

Offshore Wind:

Recommendations for a Coordinated Aggregated Power Procurement Mechanism for Offshore Wind Projects in New England

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Table of Contents

Executive Summary	3
Introduction	4
The Case for Offshore Wind in New England	5
Offshore Wind: Benefits and Challenges	6
Current Regional Activities	8
Findings	10
Recommendations	11
Additional Considerations	14
Conclusion	15
About NECEC & the NECEC Institute	16

Executive Summary

Some of the best offshore wind resources in the world reside in New England, and they are the largest indigenous renewable energy resource in the region. A recent study by the US National Renewable Energy Laboratory (NREL)¹ estimates that over 4,000 gigawatts (GW) of offshore wind energy potential exists nationwide. Thirty-three percent of this total is located along the Atlantic coast alone. Harnessing a small fraction of this amount – the proposed 54 GW as laid out in the National Offshore Wind strategy² – could power approximately 14 million homes.

Offshore wind power has the potential to play a major role in New England's electricity generation future for several reasons. First, the Atlantic Coast has outstanding wind resources with an ideal geography and promising policy environment for a vibrant offshore wind industry. Second, tapping into this abundant renewable resource will aid economic growth by attracting investment and creating skilled jobs. Third, offshore wind will increase the region's diversity of energy supply, thereby mitigating energy price volatility and enhancing energy security. Finally, offshore wind has the capability to substantially contribute to meeting New England's long-term environmental goals.

With this tremendous opportunity in mind, the Offshore Wind Task Force of the New England Clean Energy Council (NECEC) was convened to identify the barriers to development of this renewable resource and to provide recommendations on how they can be overcome. Based on an industry survey and stakeholder meetings, project financing was identified as a primary barrier to development of the offshore wind sector.

While long-term contracting historically has had great success in encouraging renewable energy development, the size where offshore wind projects can capture economies of scale is much larger than onshore projects, creating a situation where no single buyer can readily purchase the full amount of energy produced by a project. Therefore, large-scale aggregated procurement directed at the development of an offshore wind industry in New England is essential to leverage the region's substantial wind resources and reduce costs. This type of procurement program allows multiple purchasers to support a single project.

¹ National Renewable Energy Laboratory, *Large-Scale Offshore Wind Power in the United States*, September 2010. Available at: <http://www.nrel.gov/docs/fy10osti/49229.pdf>

² National Offshore Wind Strategy
http://www1.eere.energy.gov/wind/pdfs/national_offshore_wind_strategy.pdf

The New England Clean Energy Council's Offshore Wind Task Force makes the following recommendations regarding the structure and elements that will make an aggregated procurement for offshore wind successful:

1. A coordinated aggregated procurement mechanism should be developed over as large an area and customer base as possible, ideally over all of New England.
2. A schedule for multiple RFPs over time should be established to demonstrate the policy commitment needed to enable offshore wind to meet increasing RPS requirements, future generation needs, and greenhouse gas (GHG) reduction goals.
3. The procurement process should be timed to enable contracts to be in place early in the project development process and coordinated with the timing of the federal offshore wind area leasing process.
4. The procurement process should result in power purchase contracts of sufficient size and length to enable developers to finance projects in a manner that ensures costs to customers are kept as low as possible.
5. The counterparty to the power purchase contract should be clearly defined and creditworthy.
6. The procurement process should employ a structure that allows for public (e.g., municipal) and private participants to take advantage of financing mechanisms (e.g., tax exempt bonds) that can result in lower cost debt.
7. A single coordinated procurement process should be used to reduce transaction costs even if there are multiple entities and contracts involved in one project.
8. The procurement should be managed by one entity per state to reduce transaction costs for management and administration of the process.
9. The procurement process must be allowed and supported by existing law or new legislation, if needed, in each state.
10. The procurement process should be transparent to ensure public and customer support, rely on competition to ensure discipline regarding costs, and result in contracts evaluated based on their overall cost-effectiveness over their term.

A well-designed, coordinated, and aggregated procurement process can help New England become the nation's leader in offshore wind development.

Introduction

In early 2012, the New England Clean Energy Council convened an Offshore Wind Task Force to develop recommendations for a procurement and contracting process at the scale and scope necessary to effectively attract investment in this abundant resource. The Task Force was made up of 24 members selected from development, transmission, supply chain, government, academic institutions, and national and regional trade organizations. Work began in March 2012 with a survey to establish an understanding of the most pressing concerns facing the offshore wind community, sent to approximately 150 stakeholders in the offshore renewables sector, including subject matter experts, developers, supply chain experts, transmission executives, financiers,

and members of government. The survey revealed that financing was the chief obstacle to offshore wind development and that securing financing depended on establishing an aggregated procurement process. Therefore, the Task Force focused on developing recommendations for an effective and efficient coordinated aggregated procurement process for large offshore wind projects. These recommendations are outlined in the following pages.

The Case for Offshore Wind in New England

Some of the best offshore wind resources in the world reside in New England and they are the largest indigenous renewable energy resource in the region. A recent study by the US National Renewable Energy Laboratory (NREL)³ estimates that over 4,000 gigawatts (GW) of offshore wind energy potential exists nationwide. Thirty-three percent of this total is located along the Atlantic coast alone. Harnessing a small fraction of this amount – the proposed 54 GW as laid out in the National Offshore Wind strategy⁴ – could power approximately 14 million homes.

New England possesses the ideal geography for offshore wind development. This massive energy source lies in close proximity to some of the nation's largest cities and electricity demand centers, allowing the opportunity to meet the growing demand for power in New England with clean energy.⁵ Leading academic institutions and a highly skilled workforce are also located throughout the New England region, providing a strong base for the successful development of an offshore wind industry.

In addition, offshore wind is receiving significant interest and public policy support from New England states and the federal government. In 2010, Secretary of the Interior Ken Salazar announced the “Smart from the Start” wind energy initiative to accelerate the responsible development of wind energy on the Atlantic Outer Continental Shelf. In 2011, the Bureau of Ocean Energy Management (BOEM) identified two Wind Energy Areas within New England: the Area of Mutual Interest between Massachusetts and Rhode Island and the Massachusetts Wind Energy Area south of Nantucket Sound. Planning for additional development of offshore wind in the Gulf of Maine is also being discussed. Furthermore, Governor Patrick of Massachusetts and Governor Christie of

³ National Renewable Energy Laboratory, *Large-Scale Offshore Wind Power in the United States*, September 2010. Available at: <http://www.nrel.gov/docs/fy10osti/49229.pdf>.

⁴ National Offshore Wind Strategy
http://www1.eere.energy.gov/wind/pdfs/national_offshore_wind_strategy.pdf

⁵ National Wildlife Federation. 2012. *The Turning Point for Atlantic Offshore Wind Energy*, p.5. Available at: http://www.nwf.org/~media/PDFs/Global-Warming/Reports/NWF_2012OffshoreWind_Final.ashx

New Jersey have signed legislation into law that will facilitate financing solutions and provide incentives for offshore wind projects. These recent steps, along with New England's geographic advantages, have positioned the region to take advantage of this immense resource.

Offshore Wind: Benefits and Challenges

The Potential Benefits to the Region

Offshore wind development offers the potential for New England to stabilize electricity prices, create jobs and economic development, enhance energy security, reach environmental goals, and improve grid resiliency. Each of these areas is explored in more detail below.

Stabilize Electricity Prices

Local renewable energy provides a hedge against the price volatility of fossil fuel, such as oil, coal and natural gas, thereby mitigating electricity price volatility and strengthening the region's and nation's energy security. Offshore wind projects have no fuel or feedstock costs and very low and predictable operation and maintenance costs. Moreover, offshore wind contributes to the electricity mix on hot summer days when demand and fossil generation costs are high, thereby reducing electricity prices for customers. Because wind is a free "fuel," it exerts downward pressure on wholesale electricity prices as it displaces more costly fuels in the generation dispatch. Moreover, as a renewable, indigenous resource, wind does not exhibit the same price volatility as fossil fuels. According to the New York Independent System Operator, for every 1,000 MW of wind on the system, consumers save \$300 million in wholesale energy costs.⁶

Create Jobs & Economic Development

Hundreds of thousands of local, high quality jobs will potentially result from the industry's long supply chain encompassing the component manufacturing, assembly, testing, construction, operation and servicing of offshore wind farms, plus general power industry activities including sales and marketing, thus spurring economic development along the Atlantic Coast. Research shows that developing 7.7 GW of offshore wind along the Atlantic Coast will create over 300,000 direct and indirect jobs and result in a Gross Regional Product (GRP) increase of \$30 billion.⁷

⁶ National Wildlife Federation, p. 11.

⁷ National Wildlife Federation. 2012. *The Turning Point for Atlantic Offshore Wind Energy*, p. 10. Available at: http://www.nwf.org/~media/PDFs/Global-Warming/Reports/NWF_2012OffshoreWind_Final.ashx

In addition to jobs and increased GRP, the region will see other economic benefits such as lower, more predictable energy prices over the long term for electricity customers, and retention of a significant portion of the billions of dollars now spent annually importing fuel from outside New England within the region.

Enhance Energy Security

Offshore wind will also enhance regional and national energy security and stability by diversifying the electricity supply mix. Small reductions in the amount of energy available or changes in the price of fossil fuels can cause negative ripple effects throughout the economy. These effects in New England, and likely more broadly, will continue to the degree that fossil fuels are imported and/or are bought and sold in international markets. A diversified energy mix that includes offshore wind will help mitigate these costs and enhance market stability.

Reach Environmental Goals

The environmental benefits of offshore wind are also substantial and will help New England meet several of its energy and environmental policy goals, including its Renewable Portfolio Standards (RPS) and Greenhouse Gas (GHG) Reduction Targets. Technology has advanced, with the largest offshore wind turbine approaching a capacity of 6 MW, producing approximately 25 million kWh per year,⁸ and displacing 19,500 tons of CO₂ emissions annually compared to fossil fuels.⁹ The average New England household uses 7,416 kWh of electricity per year.¹⁰ In addition, if 20% of electricity were supplied from wind, cumulative water consumption in the electric sector would be reduced by four trillion gallons by 2030.¹¹

Improve Grid Resiliency

Renewable energy technologies, such as wind and photovoltaics, have proven more resistant to failure in extreme weather conditions like storms. Due to their resilient design and decentralized structure, they are more likely to withstand extreme weather events with minor or no damage, and return to service more quickly after a storm.^{12,13}

⁸ Siemens Energy Press release:

<http://www.siemens.com/press/pool/de/pressemitteilungen//2012/energy/wind-power/EWP201210001e.pdf>

⁹ Synapse Energy: The Hidden Costs of Electricity. Sept 2012

¹⁰ EIA.gov Consumption Table. Available at:

http://www.eia.gov/electricity/sales_revenue_price/xls/table5_a.xls

¹¹ U.S. Department of Energy. 2008. *20% Wind Energy by 2030*, p.107. Available at:

http://www.20percentwind.org/20percent_wind_energy_report_revOct08.pdf

¹² <http://www.renewableenergyworld.com/rea/news/article/2012/11/hurricane-sandy-uncovers-strength-and-simplicity-of-renewable-energy-systems?cmpid=WNL-Friday-November2-2012>

¹³ <http://www.evwind.es/2012/11/04/hurricane-sandys-impact-on-wind-turbines-minimal/25564/>

The Challenges to Offshore Wind

The potential benefits of offshore wind to New England's industry, businesses and citizens are tremendous. Wind is the region's largest indigenous energy resource and, as a major renewable (and inexhaustible), energy source, holds the possibility to move New England from its perennial place at the end of the energy pipeline toward the front of the pack. The challenges facing the development of offshore wind are significant, but can be overcome; they include the technical challenges of erecting large structures in deep water, siting and permitting challenges faced by all large energy production facilities, and the cost-competitiveness challenges faced by other renewable energy technologies. Offshore wind developers' ability to secure customers for their power and financing so to move ahead with project development is a primary challenge underlying all other challenges.

As offshore wind projects seek approvals to sell their output to electric ratepayers, one hurdle that must be overcome is that existing regulatory systems typically do not account for many of the tremendous economic benefits of offshore wind. These often unrecognized benefits include job growth, avoidance of air pollution and associated health impacts, and climate mitigation. Massachusetts has begun to level the playing field in connection with the review of long-term power purchase agreements (PPAs) for all RPS-eligible renewable energy, including offshore wind, by explicitly taking into account factors such as energy system reliability benefits, jobs and economic development, and what are known as "price suppression" benefits. To allow offshore wind to compete fairly for power purchase agreements and to recognize the higher capacity factors for many offshore wind sites, it is important for regulators to take such "price suppression" and other benefits into account.

As noted above, the chief obstacle to offshore wind development is financing, and secure financing depends on establishing a procurement process for a project's power. The Task Force therefore elected to develop a recommendation for coordinated aggregated procurement for large offshore wind projects in New England. This recommendation's initial primary focus was on Massachusetts, given its established policy framework supporting long-term contracting for renewable energy, and its central role as the largest load in the ISO-New England.

Current Regional Activities

NECEC recognizes that a wide variety of organizations have been investigating the challenges of tapping offshore wind's potential. These include the Offshore Wind

Accelerator Project and Clean Energy States Alliance, American Wind Energy Association (AWEA), United States Offshore Wind Collaborative, New England States Committee on Electricity (NESCOE), and RENEW, among others. As part of their efforts, a number of these groups have produced reports considering how to most effectively tap the benefits of offshore wind and identifying a coordinated aggregated procurement process as a key element in successful offshore wind development.¹⁴

There are also two efforts underway that are moving toward implementation of coordinated aggregated procurement:

- In 2010 at the request of the New England Governors' Conference (NEGC), the New England States Committee on Energy (NESCOE)¹⁵ began exploring the potential for and impact of coordinated procurement of renewable energy across the region. At their meeting in July 2012, the NEGC passed a resolution calling for the development of a work plan to implement coordinated procurement by the end of 2013. While not directed at addressing the obstacles facing offshore wind, a regional approach to coordinated procurement of renewables could generally provide a model for offshore wind.
- In addition, in August 2012, Massachusetts Governor Patrick signed into law a bill that, among other requests, calls for a study of "central procurement practices," slated for completion in September 2013. The law also permits voluntary joint procurement of power by Massachusetts utilities beginning in January 2013. Again, while not directed toward offshore wind, the model for procurement of large-scale renewable projects could be readily applied to offshore wind.

¹⁴ See Clean Energy States Alliance, Collaborative Procurement of Offshore Wind Energy: A Buyers Network: Assessment of Merits and Approaches (2012) – This recent report found that implementing a "buyers network", or an aggregated procurement approach, could reduce the levelized cost of energy (LCOE) for OSW significantly, especially if combined with the use of low-cost debt financing (either from state or municipal taxable or tax-exempt bonds). The report found that significant LCOE reductions from aggregation are due to reduction in capital costs from economies of scale, amortization of fixed costs (such as transmission lines) over larger wind farms, and lower construction costs and lower risks resulting in lower financing costs. The report provides detailed recommendations on the implementation of a buyers network for OSW; and National Wildlife Federation (NWF), The Turning Point for Atlantic Offshore Wind Energy – NWF's report makes the case that coordinated procurement strategies are a key element in harnessing both the economic development benefits and the affordable, reliable power that offshore wind can provide.

¹⁵ NESCOE is a not-for-profit organization representing the collective interests of the six New England States on regional electricity matters.

At the federal level, the Bureau of Ocean Energy Management (BOEM) offshore wind leasing process has been progressing. On October 23, 2012, BOEM announced an agreement to issue a noncompetitive lease to NRG Bluewater Wind Delaware LLC for development off the Delaware coast. However, this project is still seeking investors. On November 5, 2012, BOEM released a draft environmental assessment for a lease area off the coast of Massachusetts of approximately 1100 square miles. These are important steps toward tapping the tremendous offshore wind potential along the Atlantic coast; however, projects cannot move forward without financing. Moreover, the schedule for the lease process may not be well-matched to the timing of potential procurement proposals that would enable offshore wind projects to secure the financing they need.

Findings

A growing array of offshore sites are in early stages of leasing for wind development but need funding to move through development to commercial operation. Historically, long-term contracts have provided the surety of revenue necessary for power generation projects to attract financing. However, offshore wind necessitates not only long-term contracts, but also multiple purchasers to buy power from one system.

The Offshore Wind Task Force focused its efforts on the need for financing and considered how coordinated aggregated power procurement models across multiple utilities and multiple states could address this need. Developers need to provide proof of an assured revenue stream, e.g. from sales of power output, in order to attract investors and financing. One way to provide this assurance is through long-term contracts executed early in the development process, to purchase a significant amount of a project's generation.

Long-term power purchase contracts are a proven means of providing the assurance needed to attract project financing. They have been successfully used to encourage renewable energy development in recent years, most notably in Massachusetts, where the long-term contracting program for renewable energy has just been expanded and extended.¹⁶ However, for offshore wind, long-term contracts will need to be of greater size than any single purchaser (e.g., individual electric distribution companies) can absorb. Therefore, a mechanism for aggregating contracts across purchasers, such as utilities, will be required.

¹⁶ *An Act To Relative To Competitively Priced Electricity In Massachusetts* signed into law August 3, 2012.

To attract the financing needed to achieve the scale that will bring costs down and develop a robust offshore wind sector in New England, there needs to be a policy and regulatory roadmap for multiple projects of several hundred megawatts each over 10, 15, or 20 years. This long-term public policy commitment will signal to investors and elements within the supply chain that New England is serious about developing offshore wind. Only with this clear commitment will companies have the economic incentive to locate in the region; such relocation will bring jobs, strengthen the tax base, and attract investors to offshore wind projects in New England.

While acknowledging that it was not the focus of its efforts, the Task Force noted the need for public or consumer support to underpin a long-term policy commitment to the development of offshore wind. The offshore wind industry needs to lead in making the case that the short-term, upfront costs of developing offshore wind are warranted by the long-term benefits.

Recommendations

In addressing the financing challenges for offshore wind, the Offshore Wind Task Force focused its efforts on identifying the elements of a successful coordinated aggregated procurement process in New England. Such a process has the potential to create the scale needed to attract (attract what?) and reduce the cost of financing for large-scale offshore wind projects, and create a more efficient and consistent process for both purchasers and power producers. The process will create a defined revenue stream for the generators of offshore wind and other forms of clean, renewable, and locally produced energy, enabling financing and supporting industry development.

Efforts to implement a coordinated aggregated procurement process for offshore wind and the key elements needed to make the process a success should be part of and/or coordinated with and fed into NESCOE's process to establish coordinated regional procurement of renewable energy as laid out in the July 31, 2012 resolution of New England Governors' Conference. They should also be coordinated with and fed into the study of central procurement required by the 2012 Massachusetts energy bill, and other New England state energy plans, policies and strategies.

Key Elements

- A coordinated aggregated procurement mechanism for offshore wind would ideally be developed over **as large an area and customer base as possible**. New England is an obvious choice. However, it could initially be put in place for

one state within the New England region and then adopted by others. Massachusetts, with its history of success with long term contracts for renewable energy, the recent expansion and extension of this program, the suggestion of joint procurement by electric distribution utilities (as opposed to procurements utility by utility), and the study of central procurement authorized by the 2012 Massachusetts energy bill, would be a logical candidate.

- The coordinated aggregated procurement process should lay out **a schedule for multiple RFPs over time** that will enable offshore wind to meet increasing RPS requirements, future generation needs and greenhouse gas (GHG) reduction goals. As previously noted, this schedule will also send the strong signal that New England is committed to creating a fertile environment for the offshore wind industry, which will provide the incentive needed to develop and attract investment throughout the offshore wind supply chain.
- The procurement process should be timed to enable **contracts to be in place early in the project development process** and, ideally, should be coordinated with the timing of the federal offshore wind area leasing process. Power purchase contracts to secure project financing should be executed either before or simultaneously with a lease being granted to enable developers to take advantage of discounts on the leases allowed under federal guidelines for the BOEM program. This will reduce overall project costs, thereby benefitting customers.
- The coordinated aggregated procurement process should result in long-term power purchase **contracts of sufficient size and length** to enable developers to finance projects in a manner that ensures costs to customers are kept as low as possible. Single Requests for Proposals under such a process should lead to multiple contracts that, in aggregate, would allow for purchases large and long enough to support financing of individual projects sized to capture economies of scale and reduce financing costs, e.g., 500-700 MW over 20 years, thereby lowering prices to customers.
- The **counterparty** to the power purchase contract resulting from the aggregated coordinated procurement, as with any counterparty, must be **clearly defined and creditworthy** in order for the developer to secure financing. That is, there must be confidence that the purchaser will have the means to pay for power over the term of the contract. To the extent that there are government purchasers (e.g. for a government agency's own energy use), their commitment to purchase cannot be subject to annual appropriation processes. Rather, such purchasers

must be able to issue bonds or otherwise demonstrate (e.g. through access to revenues from a system benefit charge for this purpose) their ability to commit to purchases over a long-term contract.

- The coordinated aggregation process should consider **employing a structure, including all potential participants, that enables capitalization of effective financing mechanisms that can result in lower cost debt.** For example, if the aggregation process includes participation by municipal utilities or municipalities, these entities could issue tax-exempt bonds and use the proceeds to prepay for their power purchase as a mechanism for financing all or part of the selected projects. The issuance of these bonds indirectly provides funds for construction and reduces financing costs. Alternatively, state and municipal authorities (such as state economic development authorities) could act as conduit lenders to issue taxable bonds – with today’s favorable rates – to lower the cost of capital for offshore wind project developers selected through the procurement process (with the public bond issuer not responsible for bond performance).¹⁷
- A single project could enter into contracts with one entity (e.g. a large power authority) or multiple entities (e.g. several distribution utilities, municipalities or other large end-users); however, to reduce transaction costs, the contracts should result from a **single procurement process.** In addition, contracts should have **consistent terms** for efficiency in negotiation, implementation, and fulfillment.
- This single procurement process should be **managed or administered by one entity** per state, if not by one entity for the region as a whole. To the extent that a regional procurement administered by one entity is not practical, state procurements should be coordinated with each other. The entity managing or administering the procurement should take advantage of the expertise in energy and procurement that may reside in different agencies.
- The coordinated aggregated procurement process must be allowed and **supported by existing law or new legislation.** There are several ways to implement a coordinated aggregated procurement process, including (a) the establishment of a centralized approach using a public or quasi-public agency, (b) formal coordination between states and purchasers administered by an

¹⁷ See CESA Collaborative Procurement Report at section III.

existing private or public entity¹⁸, or (c) creation of a non-binding consortium in which one member serves as agent.¹⁹ Use of a non-binding consortium or formal coordination approach will involve less time and effort to establish, and can likely be implemented without any new legislation. For example, a coordinated process could be undertaken by a voluntary grouping of distribution companies. Using that approach, the regulatory process should clearly lay out the timing for the procurement process and regulatory approval for the distribution companies. If a more centralized approach is used in which a public agency or quasi-public authority is selected to administer or manage the coordinated procurement within a state or across several states to expedite common contract terms and regulatory approvals for multiple resulting power purchase agreements, new legislation and authority will likely be needed in the participating New England states. Under any approach employed – informal, coordinated or centralized procurement – rules and regulations governing the procurement process must be clearly set out with determined schedules in order to achieve the goal of providing an assured stream of revenues to support the financing needed to develop offshore wind projects.

- The coordinated aggregated procurement process should be **transparent** to ensure public and customer support, **rely on competition** to ensure discipline regarding costs, and resulting contracts should be evaluated based on their **overall cost-effectiveness** over their term, taking into account economic, energy and environmental benefits and costs, in order to ensure that they deliver benefits to customers over the long-term.

Additional Considerations

Federal Offshore Wind Area Leasing

The timing of the BOEM process for issuing wind area leases is driving some of the immediate urgency around the need for financing to support development of offshore wind. To compete for leases successfully (and be eligible for discounts), developers may need to have power purchase contracts in place to attract the financing needed to

¹⁸ Formal coordination among the states could be achieved through the use of a memorandum of understanding (MOU) to govern and guide the procurement process. The MOU could be developed to preserve states' (and public utilities commissions') discretion and authority, while establishing the responsibilities and commitments of the participants and the design of the procurement process. CESA Collaborative Procurement Report at section IV. See also NESCOE Coordinated Competitive Renewable Power Procurement Work Plan, November 2012, as an example of such a process.

¹⁹ *Id.* at section I.

make the financial commitment to enter into a lease. The Task Force recommends that the offshore wind industry and its advocates engage in discussions with BOEM to ensure that the timing of its process does not undermine the achievement of its goals. The BOEM schedule may need to be adjusted to accommodate the timing of development of mechanisms, such as coordinated aggregated procurement, needed to secure financing. In addition, the size of the leasing areas should be increased so that they are large enough to accommodate projects in the range of 1 to 2 GW.

Transmission

The Task Force discussed how to treat transmission costs associated with the development of offshore wind. While there may be other mechanisms to fund the transmission investment needed to deliver offshore wind power to customers, the Task Force concluded that these costs need to be taken into account in a coordinated aggregated procurement process or the contracts that result from such a process. The issue of transmission associated with remote renewable energy development, such as offshore wind, is currently a topic of discussion by ISO-NE and NESCOE, and will be affected by decisions made regarding implementation of FERC Order 1000 on Transmission Planning and Cost Allocation.²⁰ The timing of the resolution of transmission cost allocation questions will be critical to the success of coordinated aggregated procurement for offshore wind. The two must be addressed in parallel.

Other Sources of Early Stage Financing

As the Task Force explored the obstacles to financing for offshore wind development, the question whether there may be other sources of funding to support early stage project development arose. This is an area that the offshore wind industry and its advocates should continue to investigate. There may be opportunities for public-private partnerships where public monies are invested initially and repaid as projects reach certain milestones.

Conclusion

Some of the best offshore wind resources in the world reside in New England and constitute the largest indigenous renewable energy resource in the region. With this tremendous opportunity in mind, the New England Clean Energy Council's Offshore Wind Task Force was convened to identify the barriers to development of these renewable resources and provide recommendations on how to overcome them. Based

²⁰ Federal Energy Regulatory Commission, Docket No. RM10-23-000; Order No. 1000, July 21, 2011.

on an industry survey and stakeholder meetings, project financing was identified as a primary barrier to development of the offshore wind sector. The Task Force found that development of a large coordinated aggregate procurement mechanism will be essential to take advantage of the region's substantial wind resources, reduce the cost of their development, and capture their potential to stabilize electricity prices, create jobs and economic development, enhance energy security, reach environmental goals, and improve grid resiliency.

About the New England Clean Energy Council (NECEC) & the NECEC Institute

The New England Clean Energy Council is a clean energy business association, whose members and sponsors include clean energy businesses, services and technology companies, venture investors, major financial institutions, universities, industry associations, utilities, labor and large commercial end-users. They span the broad spectrum of the clean energy sector, including energy efficiency, renewable energy, combined heat and power (CHP), energy storage, fuel cells, biofuels, advanced and "smart" technologies. As sister entities under the NECEC umbrella, NECEC and the NECEC Institute share a common mission to accelerate New England's clean energy economy to global leadership by building an active community of stakeholders and a world-class cluster of clean energy companies.