncertainty of the interconnection process in PJM and the amount of the transmission system upgrade costs that are allocable to an interconnection customer, there may be a risk premium "baked in" to the bid prices that are submitted by bidders. Sharing the risk of interconnection costs between the bidder and the buyer (in this case New Jersey) through a cost sharing mechanism reduces and, conceivably, eliminates the risk premium ascribable to the land portion of the transmission pathway from landfall for OSW projects to the POI. States that have implemented transmission cost sharing mechanisms expect OSW bidders to reduce both the bid price and the risk premium related to the uncertainty of the interconnection process.

In its recent procurements, the NJ BPU has implemented a Transmission System Upgrade Cost (TSUC) mechanism. TSUC is based on the sharing of transmission system upgrade costs and therefore sharing the TSUC risk, between the seller (the developer / the bidder) and the buyer (four New Jersey EDCs under NJ BPU Order to purchase ORECs based on load share). The objective of the mechanism is to adjust the bid price upward if the final TSUC is greater than a threshold level. The adjustment must reflect a reasonable apportionment of risk between buyer and seller, subject to NJ BPU Staff's evaluation of the cost efficiency under the TSUC mechanism.

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[90] ISO New England, 2050 Transmission Study (Revision 1): Results from Additional Analysis on Offshore Wind Screening, Revision to the August 21, 2024 presentation to the Planning Advisory Committee by Reid Collins of ISO-NE, August 21, 2024, page 68; available at https://www.iso-ne.com/static-assets/documents/100019/2050addlanalysis_poi_pac_aug2024_clean.pdf

[91] ISO New England, 2025 Maine Long-Term Transmission Planning RFP, Dan Schwarting, ISO-NE, January 23, 2025, available at https://www.iso-ne.com/static-assets/documents/100019/a02_2025_01_23_pac_longer-term_transmission_planning_rfp_plans_and_schedule.pdf

Shifting all risk to the project can result in an excessive risk premium to cover the potential runaway transmission interconnection costs under uncertain conditions that cannot be resolved prior to bid submission. Conversely, assigning all or the preponderance of transmission costs to ratepayers can result in perverse incentives as bidders gloss over efficient siting and deliverability concerns. Bidders understand that shifting cost risk largely or entirely to benefited load endangers selection. Hence, an acceptable balance to mechanize risk sharing is needed to facilitate the evaluation of bids on a reasonably uniform basis.

Under TSUC, bidders are asked to submit several TSUC limits ("Tiers"). Each tier requires the bidder to define what is borne by the bidder versus benefited load. In providing their TSUC Tiers, bidders are essentially providing their risk appetite for exposure to TSUC at a given Tier level. Bidders are also required to provide and justify their own best estimate of actual TSUC and the range of possible outcomes. In this regard, bidders are asked to provide the cost estimates for each Tier. The evaluation team can then refine those estimates, if necessary, through a confrontational Clarifying Question process that may happen in series over time.

In its fifth offshore wind solicitation, NYSERDA offered an optional cost sharing mechanism, referred to as Interconnection Cost Adjustment, which is similar to the one in New Jersey. Under the proposal, bidders may include a price structure that contemplates an interconnection cost sharing approach wherein the interconnection costs would be absorbed fully by the bidder up to a certain level, but above that level incremental interconnection costs would be shared between the bidder and NYSERDA, where the portion allocable to NYSERDA is added to the OREC price. Bidders were asked to identify and provide an estimate of the expected (50% probability of exceedance) interconnection cost along with high (10% probability of exceedance) and low (90% probability of exceedance) estimates of the interconnection costs, which should include all proposed or anticipated interconnection and transmission system upgrades. Bidders were also asked to provide an explanation for how the estimates of the expected, high, and low interconnection costs relate to any technical transmission studies. NYSERDA's evaluation team would then review the submitted estimates and based on their review accept either the expected, high, or low estimate, or make any reasonable adjustments.

Shared Transmission Infrastructure

New Jersey has implemented a provision in the PJM Tariff called the State Agreement Approach (SAA). Under the SAA, a state (NJ in this case) or state governmental entity authorized by the respective state (NJ BPU in this case), may agree voluntarily to be

responsible for the allocation of all costs of a proposed transmission expansion or enhancement that addresses state Public Policy Requirements identified or accepted by the state. Such transmission enhancements or expansions may be included in the PJM Regional Transmission Expansion Plan as a state public policy project, the costs of which will be recovered pursuant to a FERC-accepted cost allocation proposed by the state or state entity.

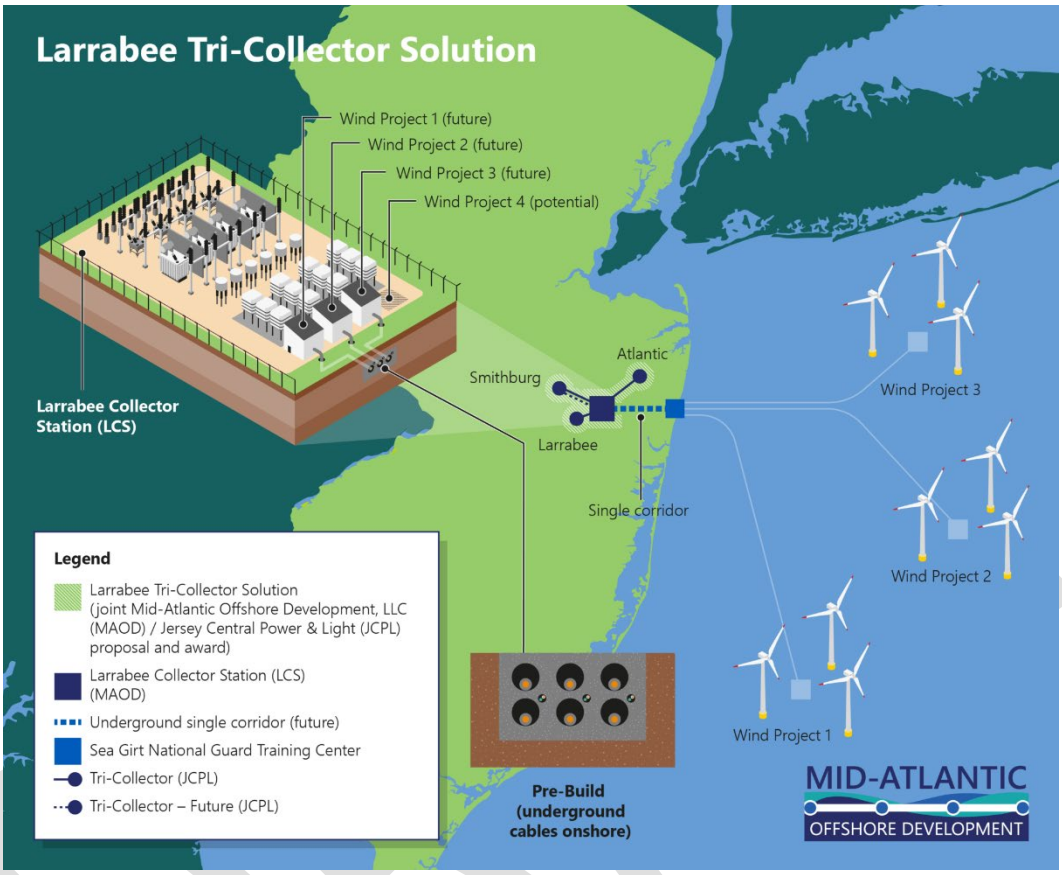
Under the NJ BPU's first and second solicitations, all projects proposed a bundled approach to generation and transmission, that is, each project would individually develop and construct its own transmission facilities to bring electricity onshore from its OSW plant. Working with PJM, the NJ BPU implemented a coordinated transmission approach by soliciting transmission solutions to meet the state's OSW goals. Under this approach (the SAA) the state, through ratepayers, would pay for the required onshore transmission system upgrades, thereby unbundling the onshore transmission solutions from the offshore transmission solutions, which would be the responsibility of the OSW generators. The PJM solicitation resulted in the selection by the NJ BPU of the Larrabee Tri-Collector Solution, the predominant portion of which is the Larrabee Collector Station (LCS) --- a tri-collector that distributes power to three existing points of interconnection on the PJM system --- Smithburg 500 kV, Larrabee 230 kV, and Atlantic 230 kV. In their SAA Order the NJ BPU noted that the selection of the LCS would result in tremendous savings for New Jersey ratepayers. In their third solicitation the NJ BPU required all bidders to use the LCS as the point of interconnection.

The NJ BPU has issued a solicitation for OSW developers to construct the Prebuild Infrastructure (PBI), which is the infrastructure between the identified landing point for offshore cables at Sea Girt National Guard Training Center in New Jersey and the onshore point of interconnection at the LCS. The PBI will consist of duct banks and cable vaults to accommodate transmission circuits for up to four future OSW projects, thereby enabling these future projects to access the wholesale transmission system. The PBI, which is envisioned as a single construction effort, will include only the necessary infrastructure to house the transmission cables and not the cables themselves. At a later date, when each OSW generation project is under construction, each project will be responsible for pulling its own export cables through the existing duct banks and interconnecting at the LCS.

This PBI concept will minimize disruption to local communities, permitting risks, and adverse environmental impacts. Other benefits ascribable to using the PBI include the reduction of cost overrun risks associated with project delays. Absent the PBI, separate sequential construction efforts would result in higher community impacts,

along with inefficiencies and redundancies regardless of cable routes being in one corridor or separate corridors.

Figure 7: New Jersey Transmission Solutions[92]

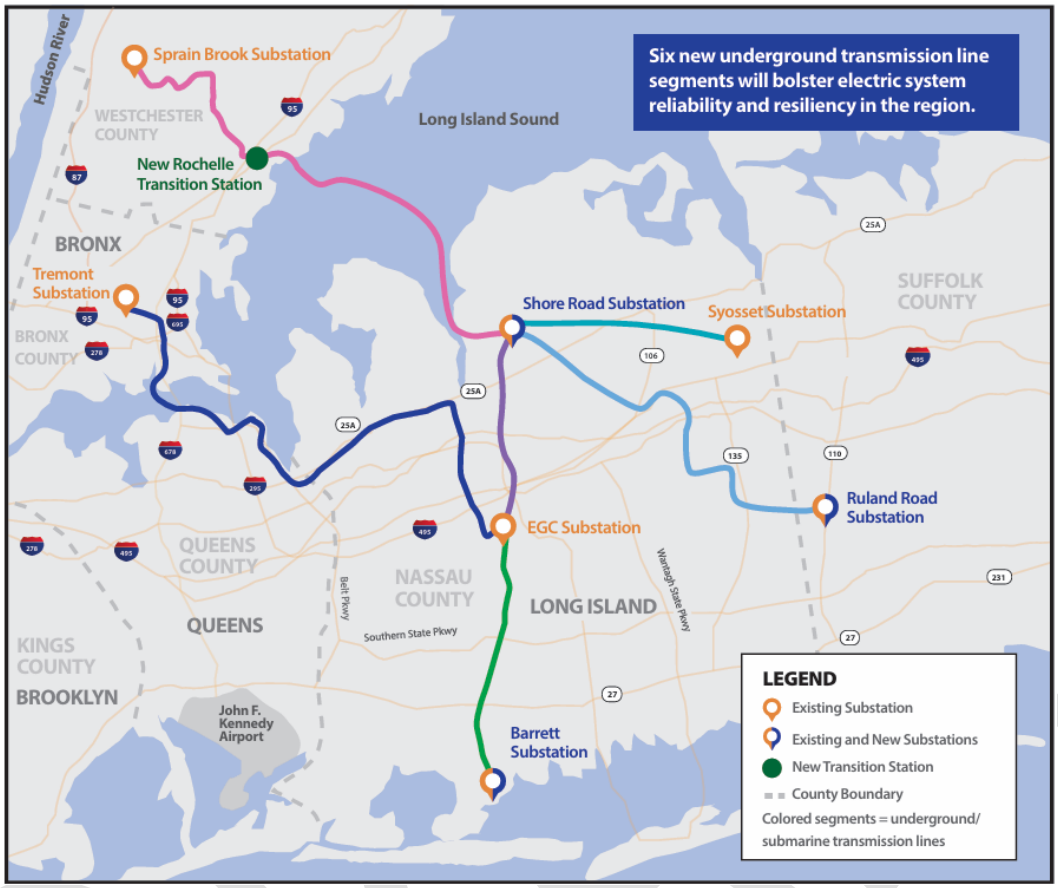


The NYISO Public Policy Transmission Process allows for the identification of transmission solutions by the New York PSC that will meet a Public Policy Transmission Need (PPTN). The NYPSC has identified a PPTN for OSW generation on Long Island (LI) and in New York City (NYC).

The LI PPTN provides for an increase in the export capability from LI to the rest of the state to ensure access to the full output of a minimum of 3,000 MW of OSW. The selected transmission project, Propel NY, will result in the construction of three new 345 kV AC tie lines from LI to the rest of the state and a 345 kV transmission backbone on LI. The project was approved by the NYISO Board of Directors in June 2023.

[92] Mid-Atlantic Offshore Development, Accessed March 4, 2025, page 1; available at https://www.midatlantic-offshore.com/

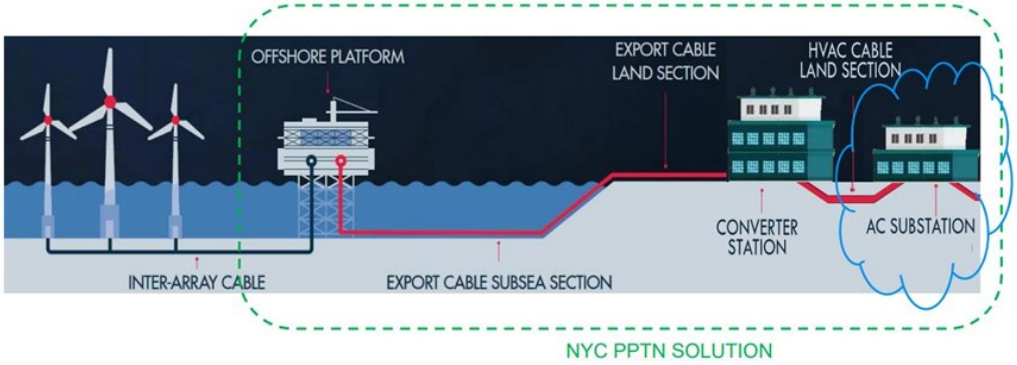
Figure 8: Propel NY Project Map[93]



The NYC PPTN, which is currently being studied by NYISO, seeks transmission solutions which can accommodate the full output of at least 4,770 MW of incremental OSW generation injected into NYC. The transmission solutions should also consist of both offshore and onshore components to enable power injection into NYC.

[93] Propel NY Energy, Propel NY Energy Fact Sheet, Accessed March 4, 2025, available at https://static1.squarespace.com/static/621797f51f11ca0489f2df6e/t/660bfb781e7471458bd3b8bc/1712061304476/PropelNYEngergy_2.24_Master_FactSheet.pdf

Figure 9: Illustrative Solution Requirements for NYC PPTN[94]



Future NYSERDA OSW solicitations will leverage integration with the NYC PPTN. NYSERDA believes that piecemeal transmission planning through NYISO's interconnection process to connect OSW projects to constrained points of interconnection through radial export cables is neither sustainable nor cost-effective. NYSERDA believes that development of points of interconnection through a coordinated transmission planning process like the PPTN process would provide cost clarity to developers bidding in NYSERDA's solicitations, allowing them to reduce or eliminate the risk premium ascribable to interconnection cost uncertainty.

The Public Policy Planning process continues with a new cycle currently underway. NYISO has posted seventeen responses from various parties that have identified specific needs. The PSC is currently considering these proposed needs in Case 24-E-0645.

Interconnection Rights Transfer

NYSERDA included a Fossil Repurposing Proposal option in their 2022 OSW solicitation. The option allowed developers to include plans to deactivate or change operations at fossil-based generation facilities as a part of their proposals. "Fossil Repurposing Proposals may, but are not required to, be linked to the Project's interconnection plan", though re-use of grid connection facilities is the most likely use

[94] Draft Clean Energy Standard Biennial Review, joint filing of NY DPS and NYSERDA in PSC Case 15-E-0302 - Proceeding on Motion of the Commission to Implement a Large Scale Renewable Program and a Clean Energy Standard, filed July 1, 2024. See page 21; available at https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Clean-Energy-Standard/A00194900000C313A126877CFFAA2B0C.pdf

of the assets.[95] Using existing interconnection capability may reduce costs relative to system upgrades necessary to make new interconnections. The 2024 solicitation included similar options, but the proposal instead referred to "Affected Resources".

Under the NYISO interconnection process, if a developer wants its facility to qualify as an installed capacity supplier and to participate in the NYISO-administered installed capacity market, the developer must obtain Capacity Resource Interconnection Service (CRIS). Upon qualification the developer attains CRIS rights. Under the NYISO Tariff a developer can transfer its acquired CRIS rights. For example, if a facility deactivates an existing facility within the New York control area and commissions a new one at the same electrical location, the CRIS status of the deactivated facility and its deliverable capacity level may be transferred to that same electrical location, provided that the new facility becomes operational within three years from the deactivation of the original facility.

Transfer of CRIS rights has surfaced as a potential mitigation measure for the costs of transmission system upgrades. OSW generators wishing to interconnect into the NYISO transmission system can take advantage of the transfer of CRIS rights by identifying interconnection points where existing generators are deactivating.

Offshore Wind Transmission Network Considerations

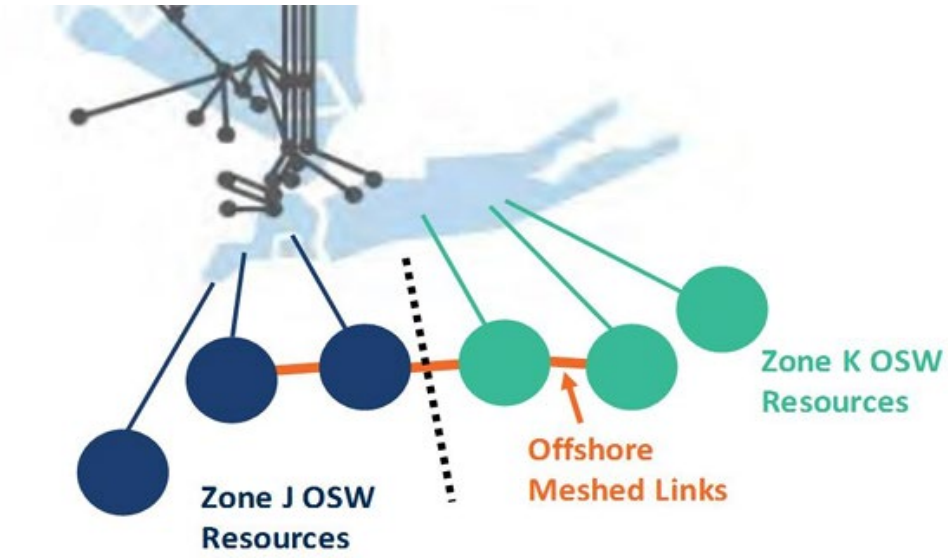
NYSERDA has introduced the concept of meshed ready to integrate adjacent OSW projects into an integrated network of OSW transmission infrastructure to promote economic, environmental and reliability benefits in NYISO. There have been infrequent discussions with New England and New Jersey to broaden the benefit impact of a regional, meshed ready solution. Each OSW project that was awarded through NYSERDA's first two OSW solicitations was designed to connect to the onshore alternating current (AC) grid through a radial connection. Going forward NYSERDA has proposed expanding the interconnection options for OSW generators to include the potential future connection to a meshed network.[96] OSW generators bidding into NYSERDA solicitations have to show that they are meshed ready, which means that their associated radial links to the onshore point of interconnection have

[95] NYSERDA, NYSERDA Request for Proposals ORECRFP22-1, July 27, 2022, page 32; available at https://www.nyserda.ny.gov/All-Programs/Offshore-Wind/Focus-Areas/Offshore-Wind-Solicitations/2022-Solicitation

[96] A meshed network is an offshore transmission configuration in which individual OSW generation facility substations are linked by connecting the AC side of several OSW substations. The interconnection allows more than one power-flow path between the onshore AC grid and an offshore meshed network.

been designed to meet the basic requirements which will allow them to interconnect to a future meshed network.

Figure 10: Illustrative Meshed Grid Concept[97]



A meshed network will not be constructed unless and until its implementation is directed by the NY PSC. However, the meshed ready requirements will allow minimum compatibility in the future implementation of a meshed network. If offshore systems are designed as meshed ready, the implementation of an offshore meshed network can occur with reduced costs compared to attempting to integrate offshore systems that do not have the necessary equipment or controls (*i.e.* not meshed ready) to integrate with other offshore systems.

NYSERDA believes that designing and building the offshore meshed network provides grid benefits by improving reliability, reducing curtailments in case of transmission outages, and re-routing power to the NYISO zones with most demand.

The NJ BPU, in their OSW solicitations, have introduced a concept identical to the NYSERDA meshed ready concept, which is referred to as Offshore Transmission

[97] Pfeifenberger et. Al, The Benefit and Cost of Preserving the Option to Create a Meshed Offshore Grid for New York, November 9, 2021, Page 9; available at https://www.brattle.com/wp-content/uploads/2021/12/The-Benefit-and-Cost-of-Preserving-the-Option-to-Create-a-Meshed-Offshore-Grid-for-New-York.pdf

Network (OTN).[98] In the most recent solicitation #4, projects bidding into the solicitation using high voltage direct current (HVDC) transmission have the option to include design components to allow for potential future development of and connection to an OTN. However, projects using HVAC transmission do not have to include design components to allow for future connection to an OTN.

The NJ BPU notes that operation and implementation of the OTN are not known at this time. Qualified projects would connect to an OTN in the future only if ordered or approved by the NJ BPU.

Advancing the meshed ready concept in New York and New England has been stymied by technical challenges, regional setbacks, and the lack of resolve by state entities to internalize the risk of uncertain capital expenditures to accommodate evolving technology.

Storage and Other Technologies

Several states have invited developers to offer paired storage as an optional component of their project bids. However, the compensation structure of the bids is unchanged, so bidders must adjust their products' pricing, which is based on offshore wind delivered, to account for the paired storage resource. Given that energy storage resources are not perfectly efficient, the quantity of energy offered for delivery may also decrease.[99] With increased capital costs and lost delivered energy, bids with paired storage are typically expected to have a higher price, though energy storage may also provide a benefit in non-price scoring. At this time, no storage has been associated with a selected and contracted offshore wind bid.

In Massachusetts Round IV, storage bids were allowed and were expected to have a different delivery schedule per bid form. To the extent that storage allows for increased deliveries during hours of the day that typically have higher demand and therefore prices, it can impact the quantitative calculation. Energy storage bids may also receive non-price scoring benefits from Firm Delivery & Energy Storage Benefits as part of project viability. Connecticut and Rhode Island did not solicit energy storage bids and have not done so in their previous offshore wind specific solicitations. Paired storage has been accepted as part of Connecticut's land-based

[98] The OTN is an interconnected offshore transmission system in which individual offshore platforms are linked by submarine cables to create a means for power to flow between adjacent offshore platforms in addition to HVDC cables connecting the offshore platforms to the onshore transmission network.
[99] In some cases for solar PV resources, depending on DC/AC connections and inverter sizing, paired battery storage can increase capacity factor or allow for inverter sizing to be reduced.

zero carbon RFPs, but no projects with a storage component were accepted in the 2023 zero carbon RFP.

New York allowed storage bids in their 2022 OSW solicitations but has not done so in the 2023 or 2024 solicitations. Storage bids may receive favorable scoring in non-price categories, and did not need to be co-located with the offshore wind project, though discharged energy must be paired with offshore wind output to receive ORECs. Notably, New York received and selected several storage bids as part of their Tier 1 onshore renewables RFPs from 2018 through 2022. Energy storage capacity has generally been relatively small compared to the bid capacity of the wind and solar generators. However, most of these projects have been cancelled.[100] Energy storage bids have not been a part of the 2023 and 2024 RFPs.

New Jersey considered storage in its first three solicitations, but not in the fourth (and most recent) round. New Jersey's SGD identifies informational requirements for storage to be considered but does not clearly identify any ways that bids with storage would receive favorable treatment in scoring.

Battery storage is mandated under 83E. Similar storage goals have been enacted in other states that are also attempting to meet climate goals. As of January 2025, Massachusetts had the tenth highest installed nameplate battery capacity out of US states.[101] The top four states, California, Texas, Arizona, and Nevada, have 85% of the nation's battery capacity. These four states enjoy better solar irradiance for solar pairing.

In Texas, energy storage is primarily driven by independent power producers (IPPs) who develop merchant projects. These projects operate without state-level storage mandates or utility contracts, relying instead on market revenues. The Electric Reliability Council of Texas (ERCOT) marketplace is an "energy-only" market, relying on energy revenue to recover fixed costs. This market is characterized by scarcity pricing and more volatile energy prices, especially during peak periods. In Texas, energy storage developers prioritize instantaneous power capacity (MW) over total energy capacity (MWh). This means they focus on how much power their systems can

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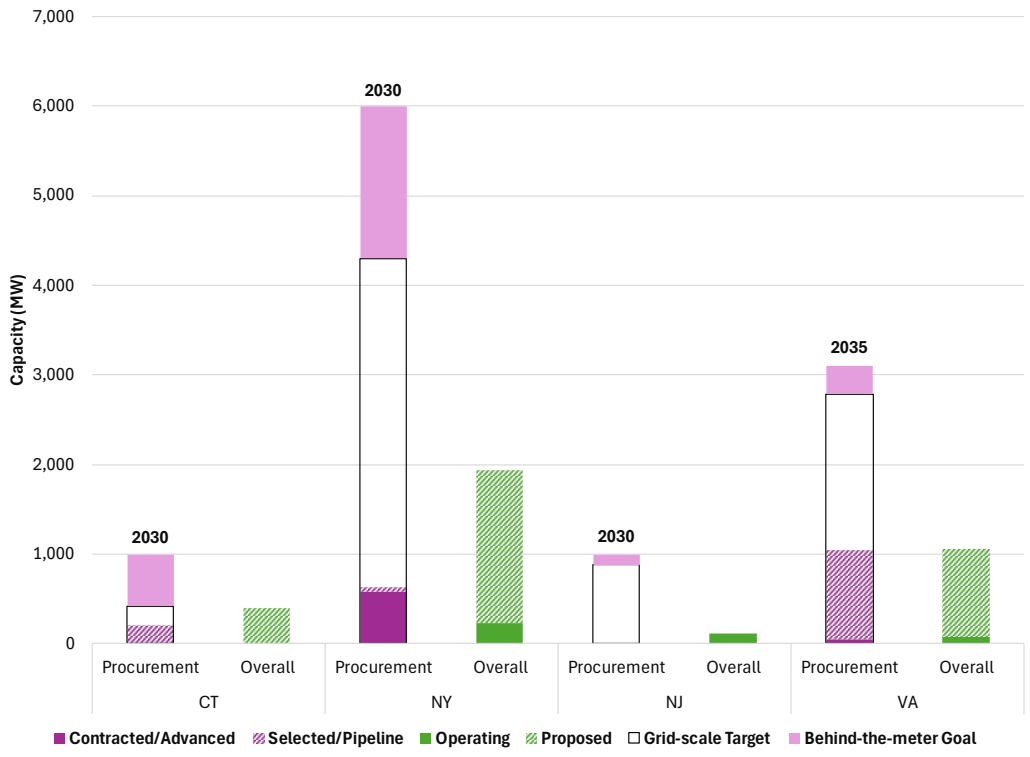
[100] Data.NY.Gov, Large-scale Renewable Projects Reported by NYSERDA: Beginning 2004 | State of New York, available at https://data.ny.gov/Energy-Environment/Large-scale-Renewable-Projects-Reported-by-NYSERDA/dprp-55ye/about_data

[101] U.S. Energy Information Administration, Preliminary Monthly Electric Generator Inventory (based on Form EIA-860M as a supplement to Form EIA-860), accessed March 17, 2025, available at https://www.eia.gov/electricity/data/eia860m/

deliver at any moment, rather than how long they can sustain that power. This approach allows them to quickly respond to high energy and reserve prices during peak demand times, maximizing their revenue even if they cannot provide power for extended periods. Storage in Texas also benefits from the ability to balance variable energy resources such as land-based wind and solar.

Arizona and Nevada have vertically integrated utilities that are able to commercialize storage as part of approved integrated resource plans. Siting for solar is relatively easier than in New England as well due to expansive deserts, and in some instances can be done closer to load (for instance nearby to Las Vegas). Standalone storage targets and development in selected states from the offshore wind peer group is shown below. Battery storage at the grid-scale has not seen widespread deployment in the Northeast or Mid-Atlantic. Massachusetts' peers are only beginning to embark on meeting standalone storage targets.

Figure 51: Energy Storage Targets and Development in Selected States[102]



[102] "Procurement" represents the energy storage target the state has set and progress to date. "Overall" represents the progress of storage installation and development pipeline based on EIA as of January 2025.

California is the leader in storage development.

Connecticut

Connecticut has taken a phased approach to energy storage deployment, established under Senate Bill 952 (2021).[103] The law mandates 1,000 MW of energy storage by 2030, including at least 580 MW to be installed as behind the meter (BTM). The DEEP is responsible for overseeing the implementation and procurement of this target. CT released a Storage RFP on March 11, 2024 (revised April 19, 2024). In December 2024, Connecticut made its first step toward grid-scale storage with the selection of the Naugatuck Avenue project, a 200 MW battery storage facility developed by Jupiter Power.[104] The project is awaiting PURA approval.

The compensation vehicle under DEEP's storage RFP is a Storage Performance Credit (SPC), which is a monthly $/kilowatt (kW) payment that does not receive any products in return, other than environmental attributes if they become applicable. The base SPC can be scaled down to reflect non-performance on days where the day-ahead energy price would suggest that the battery should be cycled, and it can scale up over time to reflect expectations of reduced energy margins as renewable energy penetration increases in ISO-NE. The contract term length can be as long as twenty years.

New York

New York has energy storage targets set under the 2019 CLCPA. In 2022, the state released a roadmap to achieve 6 GW of storage by 2030. In June 2024, the New York PSC issued an order approving proposed measures in the Roadmap. Through the order, new funding is approved for NYSERDA to incentivize storage program with $675M of funding for 1,500 MW of "retail" distributed projects and $100M in funding for 200 MW of funding for residential storage.[105] The PSC and NYSERDA oversee the state's energy storage deployment.

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[103] Senate Bill 952, Public Act No. 21-53, June 16, 2021, available at https://www.cga.ct.gov/2021/ACT/PA/PDF/2021PA-00053-R00SB-00952-PA.PDF

[104] Connecticut Department of Energy and Environmental Protection, Connecticut Announces Clean Energy Solutions, released 12/20/2024, page 2; available at https://portal.ct.gov/deep/news-releases/news-releases---2024/connecticut-announces-clean-energy-selections

[105] PUBLIC SERVICE COMMISSION, CASE 18-E-0130, Issued and Effective: June 20, 2024, page 60; available at https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Energy-Storage/2024-06-6GW-Energy-Storage-Order.pdf

To accelerate deployment, NYSERDA has launched several incentive programs, including:

- The Bridge Incentive Program offers upfront financial support for early-stage projects, including bulk, retail, and residential developments. Since launching in 2019, the Bridge program has awarded 1,072 MW of retail and bulk storage capacity. Among that, 190 MW was already completed by the contract, 630 MW had their contract approved, and 252 MW was cancelled.[106] 435 MW of the completed and active projects are at bulk system level.
- The Renewable Energy Standard (RES) allows energy storage to be paired with large-scale renewables to improve grid flexibility. Since the first Solicitations for Large-Scale Renewables in 2017, NYSERDA has awarded 274 MW of energy storage, with most projects co-located with solar. However, almost all the contracts got cancelled, except one 20 MW storage project co-located with solar under development status and expect to come online in 2026.
- Utility Bulk Storage Dispatch Rights Procurements require utilities to acquire dispatch rights for storage projects. LIPA has approved a 129 MW storage project at Kings Substation and Shoreham Substation, with an additional 50 MW expected to receive approval in the first quarter of 2025 from their 2021 bulk energy storage solicitation.[107] Consolidated Edison Company of New York Inc. (CECONY) and Orange and Rockland Utilities Inc. issued a joint RFP in December 2024 to procure 310 MW through the Bulk Energy Storage Scheduling and Dispatch Rights program, with contract execution planned for the second half of 2025.[108]

Under the Bridge Incentive Program, eligible projects receive incentive payments at a fixed amount per usable kWh of installed storage capacity. The projects receive four lump-sum payments, with the first payment conveyed at commercial operations and the following payments received in successive years of commercial operation. The

[106] Retail and Bulk Energy Storage Incentive Programs Reported by NYSERDA, accessed 03/11/2025, available at https://data.ny.gov/Energy-Environment/Retail-and-Bulk-Energy-Storage-Incentive-Programs-/ugya-enpy/about_data

[107] LIPA, LIPA Board of Trustees Approve Two Utility-Scale Battery Energy Storage Contracts, December 18, 2025, available at https://www.lipower.org/wp-content/uploads/2024/12/1218-Battery-Energy-Storage-Press-Release.pdf

[108] Con Edison, Bulk Energy Storage Request for Proposals, December 16, 2024, page 1; available at https://www.coned.com/en/business-partners/business-opportunities/bulk-energy-storage-request-for-proposals

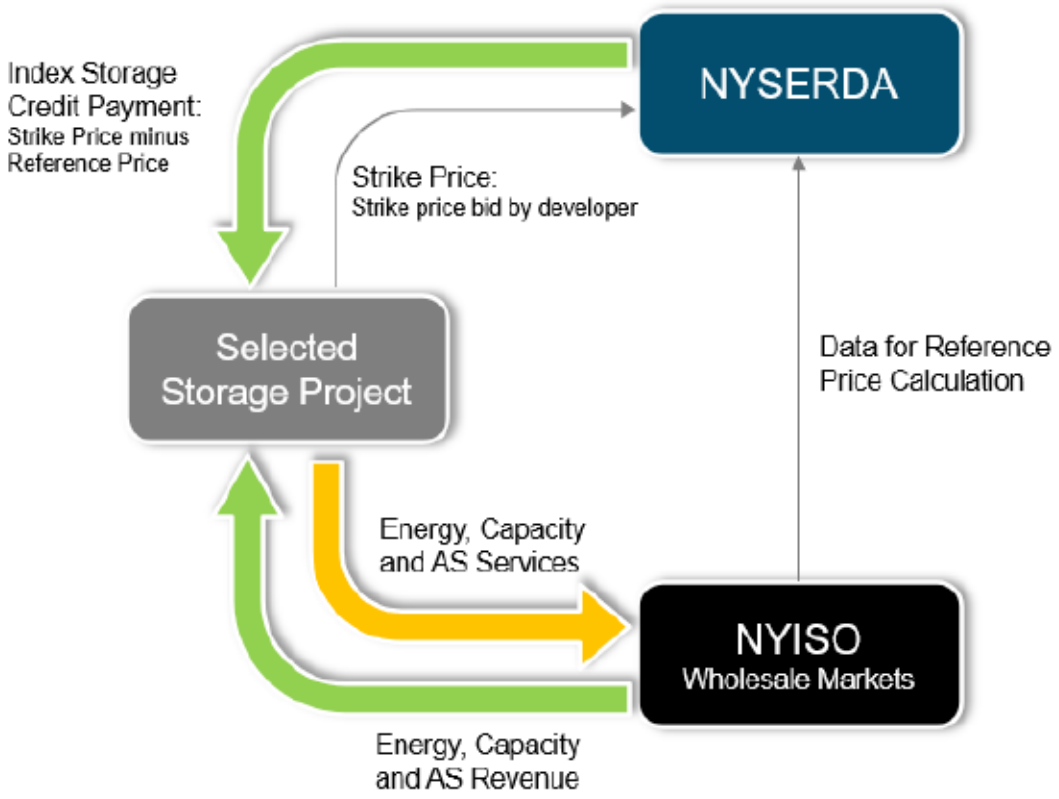
Utility Bulk Storage Dispatch Rights procurements commercialize storage via lump sum payments at commercial operations or on an annual basis. The developer maintains ownership and maintenance responsibilities, while the utility has control over the scheduling and dispatch of the storage facility.

Based on the assessment of potential market support mechanisms, the 6 GW Roadmap recommends a new Bulk Energy Storage Program developed with solicitations for standalone storage. Projects will be commercialized using an Index Storage Credit mechanism (ISC), which is anticipated to provide long-term certainty to projects while maximizing value to ratepayers.

The ISC mechanism, as proposed, is analogous to the "Index REC" approach adopted by the Public Service Commission and currently applied in NYSERDA's offshore wind and onshore large-scale renewables procurements, with the goal of unlocking similar benefits that the Index REC provides in those programs. Under the ISC approach, projects bid in a Strike Price, representing the required revenue for the project over a payout period, into competitive solicitation. NYSERDA would select and contract storage projects based on pre-determined evaluation criteria including price and non-price factors. Payments to awarded projects would be at predetermined intervals over the life of the contract, determined by subtracting a "Reference Price" from the Strike Price. The Reference Price represents an approximation of available market commodity revenue that projects could reasonably expect to earn.[109]

[109] NYSERDA. New York's 6 GW Energy Storage Roadmap - Stakeholder Overview Webinar: Bulk Storage. February 28, 2023. Slides 13-15; available at https://www.nyserda.ny.gov/All-Programs/Energy-Storage-Program/Developers-and-Contractors/Bulk-Storage-Incentives

Figure 16: Index Storage Credit: Illustration[110]



Each ISC therefore is proposed to represent one MWh of energy storage capacity that is operational on a given day. Each day a storage project is operational and available for dispatch, it would be credited with/compensated for a number of ISCs equal to the MWh of storage discharge capacity of the unit.

Projects would generate ISCs on operational days regardless of whether and how much they discharge; there would be no performance, discharge, throughput, or operational requirements under the ISC contract. However, given the proposed indexing of the Strike Price to the Reference Price, projects would still be incentivized to discharge/perform based on market signals.

NYSERDA and NY DPS currently have recommended a 15-year contract term for ISC contracts. ISC procurements have not been conducted yet.

[110] *Id.*, slide 14.

New Jersey

New Jersey established its energy storage targets in 2018 with P.L. 2018, Chapter 17, mandating 2,000 MW by 2030.[111] The state has seen slow deployment. The NJ BPU oversees procurement but has not yet brought storage capacity online through their NJ Storage Incentive Program (SIP). Of this target, 1,000 MW of storage capacity is expected to come from Competitive Solar Incentive (CSI) Program. The remaining 1,000 MW capacity is allocated to NJ SIP as a standalone storage project, with 120 MW coming from distributed storage.[112] In early 2025, New Jersey will launch its Grid Supply Segment of the Storage Incentive Program, followed by the Distributed Storage Segment in 2026. These programs will provide financial incentives to accelerate energy storage deployment and bring the state closer to its 2 GW goal.

Grid Supply energy storage systems will be awarded fixed incentive payments through an annual competitive bidding structure. The first will be a fixed incentive, measured in $/kWh of maximum usable energy storage capacity and paid one time upon commercial operation. The second incentive will be a performance-based incentive applicable to benefits created through the storage system's operations. Grid Supply storage resources will initially receive only a fixed upfront incentive, as the NJ SIP will defer an avoided emissions-based performance mechanism until suitable datasets become available.

Virginia

Virginia first established its energy storage mandate in 2020 with House Bill 1526, setting a target of 3,100 MW by 2035. At least 10% of projects must be deployed behind the meter, and a minimum of 35% of capacity must be owned by non-utility entities.[113] This target may expand if bills passed by the state legislature are signed by the Governor.[114] The proposed legislation targets 10,000 MW by 2045, made up of

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[111] NJ Assembly, No. 3723, May 23, 2018, page 1; available at https://pub.njleg.gov/bills/2018/AL18/17_.HTM#:~:text=No%20later%20than%20six%20months,of%20energy%20storage%20by%202030.

[112] NJ SIP Straw Proposal, September 29, 2022, page 13-14; available at https://nj.gov/bpu/pdf/publicnotice/Notice_StakeholderMeetings_NewJerseyEnergyStorageProgram.pdf

[113] H.B. 1526, Approved April 11, 2020, available at https://legacylis.virginia.gov/cgi-bin/legp604.exe?201+ful+CHAP1193

[114] SB1394, Energy storage requirements; Department of Energy, et al., to develop model ordinances, reports. Accessed 03/12/2025, available at https://lis.virginia.gov/bill-details/20251/SB1394
The bills were passed with a Democratic majority.

6,000 MW of short-duration storage (<10 hours) and 4,000 MW of long-duration storage (10+ hours).

Dominion has proposed building 98 MW of storage, and 459 MW will be procured through PPAs.[115] Dominion's currently active procurement compensates storage components on a $/MW-month basis. Appalachian Power issued RFP Purchase and Sale Agreements (PSAs) last year seeking 800 MW of Wind Energy Resources, Solar Energy Resources with Optional Battery Energy Storage Systems, and/or Standalone Battery Storage Systems, with the contract execution expected from this solicitation in April 2025. Appalachian Power will receive ownership of assets developed under their RFP.

California

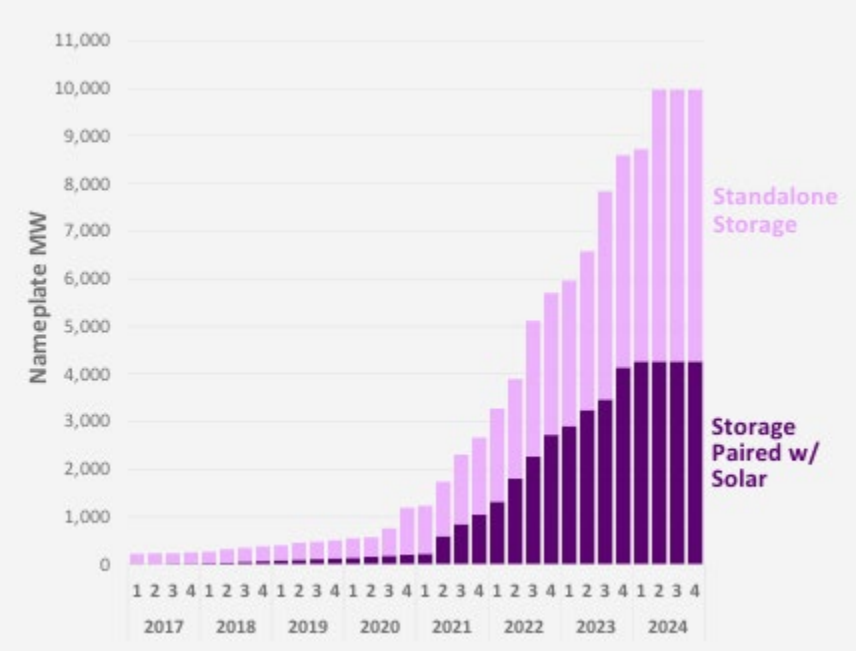
California was the first state to mandate energy storage procurement under Assembly Bill (AB) 2514 in 2010. In 2013, the California Public Utilities Commission (CPUC) issued Decision (D.)13-10-040 which set an AB 2514 energy storage procurement target of 1,325 MW by 2020.[116] This procurement target was set for implementation by 2020, with installations no later than the end of 2024.

Grid-scale storage in California has grown aggressively since mid-2021, driven mainly by reliability and integrated resource planning (IRP) regulatory mandates, as seen in *Figure3* below. SB 350 (De León, 2015) directed the CPUC to develop an IRP process to ensure that California's electric sector meets GHG reduction goals while maintaining reliability at the lowest possible costs. To follow through on approved plans, utilities develop long-term procurements via applications. These seek approval of contracts or authority to build utility-owned resources. Notably, paired storage is a large part of the mix.

[115] Cardinal News, Virginia lawmakers push more for energy storage, February 24, 2025, page 5; available at https://cardinalnews.org/2025/02/24/virginia-lawmakers-push-more-for-energy-storage/

[116] To be procured by Pacific Gas and Electric Company, Southern California Edison Company and San Diego Gas & Electric Company. CPUC. DECISION ADOPTING ENERGY STORAGE PROCUREMENT FRAMEWORK AND DESIGN PROGRAM. Decision 13-10-040. October 21, 2013. Page 2; available at https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M079/K533/79533378.PDF

Figure 13 - Energy Storage by Procurement Track in California as of Summer 2022[117]



Unlike in New England, most of California's generation is secured via bilateral agreements with utilities, though there is a wholesale market operated via California Independent System Operator (CAISO). Some storage is utility-owned, but the lion's share is contracted via different commercial structures as dictated by changing procurement needs. Commonly used are PPAs for energy and capacity and resource adequacy agreements (essentially contracts for capacity only).

In 2024 (through AB 1373), the state has added a procurement target for 2 GW[118] of long-duration storage, to be deployed between 2031 and 2037.[119] The CPUC may request that the Department of Water Resources procure electricity from diverse long lead-time resources on behalf of customers of all load-serving entities under the

[117] Lumen Energy Strategy, LLC, Energy Storage Procurement Study Report, May 31, 2023, Page 19; available at https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/energy-storage/2023-05-31_lumen_energy-storage-procurement-study-report.pdf

[118] 1 GW of multi-day long-duration energy storage (LDES), and up to 1 GW of LDES with a discharge period of at least 12 hours. CPUC. DECISION DETERMINING NEED FOR CENTRALIZED PROCUREMENT OF LONG LEAD-TIME RESOURCES. Decision 24-080-064. August 22, 2024. Page 2; available at https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M539/K202/539202613.PDF

[119] California Energy Commission, California Energy Storage System Survey, accessed 03/12/2025, available at https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-storage-system-survey

Commission's IRP purview.[120] Additionally, publicly-owned utilities may opt in to allow their customers to share in the benefits of these clean energy technologies.[121]

Massachusetts Procurement Stakeholder Engagement and Review

Clean Energy Procurement Public Comments

As part of the drafting process, the Clean Energy Procurements Drafting Team solicits public comment on a draft RFP or a set of stakeholder questions. The public comment period is a crucial means to gain insight from stakeholders regarding the optimal design of the solicitation to maximize benefits for ratepayers.

In the most recent Section 83C Round IV process, the RFP Team collected public comment by March 1, 2023.[122] In order to allow commenters to provide insights to the RFP Drafting Team based on commercially sensitive business information, commenters were also allowed to submit confidential comments.

The public comment request for 83C Round IV included questions to stakeholders regarding: the proposed solicitation size and schedule; transmission optimization; methods to manage macroeconomic uncertainty and inflation; how to maximize the benefits to ratepayers of federal funding opportunities under the IRA and BIL; economic development and diversity, equity, and inclusion requirements in the RFP; and methods to ensure mitigation of socioeconomic and environmental impacts from projects.

There were 25 parties that submitted comments on the 83C Round IV solicitation, including prospective bidders (offshore wind developers), transmission developers, environmental and other non-profit organizations, state legislators, supply chain companies, and energy storage companies. Commenters were broadly supportive of indexing mechanisms to address macroeconomic uncertainty, although they had differing opinions on how exactly to structure such a mechanism. Commenters

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[120] CPUC. DECISION DETERMINING NEED FOR CENTRALIZED PROCUREMENT OF LONG LEAD-TIME RESOURCES. Decision 24-080-064. August 22, 2024. Page 2; available at https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M539/K202/539202613.PDF

[121] *Id.*, page 4.

[122] Massachusetts Clean Energy; Request for Public Comments, available at https://macleanenergy.com/83c-iv/request-for-public-comments-rfp/

expressed concerns with certain transmission requirements like the "mesh-ready" requirement in the New York state procurements but indicated interest in integrating coordinated regional transmission efforts into the 83C process. Many commenters expressed a desire for greater transparency on how qualitative factors like economic development are weighted in the evaluation.

The RFP Drafting Parties reviewed all public comments received prior to finalizing the Round 4 RFP. The public comment process is an integral part of RFP development to build on lessons learned from prior procurements and inform the RFP Drafting Parties of stakeholder perspectives. Allowing confidential comments with commercially sensitive business information is also helpful to provide perspectives from prospective bidders that can help the RFP Drafting Parties design a procurement that maximizes benefits for Massachusetts ratepayers.

Surplus Interconnection Service

In the DOER and EDCs joint petition for approval of the 83C Round IV RFP, a commenter raised the option of Surplus Interconnection Service as a vehicle to reduce transmission costs associated with procurements. The RFP as filed required all projects to be able to interconnect at a Capacity Capability Interconnection Standard (CCIS) that would allow the full deliverability of the project and allows the project to participate in the capacity market. This requirement therefore excludes projects from interconnecting at sites with surplus interconnection, should such surplus service not meet the CCIS. Under the surplus interconnection avenue, an existing interconnection customer could share interconnection capacity with a new interconnection customer. Customers can transfer Network Resource Capability Service (NR) only, or both NR and Capacity Network Resource Capability Service (CNR). Past 83C solicitations have allowed generators to utilize surplus interconnection service if such surplus service includes both NR and CNR service, or if additional elective upgrades are identified such that the offshore wind generator can interconnect at a level equivalent to the CCIS without being transferred surplus CNR service. However, the commenter requested that only NR service, and not the CNR service that has been required under prior 83C procurements (and remained the requirement for 83C Round IV), be eligible without any additional elective upgrades to interconnect at a level equivalent to the CCIS.

Under a Surplus Interconnection Service Agreement, an offshore wind project could bypass the traditional interconnection study process and receive NR with no costs for Network Upgrades. However, the customer would presumably have to negotiate some payment in the Surplus Interconnection Agreement with the existing

interconnection customer. As an NR customer, offshore wind would not necessarily be able to deliver energy during stressed system conditions as the existing customer would retain priority. CCIS has been viewed as a proxy for "deliverability" because it is designed to ensure that any given generator's qualified capacity can be delivered during worst-case conditions. ISO-NE currently does not have a test or interconnection standard for full deliverability of energy from variable energy resources during stressed system conditions, and therefore CCIS remains the best available proxy. Reducing the quality of interconnection standard to NR would mean that existing generation and offshore wind with shared NR may not be able to fully deliver during stressed conditions. Reduced deliverability runs counter to statutory requirements in 83C to mitigate winter price spikes. The DOER and EDCs' clarification letter noted that the incumbent generators were active during winter months, and particularly during the 2017/2018 winter season when ISO-NE experienced particularly severe and protracted cold snaps.[123]

CCIS requirements may not work under the reformed cluster-based interconnection process pursuant to FERC Order 2023 implementation and will likely require modification in future procurements. For example, the cluster-based interconnection process will not allow for interconnection requests outside of cluster entry windows. Future bidders that are not participating in a current cluster or do not have advanced interconnections prior to the implementation of the cluster process may not be able to meet the interconnection request requirement in future procurements. Importantly, 83C Offshore Wind solicitations have not required generators to obtain capacity supply obligations in the capacity market. Instead, generators have been required to interconnect at a level that is equivalent to the CCIS, which can be obtained through capacity market participation or through elective upgrades outside of the capacity market process. The reformed ISO-NE interconnection process and capacity market design may make it difficult or impossible for generators to identify and build elective upgrades to interconnect at a CCIS-equivalent level without participating in the capacity market.

Part of ISO-NE's FERC Order No. 2023 implementation process is a transition process from the backlogged serial queue to the future cluster-based study process. This transition process was proceeding tentatively, pending FERC's approval of ISO-NE's

[123] Department of Energy Resources, Eversource Energy, and National Grid, D.P.U. 23-42, Petitioners' Clarification Letter on JERA Comments, June 13, 2023, available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom//17570534

compliance filing, during the 83C Round IV evaluation process. The transitional cluster study was scheduled to begin on October 14, 2024, but it has been delayed indefinitely pending an order from FERC on ISO-NE's Order No. 2023 compliance filing. If FERC accepts ISO-NE's compliance filing, and ISO-NE initiates the transitional cluster study prior to the next 83C procurement, then the timeline for the transitional cluster and future clusters will be effectively set (pending a potential 150-day restudy period). However, there is a risk that continued delays from FERC could lead to significant interconnection study timeline uncertainty for generators bidding in future 83C procurements. In addition, ISO-NE's Capacity Auction Reforms (CAR) project will transition the forward capacity auction into a prompt seasonal auction, which could further complicate the way that CCIS is determined in future capacity markets. In other markets that have instituted changes to capacity accreditation, such as the Pennsylvania-New Jersey-Maryland Interconnection (PJM), the MW of capacity interconnection needed to maximize accreditation must represent a higher portion of the energy interconnection value.[124] It is unclear how CAR might consider such modeling adjustments.

Given the complexities that future interconnection and capacity market reforms are creating, all 83C interconnection requirements, including the CCIS-equivalent requirement, could be revisited in future solicitations. While there is value in the cost certainty that the NR-only Surplus Interconnection Service route would provide, this cost certainty must be balanced against evaluating reduced deliverability at the point of interconnection (POI) and the lack of Qualified Capacity for the project. While Capacity is not currently one of the products that is purchased under 83C procurements, developers may consider capacity revenues in the formation of their bid prices for energy and environmental attributes.

Independent Evaluator Reports

Since Section 83D, the IE has filed reports in both the RFP and contracts review proceedings at the DPU.

The IE issues a report to the DPU on the proposed timeline and method of solicitation and the solicitation process implemented by the EDCs and DOER and includes recommendations, if any, for improving the process under Section 83C. In each of the

[124] Under more advanced resource adequacy modeling techniques, intermittent renewables are modeled using variable profiles. In many hours output can be far greater than the average capacity factor during performance periods, or zero. If output is limited by the CCIS or RTOs' equivalent, MW of accredited capacity will be lower.

four issued reports, the IE indicated that the RFP design was fair and did not unduly favor EDC affiliates, in addition to supporting an open and transparent implementation of the bid evaluation and selection process. The IE did not provide any recommendations in the first round.[125] In Section 83C Round II, the IE recommended the DPU not allow a "regulatory out" clause in the form PPA(s) or in any executed PPAs submitted to the DPU.[126] In Round III, the IE supported the price cap and provided additional recommendations related to the EDCs' form PPA(s), including provisions related to right of first refusal on the sale of RECs, price adjustments related to federal tax qualification, and contract amendments due to changes in accounting standards.[127] In the most recent Section 83C Round IV report, the IE recommended the RFP drafting parties make a draft RFP available for public comment, enhance the transparency of the evaluation process, and consider a Non-Delivery Disincentive provision to strengthen the incentives for contract performance.[128]

The IE also issues a report to the DPU upon the EDCs filing long-term contracts for review and approval, which summarizes and analyzes the solicitation and bid selection process and provides the IE's assessment of whether all proposals were evaluated in a fair and objective manner. In each of the three reports issued, the IE has concluded that all bids were evaluated in a fair and objective manner through the conduct of an open, fair and transparent solicitation and bid selection process that was not unduly influenced by an affiliated company.[129] In Section 83C Round II, the IE made recommendations related to the monitoring of contract negotiations and providing form PPAs for the IE's review. In Section 83C Round III, the IE recommended the RFP drafting team address whether to allow for a bidder to include any

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[125] Peregrine Energy Group, Section 83C Round 1 Independent Evaluator Report (D.P.U. 17-103), May 5, 2017, available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom/9183212
[126] Peregrine Energy Group, Section 83C Round 2 Independent Evaluator Report (D.P.U. 19-45), April 1, 2019, available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom/10550377
[127] Peregrine Energy Group, Section 83C Round 3 Independent Evaluator Report (D.P.U. 21-40), March 15, 2021, available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom/13259399
[128] Power Advisory, Section 83C Round 4 Independent Evaluator Report (D.P.U. 23-42), May 5, 2023; available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom/17411409
[129] Peregrine Energy Group, Section 83C Round 3 Independent Evaluator Report (D.P.U. 22-70, 22-71, 22-72), June 6, 2022, available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom/15038926; Peregrine Energy Group, Section 83C Round 2 Independent Evaluator Report (D.P.U. 20-16, 20-17, 20-18), February 14, 2022, available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom/11824751; Peregrine Energy Group, Section 83C Round 1 Independent Evaluator Report (D.P.U. 18-76, 18-77, 18-78), August 3, 2018, available at https://fileservice.eea.comacloud.net/FileService.Api/file/fileroom/9685209.

amendments to existing PPAs and modifications to standards of conduct to avoid potential or actual conflicts of interest.

Limitations of Current Procurement Authorities

Following the above review of previous procurements, DOER has identified the following limitations of the current statutory authority for Clean Energy Procurements:

Resource specific: Currently, DOER only has authority to solicit for offshore wind resources and mid-duration storage.[130] While offshore wind is the backbone of the Commonwealth's decarbonization strategy, meeting emissions limits set under the GWSA and CECPs will require a portfolio of resources, including onshore wind, solar, paired storage, and other clean energy sources.

Generation only: The current procurement uses a power-purchase agreement structure which only allows for the purchase of energy and associated environmental attributes. As the electric system transitions, there will be a need to finance projects that provide other energy services such as demand response, reliability, and delivery infrastructure. Section 83E Round II allows for the solicitation of energy services in 2026. Additionally, the purchase of energy as well as attributes does not allow for customers to take advantage of future market reforms that support the development of clean energy.

Complexity and Multiple Reviews: The current procurement process requires a significant amount of process and review that is not the most effective at receiving and considering public input and can limit how frequently the RFPs can be released. For example, the current RFP process requires that all RFPs are reviewed by the DPU. This review occurs every time although the structure of the RFP has not changed significantly over the last several solicitations and the DPU has rarely modified the RFP after review. Additionally, these added requirements limit how quickly DOER and the EDCs can conduct multiple procurements as new RFPs have to be reviewed each time.

[130] Section 82 in Chapter 239 of the Acts of 2024 allows DOER to "coordinate with one or more New England states undertaking competitive solicitations to consider projects for long-term clean energy generation, transmission or capacity for the benefit of residents of the commonwealth and the region. "

Deadlines: The current procurement includes 24-month requirements that may not align with emission limits or RPS timelines. By including the timelines and amounts of specific generation resources in the solicitation requirements, DOER does not have the flexibility to buy the amount of clean energy at the time it may be needed. Additionally, although regional coordination is allowed, the requirements around timing can mean that solicitations do not line up across the region.

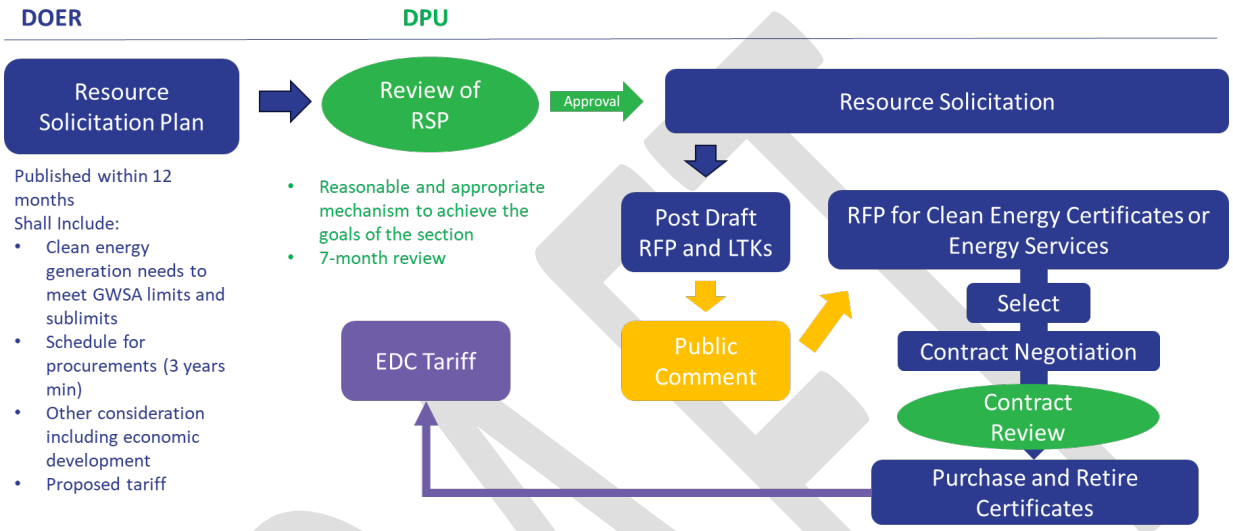
Role of EDCs and Contracts: Currently, the procurement structure relies on the EDCs to negotiate and execute contracts with the selected projects. Although DOER selects the projects, the EDCs still have an important role in the process. Because of affiliate concerns, their participation requires additional safeguards that can slow the process. EDCs earn 2.25% remuneration on all approved contracts, which does not exist in any other jurisdiction, and represents a significant cost as contracts increase in size and frequency.[131] Additionally, because the EDCs execute the contracts, there are limitations on who else can participate in the negotiation. For example, municipalities or other organizations are not able to participate.

[131] For example, for the approved Section 83C Round III contracts, the remuneration value was estimated to be xxx.

Legislative Recommendations

Overview of DOER Procurement Language

Figure 7: DOER Recommendation for New Procurement Framework



DOER proposes a new structure for clean energy procurements that provides additional flexibility to respond to changes in energy markets, clean energy development, and GWSA greenhouse gas emission reduction requirements. This language improves the current overall procurement structure while maintaining the long-term contract framework. This allows for the procurement process to be consistent with future regional and national market improvements.

The proposed framework builds upon the existing procurement model, maintaining open and competitive procurements that result in long term contracts with clean energy developers. New deliverables, such as the Resource Solicitation Plan (RSP), and shifting contracting responsibility to DOER are major changes that address common concerns and limitations with our current process.

The proposed methodology begins with DOER developing the RSP, which identifies the necessary clean energy resources; the type, capacity, and timing, to support the Commonwealth's emission reductions targets. This connects the need for procurement directly to the GWSA and the CECPs published by EEA. Although this gives DOER more flexibility to determine procurements, DOER is still constrained by the legislative mandate to achieve net-zero in 2050. The RSP will include:

(i) a description of the clean energy generation and energy services needs sufficient to maximize the commonwealth's ability to achieve compliance with GWSA limits and sublimits, including but limited to resource type, nameplate capacity amounts and commercial operation dates for new resources with a target to achieve offshore wind energy generation equal to approximately ten gigawatts of aggregate nameplate capacity not later than December 31, 2040;

(ii) a schedule for clean energy solicitations that DOER will conduct within the subsequent 3 years after RSP approval;

(iii) economic development objectives and requirements for the clean energy solicitations;

(iv) a mechanism for the EDCs to recover the costs associated with long-term contracts for environmental attributes or energy services entered into by the department under this section, including any administrative costs to support the department's requirements under this section; and

(v) a review of the previous clean energy solicitations.

To develop the RSP, DOER will consult the DPU and the AGO, in addition to seeking public comment. The RSP will need to meet the legislative requirements and clearly demonstrate the need for any recommended procurements. Once complete, DOER will file the RSP at the DPU for their review. This review will take no more than seven months. The DPU review process will ensure that each RSP undergoes a full formal adjudication process. DPU will approve the RSP if they find that it meets the requirements of the new legislation and the proposed solicitations will help the Commonwealth meet GWSA emission limits. In addition to approving the RSP, the DPU will direct each EDC to file a tariff that allows for the recovery of costs associated with future procurements and approved contracts. Once the DPU approves the RSP, DOER will move into the procurement phase.

DOER will develop the RFP and draft contracts based on the approved RSP. DOER will provide these documents for public review and comment. This will help DOER improve the solicitation process and ensure that the RFP will be open and competitive. DOER will post the final RFP following the approved timeline in the RSP. Solicitations may be technology-neutral or resource specific. DOER will structure the draft contracts to support the development or operation of the contracted resources. DOER will consider pricing structures, such as indexing to the energy market, to reduce costs for ratepayers and reduce cost risks. The draft contracts term may vary, up to 30 years in length, depending on the technology type or the needs of the solicitation.

Following public engagement, DOER will revise the RFP as appropriate and open the solicitation to Bidders. Bidders will submit bids consistent with the RFP requirements.

Similar to the current process, DOER will describe the evaluation framework, including bidding requirements and preferences, in the RFP. RFPs will require bidders to provide:

i. documentation reflecting the applicant's bidder's demonstrated commitment to workforce and economic development;
ii. a statement of intent concerning efforts that the applicant bidder and its contractors and subcontractors will make to promote workforce or economic development through the project;
iii. documentation reflecting the applicant's bidder's demonstrated commitment to expand workforce and supplier diversity, equity and inclusion;
iv. documentation as to whether the applicant bidder and its contractors and subcontractors participate in a state or federally certified apprenticeship program;
v. a statement of intent concerning how or if the applicant bidder and its contractors and subcontractors intend to utilize apprentices on the project;
vi. documentation relative to the applicant bidder and its contractors and subcontractors regarding their history of compliance with state labor law and intent to remain in compliance;
vii. documentation of the bidder's history with picketing, work stoppages, boycotts or other economic actions against the bidder;
viii. documentation relative to whether the applicant bidder and its contractors have been found in violation of state or federal safety regulations in the previous 10 years; and
ix. plans for mitigation, minimization and avoidance of detrimental environmental and socioeconomic impacts, including through meaningful consultation with impacted environmental and socioeconomic stakeholders, including federally recognized and state acknowledged tribes and, in the case of offshore wind, commercial and recreational fishing.

In addition to the above threshold and eligibility criteria, DOER will develop an evaluation framework that prefers those bids that demonstrate that their plans will result in benefits to the Commonwealth and bids that are committed to their plans through signed agreements or targets. This qualitative evaluation allows DOER to

identify the most beneficial projects that help achieve a clean energy future for all in the Commonwealth.

Following the quantitative and qualitative evaluations, DOER will review the proposals' benefits and select projects that maximize Massachusetts' ability to achieve net-zero in 2050 per the GWSA and CECP. DOER will enter into contract negotiations with the selected developers based on the draft contracts. DPU will review and approve executed contracts as being consistent with the approved RSP and in the public interest to the Commonwealth. This final review of the contracts preserves the cost protections from DPU review.

DOER will administer the approved contracts, ensure compliance with the executed terms and the delivery of the purchased products. DOER will retire all purchased environmental attributes on behalf of electric distribution customers. As RPS and other portfolio standard compliance is met by the retirement of attributes, DOER will reduce the portfolio standard compliance obligations commensurate with the purchased attributes. This will reduce the obligations on electric suppliers and reduce supply costs for all consumers.

DOER will regularly recover the costs associated with the contract through an electric rate tariff filed by the EDCs and approved by the DPU. This is similar to how clean energy procurements costs are recovered under the current framework. The proposed framework establishes fund for DOER to fund the contract administration. DOER anticipates that the ratepayer cost will be negligible as compared to the current renumeration of 2.25% of contract costs that is provided to the EDCs.

Goals of the Proposed Framework

DOER developed the proposed framework to address the limitations of the current process. Some of the key goals of the proposed framework are:

Connection to GWSA Requirements: The new methodology connects the solicitations to meeting the GWSA requirements instead of the RPS. The RPS is only one policy identified in the CECP. The GWSA requires that EEA publish or update the CECP every 5 years, identifying the strategies and policies that the Commonwealth will implement to meet the legislatively required emission limits. By connecting the procurement to those plans and the existing legislative emission limits, DOER will be able to facilitate the financing of the diverse projects necessary for decarbonization.

Resource Portfolio: The Decarbonization Roadmaps and the CECP both identify that Massachusetts will need a portfolio of new resources, including generation and storage resources, to meet our emission limits. The new methodology allows for the

solicitation and procurement of both energy attributes and energy services. The new methodology requires DOER to develop an RSP. This will include an evaluation of the energy markets and GWSA and a determination of the amount, type, and timing of new resource development required to meet GWSA requirements

Flexibility in Timing: The new methodology requires DOER to evaluate the energy markets and determine the required amount and timing of new resource development to meet GWSA requirements. This allows DOER to identify when resources are needed and set a procurement schedule that meets those requirements. Key timelines DOER will consider in the RSP are:

GWSA Limits: EEA sets sector specific emission sublimits in the CECP for every 5 years. DOER will be able to consider these emission limits.

Predictability in Schedules: DOER will be able to set predictable schedules that will ensure long-term alignment with supply chain and industry development.

Regional coordination: DOER will be able to set timelines that coincide with other state or regional solicitations and programs that will strengthen regional coordination.

DOER Contracting: With the new methodology, DOER would be the contracting party, not the EDCs. This would stop the use of remuneration, or 2.25% of the contract costs assigned to the EDCs. Additionally, DOER could use indexing or other contract terms to facilitating and lowering costs of project financing. As the contracting party, DOER can coordinate with municipal organizational partners to collaborate on contract pricing and negotiation.

Preservation of DPU Review and Cost Protections: The new methodology preserves the DPU review and cost protections that will protect ratepayers from unaffordable costs. DPU will review the RSP, the contracts, and the recovery tariff. In addition to the DPU process and associated public participation, the new methodology requires DOER to post the RFP and draft contracts for public comment before use.

Flexibility with Market Reforms: The new methodology does not include contracts for energy, only attributes. For example, DOER could use contracting that indexes the attribute price to the energy market to facilitate financing. Not purchasing energy will ensure that the contracts will be more compatible with future energy market reforms, capturing future benefits for ratepayers.

Framework: The new methodology creates a framework for DOER-led solicitations. Additional requirements, minimums, or goals could be added to the framework to shape the solicitation process while preserving the benefits listed above.

Needs and Risks with Proposed Framework

Developing Draft Contracts

The most significant change between the current structure and the DOER-proposed framework is shifting DOER to the contracting party. The EDCs have developed their long-term contract and negotiation skills over the multiple procurements. Although DOER can build upon this existing knowledge, there will be key aspects of the contracting process that need to be reviewed and restructured with DOER as the contracting party.

Assessing Security: Current solicitations require bidders to provide the EDCs security at the time of selection and contract approval to ensure projects move to commercial operation. As contracting party, DOER will need to determine the amount and form of security. Additionally, DOER will need to be able to accept and hold security.

Change of Law: All long-term contracts must address what is known as "change in law" risk. There is always risk that laws and markets that framed the evaluation for a selected project will change over the term on the contract. For clean energy generation contracts, this may include changes to the RPS that either decrease or increase the value of the purchased product. It is important therefore that the contract speak to this risk, so buyers are not forced to buy products that have limited or no value. Often, change in law provisions speak to the dispute resolution tools the parties will use to determine and potentially share risk. As the EDC contracts include terms on change in law, any DOER contracts will have to address change in law as well.

Liability and Indemnity: Clean Energy Procurement success will include the construction and operation of significant clean energy projects. It will be important for DOER to indemnify itself and the Commonwealth against project-related liability, as the EDCs currently have in their contracts.

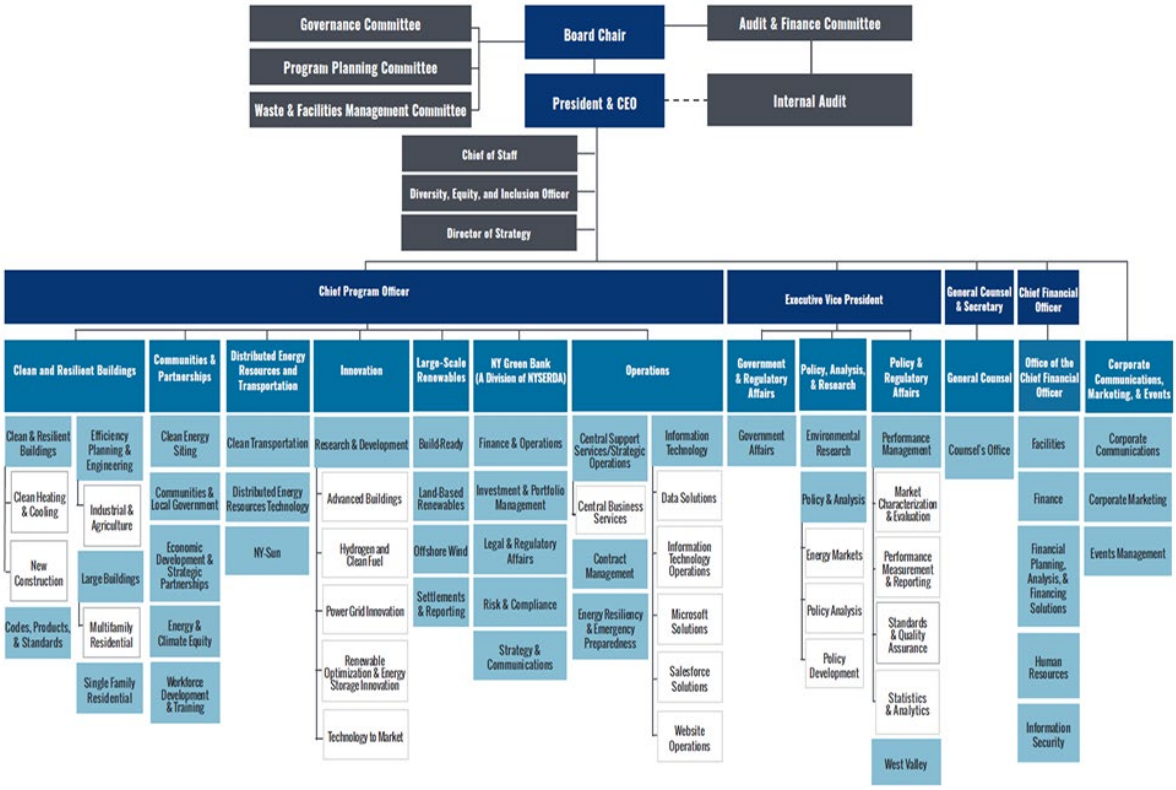
Energy Services: As raised by some stakeholders, the DOER framework preserves the authority to solicit for energy services, or the operation of infrastructure that increases the deliverability or reliability of clean energy generation or reduces the cost of clean energy generation, including, but not limited to, transmission, energy storage and demand response technologies. This solicitation authority has not yet

been exercised, although Section 83E may include energy service in future rounds. If DOER solicits energy services, DOER will need to demonstrate the need for these services to meet GWSA emission limits and draft contracts and an RFP that clearly define what DOER seeks to procure.

DOER Staffing and Funding

Along with the significant increase in responsibility, DOER will need to expand staffing and resources. Part of DOER's proposed legislative language includes the creation of a new division and a Central Procurement Fund that can collect funds from the EDC tariff. These will be essential provisions to the success of the proposed framework. To meet these needs in New York, NYSERDA maintains a division of large-scale renewables.

Figure 8: NYSERDA Organizational Structure[132]



[132] NYSERDA, Operations, Accomplishments, Mission Statement, and Performance Measurement Annual Report Fiscal Year Ended March 31, 2024, p. 33; available at https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Publications/Annual-Reports-and-Financial-Statements/Annual-Report-on-Operations-and-Accomplishments-and-Mission-Statement-and-Performance-2024.pdf

Contract Administration: As signatories to the long-term contracts, DOER will not only need to draft and negotiate the contracts but also administer the contracts through the contract term. This will require new staff with expertise in contract administration, a new area for DOER.

Staffing and Retention: With contracts of this size, DOER will need to identify candidates for new fiscal and legal positions that have experience in contracts but also energy. The northeast can be a competitive marketplace for the hiring and retention of qualified specialists. DOER will need to develop a recruitment strategy and offer competitive packages.

Impacts on Energy Markets and Costs

Shifting Costs to Delivery: The tariff will assign costs to all electric distribution customers with costs appearing on the delivery side of the bill. By retiring attributes on behalf of EDC customers, suppliers will have less RPS compliance costs and supply costs should decrease. While the customer will have both the cost and the savings of the long-term contracts in their total bill, it will shift any necessary cost recovery from supply to delivery.

Contracts Risk Premiums: Negotiations over contract terms are often about the shifting or sharing of risk between the two parties. As more risk is shifted to the developers, such as risks of financing and market volatility, developers may include those costs in their bid prices. DOER will balance risks to ratepayers with reducing risk to developers to achieve the most affordable costs with limited risks. This will include the consideration of indexing mechanisms in contract pricing.

Financing: Clean Energy Procurements have a long history of facilitating the financing of new projects through contracts with the creditworthy EDCs. To maintain the same goal that long-term contracts can be used for financing, DOER will need to consult with financial institutions and determine next steps.

RPS and Attribute Markets: DOER will retire any purchased attributes on behalf of the EDC customers and reduce any applicable portfolio standard requirements for suppliers that have an obligation to comply. This will allow customers to see the benefits of the contract through reduced supply costs on their bill. This will impact the bi-lateral attribute market in New England by changing supply and demand. DOER will report the impact of any retired certificates transparently and in advance of the impacted year to reduce volatility. DOER will need to develop this reporting process with stakeholder feedback.

Consultation for This Report

DOER hosted five stakeholder consultations prior to the release of this Report.[133] Following an initial presentation on the proposed procurement framework recommendation, DOER solicited any additional comments from the consulted parties. A summary of the initial comments is included below.

Table 8: Initial Consultation Comment Summary

Existing Targets and Authorities	Commenters stated that the existing targets in Section 83 through Section 83E should remain in order to ensure industry growth.
New Targets	Commenters, especially offshore wind developers, expressed a need for a legislative target outside of the Resource Solicitation Plan that demonstrates a commitment to specific resources such as offshore wind. This will allow for market certainty and growth.
Resource Portfolio	Comments highlighted the success of procurements that are open to multiple resource types, especially in identifying projects likely to achieve commercial operation. Commenters supported extending the procurement authority to other resources that can achieve emission reductions.
Technologies	Commenters supported DOER identifying technologies that have demonstrated that they are deployable and not using the solicitation process for technology research and demonstration.
Contract Pricing Structures	Developers support DOER's consideration of pricing structures that would provide more flexibility over the term of the contract. Commenters stated that flexibility would support lower prices by reducing pricing risk for developers.
Contract Term	Commenters support for contract length varied based on the type of technology and the needs for specific projects. Offshore wind developers generally supported a 30-year contract. Commenters supported preserving flexibility to determine optimal contract length for different solicitations and projects.
Energy Services	Comments were cautious about the use of energy services solicitations, highlighting that regionalizing energy services costs, especially for transmission, will be more affordable for Massachusetts.
Facilitating Financing	DOER received comment highlighting support for DOER seeking an investment grade credit rating from a major agency such as S&P or Moody's to support buyer's credit.

[133] This Report is released as a Draft for public comment. DOER will continue stakeholder consultations and refine the report before finalization, including consultations with other interested parties such as financing organizations, large business or commercial customers, and community organizations.

Interconnection Standards	A developer supported to use of surplus interconnection service for future procurements to allow for more efficient use of existing fossil fuel generators.
Existing Resources	DOER received comments supporting the consideration of existing resources as well as new resources. Existing resources may require new financing for operations, and their eligibility in the solicitation process may result in lower prices and greater utilization.
Investments	Commenters highlighted the affordability concerns of including economic development or other non-energy commitments as part of the contracting cost. Commenters support the use of Commonwealth coordination to achieve the same goals with other sources of funding.
Labor Reporting	Commenters supported DOER requiring bidders to disclose commitments to workforce and economic development within the Commonwealth, as well as documentation demonstrating the developer's efforts to expand workforce diversity, equity, and inclusion.
Environmental Mitigation	Comments supported the continued use of environmental mitigation reporting and commitments.
Public Process	DOER received comments supporting the use of public review of draft RFPs and contracts to increase transparency and lower contract risks. Additionally, commenters supported continued consultation with industry and other procurement partners as the new process is refined.
Role of EDCs	EDC comments highlighted the successful history of procurements and partnership with DOER. There is support for a continued EDC role as technical experts.

Appendix

Table of DPU Proceedings

DPU Dockets for:	RFP Review and Approval	Contracts
83	10-76	11-05, 11-06, 11-07, 11-12, 11-30, 09-138
83A	13-57	13-146/147/148
Multi-State 83A	15-84	17-117/118/119/120
83D	17-32	18-64/65/66, 24-160
83C Round I	17-103	18-76/77/78
83C Round II	19-45	20-16/17/18
83 C Round III	21-40	22-70/71/72
83C Round IV	23-42	TBD